



THE SYSTEM-WIDE EFFECTS OF THE SCALE-UP OF HIV/AIDS, TUBERCULOSIS, AND MALARIA SERVICES IN ETHIOPIA

October 2010

This publication was produced for review by the United States Agency for International Development. It was prepared by Hailom Banteyerga and Aklilu Kidanu, (Miz-Hasab Research Centre); David Hotchkiss and Manisha Tharaney (Tulane University); Susna De (USAID/Namibia); Katie Callahan (Consultant) for Health Systems 20/20 Project.



Mission

The Health Systems 20/20 **cooperative agreement**, funded by the U.S. Agency for International Development (USAID) for the period 2006-2011, helps USAID-supported countries address health system barriers to the use of life-saving priority health services. Health Systems 20/20 works to strengthen health systems through integrated approaches to improving financing, governance, and operations, and building sustainable capacity of local institutions.

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government

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ACRONYMS

ACT	Artemisinin-based Combination Therapy
AHTOP	Accelerated Health Officers Training Program (Ethiopia)
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infection
ART	Antiretroviral Therapy
ARV	Antiretroviral
BPR	Business Process Reengineering
CCM	Country Coordinating Mechanism
CDC	Centers for Disease Control and Prevention (U.S.)
CRDA	Christian Relief and Development Association
DFID	Department for International Development (U.K.)
DOTS	Directly Observed Treatment, Short Course
EDCA	Ethiopia District Comprehensive Assessment
EDHS	Ethiopia Demographic and Health Survey
EHNRI	Ethiopian Health and Nutrition Research Institute
EPI	Expanded Programme on Immunization (World Health Organization)
FFSDP	Fully Functional Service Delivery Pact
FMOH	Federal Ministry of Health (Ethiopia)
FP	Family Planning
GF	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GHI	Global Health Initiative
GHIN	Global HIV/AIDS Initiatives Network
GLRA	German Leprosy and TB Relief Foundation
HAPCO	HIV/AIDS Prevention and Control Office
HCT	HIV/AIDS Counseling and Testing
HEP	Health Extension Program
HEW	Health Extension Worker
HMIS	Health Management Information System
HRH	Human Resources for Health

HRIS	Human Resources Information System
HSDP	Health Sector Development Program (I, II, III)
HSS	Health Systems Strengthening
IHP	International Health Partnership
IMCI	Integrated Management of Childhood Illness
ITN	Insecticide-treated Bed Nets
MAP	Multi-country AIDS Program (World Bank)
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MOFED	Ministry of Finance and Economic Development
MOH	Ministry of Health
MSH	Management Sciences for Health
NEP+	Networks of HIV Positives in Ethiopia
NGO	Nongovernmental Organization
OI	Opportunistic Infection
ORS	Oral Rehydration Salts/Solution
PASS	Pharmaceuticals Administration Supply Service (Ethiopia)
PEPFAR	Presidential Emergency Plan for AIDS Relief
PFSA	Pharmaceutical Fund Supply Agency
PHCU	Primary Health Care Unit
PLMP	Pharmaceutical Logistics Master Plan
PLHIV	Persons Living with HIV
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother-to-Child Transmission
RDT	Rapid Diagnostic Tests (Malaria)
RH	Reproductive Health
RPM Plus	Rational Pharmaceutical Management Plus Program
SCMS	Supply Chain Management System
SCPRP	Sustainable Development and Poverty Reduction Program
SP	Sulphadoxine Pyrimethane
SPS	Strengthening Pharmaceutical Systems
STI	Sexually Transmitted Infection
SWEF	System Wide Effects of the (Global) Fund
TB	Tuberculosis

UNAIDS	Joint United Nations Programme for HIV/AIDS
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations
USAID	United States Agency for International Development
WHO	World Health Organization

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EXECUTIVE SUMMARY

BACKGROUND ON GLOBAL HEALTH INITIATIVES

Over the past ten years, the scale of efforts to improve global health in low- and middle-income countries has increased substantially, particularly in the fight against the HIV/AIDS, tuberculosis (TB), and malaria epidemics. Funding mechanisms such as The Global Fund to Fight AIDS, Tuberculosis, and Malaria (GF), the President's Emergency Plan for AIDS Relief (PEPFAR), and the World Bank's Multi-Country AIDS Program (MAP) have been instrumental in saving lives among some of the most disadvantaged populations in the world. Such disease-focused global health initiatives (GHIs) also have great potential to positively influence broad health systems by helping to alleviate constraints in financial and human resources for health care, information systems, service delivery, and other health-related areas. Decision makers at both the country and global levels recognize the importance of health systems strengthening, not only as a way to improve the sustainability of AIDS, TB, and malaria services, but to increase the likelihood of positive spin-off effects on services that address other diseases and conditions. Despite the attention that these issues have received in recent years, however, relatively little evidence is available on the impact of GHIs in low- and middle-income countries.

Ethiopia is a low-income country where GHIs have played a substantial role in the financing of the health system, but where information on the effectiveness of the aid has been difficult to collect. Given the country's great size, low level of socio-economic development, and large population, this financial support is welcome and needed. Nevertheless, given the magnitude of the funding, critical issues arise with respect to how GHI funding has influenced the broader health system.

The purpose of the study is to investigate the effects of GHI-supported initiatives on Ethiopia's health system. The study focuses on the effects in the following four thematic areas:

- Policy and reporting processes. Effects on alignment and harmonization of GHI policies with existing national policies, including decentralization and private sector involvement.
- Human resources. Effects on the design and implementation of human resources for health (HRH) strategies, and on the number, work burden, time allocation, and motivation of health workers at the primary health care facility level.
- Pharmaceuticals and commodities. Effects on procurement and distribution systems, and on the availability of pharmaceuticals at the primary health care facility level.
- Service delivery. Effects on the availability and utilization of focal (HIV/AIDS, TB, and malaria services) and non-focal health care services at the primary health care level, including FP and maternal and child health services.

RESEARCH DESIGN AND METHODS

The study is descriptive in nature and uses a mixed-methods research methodology based on data collected at three points in time – 2003/04, 2006, and 2009. For the empirical component of the study, survey data were collected from a panel of primary health care facilities in four regions of Ethiopia (Addis Ababa, Oromia, Amhara, and Somali), and then used to measure changes over time at the facility

and health worker levels. In addition, the study uses information collected through in-depth interviews from a range of stakeholders such as government health staff at the central and local levels and GHI representatives, and a review of previous reports and documents.

FINDINGS: HARMONIZATION OF POLICY, BUDGETING, AND REPORTING PROCESSES

Overall, the results of the study suggest that GHI investments and activities are well aligned with the government's health systems policies and priorities, both to fight HIV/AIDS, TB, and malaria and to strengthen the overall development of the health system. The government recognizes that the massive flow of resources from GHIs are an unprecedented opportunity to strengthen the overall health system, and through the Federal Ministry of Health's (FMOH's) strategic planning process (Business Process Reengineering), has been working actively with GHIs to strengthen a number of health system building blocks. One notable example is restructuring the Health Management Information System (HMIS), which has received extensive GHI support.

There also seemed to be agreement among those interviewed for this study that the government's efforts to improve aid effectiveness, which include the FMOH's Harmonization Manual and the International Health Partnerships Compact, have helped to improve harmonization of assistance received by the GHIs. At the same time, the influx of resources from GHIs in recent years has intensified the government's efforts to improve aid effectiveness in Ethiopia. However, many of those interviewed commented that GHI activities at the regional and woreda levels have not been well integrated into the woreda (district) planning process. Respondents attributed the problem to limited capacity.

FINDINGS: HUMAN RESOURCES

Interviews with key stakeholders suggest that funding from the GHIs as well as from other global partners has helped strengthen the human resource component of health systems in Ethiopia. A new national HRH strategy is in the process of being developed, with support from the GHIs. There have been efforts to rapidly scale up mid-level cadres of health workers and create new cadres while concurrently strengthening investment in training facilities and faculty. In addition, management functions such as in-service training and supervision have been improved and incentives have been introduced to retain physicians and specialists in rural hospitals and health centers.

Findings from the panel survey of facilities show that there was an overall increase in the number of health workers in public health facilities and in the mean hours they worked in focal diseases and in maternal and child health services. Health workers working on focal diseases also received increased training between 2003/04 and 2009. Overall job satisfaction increased marginally, but health workers sustained high motivation with regard to their pride in their work, their self-efficacy, and their perceived self-conscientiousness.

Maternal and child health services continued to be strengthened through the Health Extension Program, the accelerated health officer training, and the focused training of midwives and anesthetists to expand the basic and comprehensive emergency obstetric services. Curative services also received some attention as more doctors and nurses were trained and hospitals opened.

In spite of the positive changes, human resource constraints continue to be a major challenge in Ethiopia. In addition to the shortage and inadequate distribution of workers between urban and rural areas, health workers face poor working conditions, increased workloads, and inadequate financial

remuneration. Other considerations, such as high attrition among physicians, dual practices, and inability of regional and woreda levels to pay incentives due to lack of funding, also need to be further studied and addressed.

FINDINGS: PHARMACEUTICALS AND COMMODITIES

Over the period 2003/04 to 2009, Ethiopia's supply chains for pharmaceuticals and medical supplies have been strengthened thanks to the formation of Pharmaceuticals Fund Supply Agency (PFSA) and to technical assistance and funding from GHIs such as the GF and PEPFAR. This technical assistance has allowed PFSA to improve its capacity to identify, order, procure, and distribute drugs, even as GHI-supported projects and global agencies (e.g., UNICEF) continue to have key procurement, storage, and distribution responsibilities. The building of hubs that are closer to health facilities has reduced travel time and waste and improved the quality and efficiency of the services. Within the sample of health facilities visited in 2009, there were no reported shortages of essential drugs in the last year.

The presence of the PFSA has also encouraged private investors to invest in the production of pharmaceuticals. The Ethiopian Health and Nutrition Research Institute with direct support from the U.S. Centers for Disease Control and Prevention is strengthening the laboratory capacity in the country. Significant funding has already been allocated to this health system building block from the GF and PEPFAR. Nevertheless, this area of the health system still needs substantially more technical and financial support from development partners.

FINDINGS: SERVICE DELIVERY

The GHIs have played an important role in scaling-up and improving access to primary health care services in Ethiopia between 2003/04 and 2009. Health infrastructure has improved as a large number of health facilities have been built and are better equipped than only five years ago. HIV/AIDS services have been scaled up and the number of facilities offering testing, counseling, and antiretroviral treatment (ART) has increased. The GHIs have also had a great impact on the prevention of malaria and treatment of both TB and malaria. The results of this study suggest that there may have been indirect positive impacts on a number of structural aspects of service quality at the primary health care level. This is consistent with findings from population-based surveys that show that the use of maternal and child health services has increased over the last decade and from a previous study that found that Ethiopia has been able to maintain the performance of maternal and child health programs during the GHI-supported scale-up. In spite of these improvements, however, the soaring prevalence of communicable diseases and high infant and maternal mortality rates remain a big challenge for the health sector.

DISCUSSION AND RECOMMENDATIONS

The research design for this study contains a few limitations. These include the use of a convenience sampling approach to select health care facilities, which may have biased our results in favor of areas that are more urbanized; the inability to include a control group, which does not allow us to empirically attribute changes in indicators of the readiness to provide other types of services to the GHI-supported scale-up of focal services; poor quality of HMIS data within the sample facilities, which prevented us from assessing changes in the number of services provided; and the exclusion of hospitals, which have played a large role in the scale-up of focal services.

Despite these limitations, the study results support the premise that GHIs have played a positive role not only in the scale-up of services to fight HIV/AIDS, TB, and malaria, but also in the overall development of Ethiopia's health system. Ethiopia seems to be taking advantage of the opportunities

afforded by the GHIs to strengthen a number of system areas, including human resources, health information systems, and procurement and logistics systems. While the results suggest that some of the GHI-supported system strengthening initiatives have already influenced the readiness to provide non-focal services at the primary health care level, other broader strategic initiatives, including the strategy to reform HRH and the restructured HMIS, are still in the development or piloting stages. These types of initiatives are likely to be critical to the long-term development of Ethiopia's health system. They have the potential of facilitating the increased availability of a broad range of primary health care services, and they can help improve the likelihood that GHI-supported programs in Ethiopia are sustainable.

The following recommendations are based on the study findings, and may help shape the way forward to improve aid effectiveness and country ownership:

- **Encourage further FMOH involvement.** The FMOH should be commended for its achievements to date and encouraged to continue its efforts to develop a well-performing health system. Current government efforts as guided by the Business Process Reengineering initiative in improving planning and implementation functions, harmonizing policy and management approaches, strengthening the health sector's health information and logistics and supply systems, and developing a HRH strategy all need to be maintained and strengthened.
- **Increase GHI coordination at local levels.** While the GHIs have largely been successful in coordinating and planning activities to support the national HIV/AIDS plan, further emphasis is needed by GHIs to coordinate and plan activities at the local level in accordance with the woreda health planning process, which is critical to the government's strategy to improve harmonization.
- **Disburse funds directly.** GHIs should work with the government to assess the problems in disbursing GHI funds to those responsible for implementing planned activities, and to help fix the problems. Among the problems are stringent GHI reporting requirements, as well as problems in coordination between the Ministry of Finance and Economic Development and the Ministry of Health. Efforts to work within the government system should be accompanied by technical assistance to improve accountability, both internally (internal accountability within the country systems) and externally (allocation and disbursement of donor funds).
- **Emphasize government's role in its own stewardship.** GHIs should continue to develop the government's capacity to fulfill its stewardship function within the health system. This includes assessing the proper roles of the government and the private sector in the provision of health care services, and ensuring that civil society has the opportunity to have a voice in health sector decision making.
- **Coordinate HMIS.** GHIs should continue to work with the government to coordinate government and donor information needs through the restructured HMIS, which is currently being piloted. This will help improve information integration, maximize efficiency in the collection and use of information, and reduce the burden of collecting routine health data.
- **Amass health information for proper decision making.** GHIs should continue to help build human resource capacity to collect, analyze, and use health information for decision making at both the local and national levels. To ensure the information is used for decision making, GHIs should support the government's efforts to introduce performance-based payment mechanisms.
- **Reform pharmaceuticals logistics.** GHIs should continue to support the government's efforts to reform the national pharmaceutical logistics system. This will help improve the chances for long-term sustainability of GHI-supported programs as well as have spin-off effects on other areas of the health system.

- **Refine human resources strategies.** GHIs should continue to work with the government to improve public sector human resource policies. As with the HMIS, the GHIs have supported the government's efforts to develop a new HRH strategy, which reflects the joint commitment of the government and the GHIs in developing and strengthening the overall health system.
- **Introduce health insurance programs.** To reduce financial barriers to service use, GHIs should consider supporting the government's plan to introduce social and community health insurance.
- **Support innovative approaches.** Given the severe human and financial constraints faced by low-income countries, creative solutions are critical to be able to strengthen health systems and accelerate progress towards the Millennium Development Goals. GHIs need to encourage innovations instead of orthodoxy in dealing with barriers to health service delivery. The Health Extension Program is a good example in Ethiopia.
- **Monitor and evaluate health system reforms.** GHIs should support efforts to monitor and evaluate key health systems reforms, in order to determine whether the reforms are achieving their intended objectives and to make mid-course corrections. Reform initiatives that are particularly important to investigate are the HMIS innovations, the strategy to strengthen HRH, and the planned insurance programs.
- **Conduct research on the influence of GHIs on broader governance processes.** Our study has hinted that GHIs are strengthening decentralization and democratization processes that are becoming the pillars for the realization of the government's poverty-reduction objectives. This needs further research in order to better understand the effect of GHIs on broader governance processes.

I. INTRODUCTION

I.1 BACKGROUND ON GLOBAL HEALTH INITIATIVES

Over the past ten years, the scale of efforts to improve global health in low- and middle-income countries has increased substantially, particularly in the fight against the HIV/AIDS, tuberculosis (TB), and malaria epidemics. Funding mechanisms such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GF), the President's Emergency Plan for AIDS Relief (PEPFAR), and the World Bank's Multi-Country AIDS Program (MAP) have been instrumental in saving lives among some of the most disadvantaged populations in the world. Such disease-focused global health initiatives (GHIs) also have great potential to positively influence broad health systems by helping to alleviate constraints in financial and human resources for health care, information systems, service delivery, and other health-related areas. Decision makers at both the country and global levels recognize the importance of health systems strengthening, not only as a way to improve the sustainability of AIDS, TB, and malaria services, but to increase the likelihood of positive spin-off effects on services that address other diseases and conditions. Despite the attention that these issues have received in recent years, however, relatively little evidence is available on the impact of GHIs in low- and middle-income countries.

Ethiopia is a low-income country where GHIs have played a substantial role in the financing of the health system, but where information on the effectiveness of the aid has been difficult to collect. With a total disbursement of US\$1.329 billion to date, the GF is the largest donor in Ethiopia, closely followed by PEPFAR (US\$200–300 million annually since 2007/08) and the World Bank (US\$89.7 million) (<http://www.worldbank.org> 2010). Ethiopia is the top recipient of the GF grants by country (Salaam-Blyther 2010). Given the country's great size, low level of socio-economic development, and large population, this financial support is welcome and needed. Nevertheless, given the magnitude of the funding, critical issues arise with respect to how GHI funding has influenced the broader health system. These include the following:

- i. **Absorption and use of funds.** Has the health system absorbed and effectively used the additional funding?
- ii. **Strengthening of the national health system.** Has the scale-up of the targeted services, and the ways in which they are delivered, strengthened Ethiopia's health system?
- iii. **Spin-off effects.** Has the focus on HIV/AIDS, TB, and malaria affected the delivery of services for other diseases and conditions?
- iv. **Harmonization with existing policies.** To what extent have planned activities been harmonized with existing national policies and programs such as the Poverty Reduction Strategy Papers; Health Sector Development Program (HSDP) III, for the period 2005/06 to 2009/10 (Federal Ministry of Health 2005a); HIV/AIDS program; civil service reform program; and decentralization and democratization?
- v. **Organizational capacity.** How have GHI monies affected capacity building, particularly in human resource development and organizational systems such as health management information systems (HMIS) and procurement of drugs and commodities?

Answers to these questions will help to inform the effective implementation of GHI-supported initiatives in Ethiopia, to document and strengthen positive spin-off effects, and to mitigate unintended negative effects of the initiatives on the health system.

I.2 STUDIES OF SYSTEM-WIDE EFFECTS IN ETHIOPIA

The overall aim of this study is to examine GHI operations and outcomes in Ethiopia in terms of the functioning of Ethiopia's health system, chiefly at the primary health care level.

This study is part of the Global HIV/AIDS Initiatives Network (www.ghinet.org), a network of researchers in 21 countries that was established in 2006 to track the effects of this scale-up at national and district levels. This study is also an extension of the 2006 System Wide Effects of the Fund (SWEF) study in Ethiopia (Banteyerga et al. 2006). That study, originally designed to be the final report on system-wide effects of the GF, considered the data (from 2003/04) collected in the first phase of the study (Banteyerga et al. 2005), along with follow-up data (from 2006) from in-depth interviews at the facility and health worker levels. The 2006 study focused on the key areas of policy processes, human resources, public/private mix, pharmaceuticals and commodities, and service delivery. Overall, its findings suggested that the GF played a significant role in Ethiopia's health system and stimulated several positive developments – among them the relaxing of policy and program constraints and improvements in human resource issues, management systems, and logistics and supply systems within the health sector – while fostering a positive relationship between the public and private sectors. At the same time, however, the 2006 study also found relatively minimal effects of the GF at the primary health care facility level. One possible explanation for this finding is that the scale-up of services supported by GHIs was at a relatively early stage in 2006.

I.2.1 STUDY OBJECTIVES

As with the 2006 study, the objective of the current study is to assess system-wide effects of the GHI-supported scale-up on policy processes, human resources, pharmaceuticals and commodities, and service delivery in Ethiopia. This final phase differs from the 2006 study in the following ways: First, although some consideration is given to the role of the private sector in the development of Ethiopia's health systems, the system-wide effects on the private sector was dropped as a key area of focus. Next, whereas the 2006 study focused almost exclusively on the GF's role, the current study addresses the increased complexity of the international health assistance architecture by focusing more broadly on the effects of multiple GHI resources on Ethiopia's health system, and less on processes specific to the GF. Finally, the 2009 research gathers more qualitative information from stakeholders at the *woreda* (district) level to better represent their perspective on system-wide effects. Given that the scale-up of GHI-supported services at the primary health level had just begun by the time of the 2006 follow-up survey, the data from 2009 provide an opportunity to assess the effects of the increased availability of GHI-supported services between 2006 and 2009.

The specific objectives of this phase of research are to evaluate the effects of GHIs on Ethiopia's overall health system based on quantitative and qualitative data from this and the two previous (2003/04, 2006) SWEF studies, and to make recommendations based on the collective findings. Taking into consideration the five broad national concerns described above as well as the type of data available from the two previous SWEF studies, the purpose of the study is to investigate the effects of GHI-supported initiatives for four thematic areas:

- **Policy and reporting processes.** Effects on alignment and harmonization of GHI policies with existing national policies, including decentralization and private sector involvement.

- **Human resources.** Effects on the design and implementation of a human resources for health (HRH) strategy, and on the number, work burden, time allocation, and motivation of health workers at the primary health care facility level.
- **Pharmaceuticals and commodities.** Effects on procurement and distribution systems, and on the availability of pharmaceuticals at the primary health care facility level.
- **Service delivery.** Effects on the availability and utilization of focal and non-focal health care services at the primary health care level, including family planning (FP) and reproductive health (RH) services, and maternal and child health (MCH) services.

The study is descriptive in nature and uses a mixed-methods research methodology based on data collected at the three points in time – 2003/04, 2006, and 2009. For the empirical component of the study, survey data were collected from a panel of primary health care facilities in four regions of Ethiopia (Addis Ababa, Oromia, Amhara, and Somali), and then used to measure changes over time at the facility and health worker levels. In addition, the study uses information collected through in-depth interviews from a range of stakeholders such as government health staff at the central and local levels and GHI representatives, and a review of previous reports and documents. In accordance with the informed consent process used in the study, quotations are presented such that the identity of the respondent is protected.

I.2.2 PROPOSED APPLICATIONS FOR STUDY FINDINGS

It is hoped that study findings will be useful to readers at the local, national, and international levels, among them:

- **Ethiopia’s Federal Ministry of Health (FMOH)**, for its health systems strengthening (HSS) strategy and the development of the next HSDP;
- **PEPFAR, GF, and other funding agencies**, to help them improve planning and implementation processes and guidelines to ensure that disease-focused health initiatives enhance the broader health care system in Ethiopia, particularly in human resources, information systems, and non-focal health care services;
- **Stakeholders in Ethiopia** receiving grants and technical assistance, to inform policies and implementation strategies for GHI-supported activities;
- **The broader donor and global community**, to help them determine how best to channel efforts to scale up the assault upon HIV/AIDS, TB, malaria, and other diseases of poverty in low- and middle-income countries.

I.3 ORGANIZATION OF THE REPORT

The remainder of this report is organized as follows: Section 2 describes Ethiopian political, economic, and health policy contexts; Section 3 outlines the research design and methodology; Section 4 presents study findings on policy, budgeting, and reporting processes; Section 5 details the findings on human resources; Section 6 discusses findings on pharmaceuticals and commodities; Section 7 presents findings on service availability and use; and Section 8 presents the study’s conclusions and recommendations.

2. THE CONTEXT AND THE SCALE-UP OF FOCAL HEALTH SERVICES

This section provides a context for understanding the effect of GHIs on Ethiopia's health system. In addition to the country's demographic, administrative, and health contexts, the section briefly describes the scale-up of HIV/AIDS, TB, and malaria services, the role of GHIs in the scale-up, and the Ethiopian government's overall strategy to strengthen the health system.

2.1 AN OVERVIEW OF ETHIOPIA'S HEALTH SYSTEM

2.1.1 DEMOGRAPHIC AND ADMINISTRATIVE CONTEXTS

Ethiopia is an expansive country, both geographically and demographically, but its resources and infrastructure remain poorly developed. It has suffered from civil wars and repeated droughts and famines. With a per capita income of about US\$280 (World Bank 2010a), Ethiopia is among the world's least-developed countries.

Ethiopia's annual population growth is estimated at 2.7 percent and the population was estimated to be 82.8 million as of mid-2009, making it the second-largest population in sub-Saharan Africa after Nigeria (Population Reference Bureau, 2009). As Table 2.1 shows, the total fertility rate is 5.3 births per woman, identical to the sub-Saharan region overall, while infant mortality, at 76 per thousand, is slightly lower than the 80 per thousand experienced in the overall region, but considerably higher than the world average. Eighty-four percent of the population lives in rural areas.

TABLE 2.1. COMPARISON OF ETHIOPIAN DEMOGRAPHIC DATA WITH DATA OF THE WORLD AND SUB-SAHARAN AFRICAN COUNTRIES

	Population mid-2009 (millions)	Births per 1,000 population	Deaths per 1,000 population	Rate of natural increase (percent)	Infant mortality rate (per 1,000)	Total fertility rate	Percent of population of age		Life expectancy at birth (years)		
							<15	65+	Total	Male	Female
World	6,810	20	8	1.2	46	2.6	27	8	69	67	71
Ethiopia	83	39	12	2.7	76	5.3	43	3	53	51	54
Sub-Saharan Africa	836	39	13	2.5	80	5.3	43	3	51	50	53

Source: Population Reference Bureau (2009)

Ethiopia's administrative structure follows a federal model, with nine regional states and two city administrations. The highest governing body at the federal level is the Parliament. The regional states operate with regional councils. Zones, woredas, and *kebeles* (the smallest administrative unit) constitute the lower levels of the administrative hierarchy.

2.1.2 HEALTH AND HEALTH SERVICES COVERAGE INDICATORS

Ethiopia's average per capita expenditure on health increased from US\$7.14 in 2004/05 to US\$16.09 in 2007/08 (FMOH 2010), well above the minimum (US\$12 per person) recommended by the World Bank to maintain a basic package of health services. Nominally, national health expenditure increased from Birr 4.5 billion (US\$522 million) in 2004/05 to over Birr 11.1 billion (US\$1.2 billion) in 2007/08 (FMOH 2010). The total share of the government budget allocated to health was approximately 5 percent in 2007/08, a relatively low amount compared with the Abuja Declaration commitment of African countries to raise the share of health expenditure to 15 percent.

Gradual Improvement in Basic Services

A review of health and service coverage indicators suggests that, like demographic indicators, health outcomes for Ethiopia's population are similar to the average found in sub-Saharan Africa. That is, while coverage of basic services remains relatively poor, substantial progress has been made in recent years.

For example, life expectancy at birth has increased from 51.4 years in 2000 to 54.7 years in 2007, while the infant mortality rate has decreased from 91.4 per 1,000 in 2000 to 71.9 per thousand in 2007 (Box 2.1). With respect to service coverage, the proportion of deliveries attended by skilled health staff increased from 10 percent in 2002 to 16 percent in 2007, and the percentage of children with DPT3 vaccination increased from 42.0 percent in 2000 to 77.0 percent in 2007 (Box 2.2). Of course, these improvements are likely to be attributable to determinants both inside and outside the health system.

Box 2.1. Population Indicators (2005–07)

Life expectancy at birth	54.7
Infant mortality rate (per 1,000)	71.9
Total fertility rate	5.3
Maternal mortality rate (per 100,000 live births)	720

Source: Abt Associates, Health Systems 20/20 Health Systems Database (<http://healthsystems2020.healthsystemsdatabase.org/>)

Box 2.2. Health Service Indicators (2007)

DPT3 coverage (percent)	77.0
Measles coverage (percent)	68.0
Fully immunized children (percent)	56.0
Contraceptive acceptance (percent)	34.0
Contraceptive prevalence rate (percent)	10.3
ANC coverage (percent)	52.0
Trained delivery assistance	16.0

Source: FMOH (2007), Health Systems 20/20 Health Systems Database. <http://healthsystems2020.healthsystemsdatabase.org/>

2.2 THE SCALE-UP OF HIV/AIDS, TB, AND MALARIA SERVICES

The scale-up of services to fight the three focal diseases since the 2003/04 baseline study has produced considerable improvement in prevention and treatment services in Ethiopia. Funding has come primarily from international donors, with the government contributing roughly 20 percent or less to overall spending. While HIV/AIDS services have seen the greatest increases, and thus represent the greatest percentage of health sector spending overall, increased funding to fight TB and malaria, historically two of the most widespread diseases in the region, has contributed significantly to improved health coverage. Below is a brief description of progress in the response to these focal diseases since the baseline study.

2.2.1 HIV/AIDS RESPONSE

According to government reports, the adult HIV prevalence was estimated to be 2.1 percent in 2007/8. Of the 1.03 million people living with HIV (PLHIV), 289,000 were estimated to be in need of antiretroviral treatment (ART).

With technical and financial support from development partners, Ethiopia has developed and implemented the Multisectoral Plan of Action for Universal Access to HIV/AIDS Prevention, Treatment, Care, and Support for the period 2007 to 2010. According to government reports, since 2006 the number of facilities providing HIV/AIDS counseling and testing (HCT), prevention of mother-to-child transmission (PMTCT), and ART services has increased dramatically, along with the number of clients receiving these services. For example, the number of facilities providing HCT essentially doubled, from 801 in 2006 to about 1,600 in 2009. Even more striking, the number of clients receiving HCT services jumped from half a million in 2006 to nearly 6 million in 2009. PMTCT clients went from virtually nil to well over 6,000, while clients for ART increased more than fivefold, to over 152,000, during this time (Table 2.2).

TABLE 2.2. NUMBER OF FACILITIES PROVIDING AND NUMBER OF CLIENTS RECEIVING HCT, PMTCT, AND ART SERVICES, BY YEAR

Number of facilities	2006	2007	2008	2009
HCT	801	1,005	1,336	1,596
PMTCT	93	408	719	843
ART	168	271	353	511
Number of clients				
HCT	564,321	1,898,191	4,559,954	5,853,472
PMTCT	--	--	4,411	6,446
ART (currently on ART)	18,594	73,124	109,930	152,472

Source: FMOH 2009.

Majority of HIV/AIDS spending is donor financed

In 2007/08, total national HIV/AIDS expenditure amounted to US\$248 million. This was the largest amount of spending on any specific disease or condition in Ethiopia up to that time, accounting for more than 20 percent of total spending in the health sector (FMOH 2010a). HIV/AIDS is highly donor financed. In 2007/08, the vast majority of expenditures (84 percent) on HIV/AIDS originated from multilateral and bilateral donors and international nongovernmental organizations (NGOs), while the government contributed 11 percent.

GHI funds enable considerable scale-up of HIV/AIDS services

The availability of funds from the World Bank, GF, PEPFAR, and other donors has facilitated the scale-up of HIV/AIDS services. As of 2009, these three major GHIs had allocated significant monies to HIV/AIDS: World Bank MAP I and II about US\$89 million, GF about US\$1.3 billion, and PEPFAR about US\$1.5 billion.

Funding from the GF and PEPFAR initiated free ART services. Over 50 percent of PEPFAR funds goes to treatment services for HIV/AIDS. Twenty-five percent goes to prevention-related services, including HCT, PMTCT and medical transition, sexual transmission and use of condoms, and the ABC of prevention including prevention of sexually transmitted infection (STI) to some extent. The other 25 percent goes to care and support.

2.2.2 TB RESPONSE

As of 2005, Ethiopia ranked seventh on the list of the world's 22 high-burden countries for TB, but the government's recent annual health sector report reveals that TB indicators have gradually improved in recent years. Case detection was reported to be at 34 percent in 2009, a step up from 30 percent in 2006, but still well below the national target of 67.8 percent. However, the treatment success rate rose from 76 percent in 2006 to 84 percent in 2009, just below the international standard of 85 percent, and the TB cure rate rose from 62 percent in 2006 to 67 percent in 2009 (the cure rate does not have a target level).

Sources of funds for TB widespread

Some of this improvement may be attributed to increased funding for TB services. In 2007/08, a total of US\$47.8 million was spent on TB, about 4 percent of the national health expenditure. Most of these funds (63 percent) came from households in the form of out-of-pocket spending, while donors contributed 22 percent and the government contributed 14 percent of total TB spending. The GF is the major funding agent of TB activities, with US\$29.54 million committed and US\$20.5 million disbursed in 2009. In addition to the GF, other international partners provide technical and financial assistance for TB in Ethiopia, among them the World Health Organization (WHO), the U.S. government (United States Agency for International Development [USAID], Centers for Disease Control and Prevention [CDC]), the German Leprosy and TB Relief Foundation (GLRA), Royal Netherlands TB Foundation (KNCV), Tuberculosis Control Assistance Program (TB CAP), Italian Cooperation, Finnish International Development Cooperation, and others.

New initiatives seek to improve TB program management, drug availability

With the support of the GF, the U.S. government and other partners, Ethiopia's TB program is conducting the following initiatives:

- Strengthen program management, supervision, and capacity for conducting operational research in TB/HIV;
- Procure drugs, vehicles, and computers;
- Train health workers in providing community directly observed treatment, short-course (DOTS);
- Do timely detection and quality treatment of cases;
- Promote advocacy, communication, and social mobilization activities;
- Establish the operational structure for TB collaborative activities.

The TB program structure, once dormant, is now active and delivering services thanks to funding from the GF. As a result of GF-supported activities, drugs and commodities procured have begun to arrive, training programs have been initiated, and facility services have begun to scale up.

TB/HIV collaborative services expanding to all hospitals and health centers

The program in TB/HIV is expanding from nine hospitals to all hospitals and health centers, and has created supportive conditions for the improvement of TB case detection rates and TB patients' uptake of HIV prevention, care, and treatment services. Thus far, 667 health facilities offer the TB/HIV collaborative service. GF Round 6 funding enabled the following activities:

- Equipped 360 new health facilities and established six functional drug susceptibility testing facilities, raising the total to 832 health centers with laboratory equipment to provide quality-assured sputum smear microscopes;
- Implemented DOTS in 232 newly constructed health centers and 1,662 upgraded health posts, as well as strengthened DOTS in other facilities where it has already been introduced;
- Expanded the Public-Private Mix DOTS. Of 1,700 private health facilities (hospitals, higher, medium and lower, specialized clinics), 139 are providing TB DOTS as a result of the new partnership with the FMOH;
- Scaled up TB/HIV collaborative activities at the community level by training health extension workers (HEW), purchasing isoniazid, providing Isoniazid Preventive Therapy (IPT) for PLHIV without TB infection, providing co-trimoxazole to TB/HIV co-infected clients, purchasing HIV test kits and condoms, and enhancing monitoring and evaluation. HEW are now being involved in community conversation in TB prevention and management of TB patients.

2.2.3 MALARIA RESPONSE

Over two-thirds of Ethiopia's population lives in malaria-prone areas covering 75 percent of the country's land mass. The 2003/04 baseline study found that the country's reliance on chloroquine produced high treatment failure because the malaria parasites had developed resistance to the drug. At the time, the quality of diagnosis was judged to be very poor, with a case fatality of between 16 and 35 percent, low coverage of bed nets at about 1.5 percent, and insecticide treated nets (ITNs) at 0.5 percent.

Private, out-of-pocket expenditure accounts for nearly half of malaria expenditure

In 2007/08, over US\$55.5 million was spent on malaria in Ethiopia, 5 percent of that year's national health expenditure. Almost half of this spending came from the private sector, mostly from out-of-pocket expenditure, while the government and donors accounted for 29 percent and 25 percent, respectively. Among GHIs, the GF has been the leading source of funds to fight malaria. By 2009, the GF approved a total amount of US\$278 million and disbursed US\$132 million. Other sources of support include the UK's Department for International Development (DFID) and the President's Malaria Initiative (PMI), which is now focusing on the Oromia region.

Malaria response shows long-term improvement

According to the government, Ethiopia has made substantial progress in combating malaria. For example, as of 2009:

- In malarious areas, 66 percent of households were protected by at least one ITN;
- In malarious areas, ITN use by children under five years of age and pregnant women increased to nearly 42 percent and to over 60 percent, respectively, in those households that own at least one net;
- According to a recent survey, parasite prevalence was very low (0.7 percent in malarious areas) and similar across age groups.

Strategic Plan seeks prevention, earlier diagnosis

The National Five-Year Strategic Plan for Malaria Prevention and Control, developed in the context of the HSDP III, has a number of targets for 2010:

- Early diagnosis of fever cases and treatment of malaria cases (within 24 hours of illness onset);
- Selective vector control to protect communities through provision of an average of two ITNs per household in malarious areas;
- Increased coverage of ITNs in epidemic-prone areas;
- Epidemic prevention and control.

The next section describes the government's long-term strategies to incorporate treatment of these three diseases into its overall strategy for strengthening the health care system.

2.3 DESCRIPTION OF SELECTED GHIS IN ETHIOPIA

Over the past ten years, the scale-up of HIV/AIDS, TB, and malaria services has been supported by three primary GHIs: the GF, the World Bank MAP, and PEPFAR. In order to understand why these programs have the potential to have broad health system-wide effects, it is important to have an overview of objectives and scale of the programs.

2.3.1 GLOBAL FUND

The Global Fund is a major financier of activities to fight HIV/AIDS, TB, and malaria. The GF has supported ten rounds of funding in Ethiopia with approved funding of US\$1.3 billion. According to the 2006 SWEF study, funding from the GF to support activities in HIV/AIDS, TB, and malaria was aligned with the government's HSDP and the national strategic plan of poverty reduction (Banteyerga et al. 2006). To date, US\$565 million for HIV/AIDS, US\$278 million for malaria, and US\$47.5 million for TB has been disbursed.

The primary GF mechanism in Ethiopia is the Country Coordinating Mechanism (CCM), a country-level partnership that develops and submits grant proposals to the GF and monitors implementation, if proposals are funded. The principal recipients are local entities nominated by the CCM and confirmed by the GF as legally responsible for program results, monitoring and evaluation, and financial accountability in a recipient country. In Ethiopia, the principal recipients have been the Ethiopian Inter-Faith Forum for Development, Dialogue and Action (EIFDDA), HIV/AIDS Prevention and Control Office (HAPCO), Ministry of Health (MOH), and Networks of HIV Positives in Ethiopia (NEP+).

2.3.2 PEPFAR

As one of the 15 PEPFAR focus countries, Ethiopia has received substantial funding from the U.S. government for HIV/AIDS prevention, medical treatment including ART, and care and support. PEPFAR funds are not directly channeled to Ethiopian government ministries and agencies but are disbursed through U.S. government agencies, including the Department of Defense, CDC, and USAID. USAID and CDC, the two primary recipients of funding, with over 64 Prime Partners, are implementing activities that cover all nine regions and the two chartered cities.

PEPFAR is a major donor of HSS activities in Ethiopia. PEPFAR/Ethiopia's reauthorization calls for "3-12-12" targets for Treatment, Prevention, and Care with treatment for at least 3 million people; 12 million new infections averted; 80 percent coverage of HCT among pregnant women; 80 percent coverage of antiretroviral (ARV) prophylaxis for HIV-positive pregnant women; care for 12 million people, including 5 million orphans and vulnerable children; and professional training for 140,000 new health care workers (Campbell and Settle 2009). In accordance with a Memorandum of Understanding, PEPFAR Ethiopia provides second-line adult, first- and second-line pediatric, and a reserve stock of first-line adult ARVs.

PEPFAR Ethiopia has given heavy emphasis on in-service training over the last five years, with available data showing 113,881 trainings. The greatest emphasis of PEPFAR's reauthorization is on training, though the emphasis has shifted from in-service to pre-service training (Campbell and Settle 2009).

2.3.3 WORLD BANK MAP

The World Bank's MAP, a major source of support in the fight against HIV/AIDS, has been operating for more than six years under HAPCO management. It was the first major external fund committed to the fight against HIV/AIDS and, despite its slow implementation, made a major impact on prevention and care and support activities, thereby helping combat stigma and discrimination. Phase I of MAP officially concluded at the end of 2006 and disbursed over US\$60 million for HIV/AIDS prevention, care, and support activities, and medical equipment and supplies. Phase II of MAP began operation in Ethiopia in early 2007 with an approved grant of US\$30 million. The program focuses on prevention and care with particular attention to at-risk groups in hot spots in rural and peri-urban areas, such as market towns. The project aligns federal and regional institutional structures, emphasizing transparency and accountability among organizations that carry out specific projects under the grant. The program also aims to address capacity-building needs – not only gaps in skills but also shortcomings in institutions and systems. Phase II of the program also supports local community- and woreda-based initiatives.

TABLE 2.3 GHI INVESTMENTS IN ETHIOPIA (2003–10)

Global Fund, 2003-10		
Round and disease priority	Approved (in US\$)	Disbursed (in US\$)
Round 1, TB	26,980,649	26,980,649
Round 2, HIV/AIDS	435,001,702	435,001,702
Round 2, Malaria	73,875,211	73,875,211
Round 4, HIV/AIDS	401,905,883	377,068,575
Round 5, Malaria	140,687,413	132,290,767
Round 6, TB	29,539,816	20,552,375
Round 7, HIV/AIDS	64,955,789	58,303,992
Round 8, Malaria	133,089,526	72,178,615
TOTAL:	1,329,037,972	1,196,251,886 (890,635,271)

Source: <http://www.theglobalfund.org/en/>

PEPFAR, 2004-10	
Year	Approved (in US\$)
2004	48.0 million
2005	83.7 million
2006	123.0 million
2007	241.8 million
2008	354.5 million
2009	346 million
2010	328.18 million
TOTAL	1,525.18 million

Source: <http://www.pepfar.gov/>.

World Bank MAP	
Project	Amount disbursed (in US\$)
Multisectoral HIV/AIDS project	59.7 million (2008)
Second Multisectoral HIV/AIDS project	30.0 million
TOTAL:	89.7 million

Source: Gorgens-Albino et al. (2007)

2.4 ETHIOPIA'S LONG-TERM STRATEGY TO STRENGTHEN THE HEALTH SYSTEM

Ethiopia's HSDP (1997–2010), the government's main statement of health policy, emphasizes the importance of primary health care. Access, equity, and quality, with a focus on health promotion and prevention, as well as curative services, are some of the primary patient-centered goals. A primary administrative goal is to align, or harmonize, GHI-planned activities with existing national policies and programs, particularly in the decentralization and democratization of health services delivery.

Four-tiered primary health delivery system stresses prevention

Since the formation of the transitional government in 1991, the health sector has promoted disease prevention through the rapid expansion of health facilities devoted to primary health care. To ensure effective and efficient health delivery services, the health delivery system is currently based on four tiers:

- **The health post** is the primary unit for delivering services in prevention and health promotion, as well as the treatment of infectious diseases. With the help of HEW, each health post serves 5,000 persons.
- **The health center** comprises five satellite health posts. The health center is supposed to deliver both curative and preventive services to a population of 25,000.
- **District hospitals** focus more on curative than preventive services. They serve a population of 100,000.
- **Referral hospitals**, like district hospitals, provide higher-level curative services. Referral hospitals may serve up to a million persons. All levels are linked through a referral system, capacity-building activities and supervision.

Proposed three-tiered system aims to expand health care availability, efficiency

To expand geographic availability of health care services, primarily in rural areas, the government is in the process of reorganizing the current four-tier system into a three-tier system of primary health care units (PHCUs), with different structures for rural and urban, general hospitals, and specialized hospitals. Rural PHCUs will comprise health posts, health centers, and a primary hospital serving a maximum of 100,000 persons (FMOH 2010). Urban PHCUs will be exclusively health centers serving 40,000 persons. Generalized hospitals are expected to serve a population of 1-1.5 million. Specialized hospitals will serve between 3.5 and 5 million people.

“Three Ones” strategy of HSDP III further devolves health functions

To align health sector development with Ethiopia's overall decentralization policies, the FMOH's primary charge is “to focus on key priorities and reduce fragmentation of planning, implementation, financing, and monitoring and evaluation of activities implemented by various stakeholders in the health sector” (FMOH 2007). The FMOH issues policies, guidelines, standards, and procurement orders, oversees major trainings, and makes other high-level decisions, in keeping with the target strategies of the HSDP III (2005/06 to 2009/10).

The policy of decentralization has improved governance and enhanced participation and empowerment of regions, woredas, kebeles, and nongovernmental stakeholders. The FMOH, in close consultation with partners, developed a HSDP II Harmonization Manual (FMOH 2007b) and a Code of Conduct to

Promote Harmonization in the Health Sector in Ethiopia (FMOH and Development Partners 2005), and it signed the International Health Partnership (IHP) compact with key health sector partners (FMOH 2008a) under the HDSP III.

Since its inception, the HSDP has devolved primary responsibility for service delivery and management to regional health bureaus. Under the HSDP III, a “Three Ones” approach – “one plan, one budget, one report” – will further devolve such functions to the woreda as the basic unit of planning and administration. This strategy combines top-down and bottom-up planning in health, and aims to streamline health services funding and delivery.

Key cross-cutting principles of the HSDP III emphasize administrative alignment:

- Strengthen democratization and decentralization of the health system;
- Strengthen government, donor, NGO, and private sector collaboration;
- Harmonize the planning, implementation, and monitoring and evaluation systems;
- Enhance the effectiveness and linkage of implementation, monitoring, and evaluation.

2.5 HSDP III INITIATIVES TO IMPROVE OVERALL HEALTH SYSTEM

For the HSDP III, the major aims are “improving maternal health, reducing child mortality, and combating HIV/AIDS, malaria, TB, and other diseases with the ultimate aim of improving the health status of the Ethiopian peoples and achieving the Millennium Development Goals” (FMOH 2005). HSDP III initiatives call for increasing the availability and quality of health care services through programs such as the Health Extension Program (HEP), and the abovementioned IHP+ Compact, Code of Conduct, and HSDP Harmonization Manual (these initiatives are described in Section 4).

These initiatives will focus on strengthening human resources, increasing the availability and use of health information, and mobilizing and improving the efficiency of health financing. Toward these ends, the FMOH has employed a Business Process Reengineering (BPR) model to guide the administration of the HSDP III.

2.5.1 BPR RETOOLS ADMINISTRATIVE PROCESSES

The FMOH is the first ministry in Ethiopia to apply the BPR model in the redesign of existing health systems and development of new ones. The BPR aims to make the health systems efficient, effective, and responsive in the use of resources and the delivery of health services. Eight core principles underlie the BPR initiative. These are:

- Health Care Delivery
- Public Health Emergency Management
- Research and Technology Transfer
- Pharmaceutical Supply
- Resource Mobilization and Health Insurance
- Health and Health-Related Services and Product Regulation

- Health Infrastructure, Expansion, and Rehabilitation
- Policy, Planning, Monitoring, and Evaluation

The following are the five support processes in the BPR:

- Human Resources Development/Management
- Procurement, Finance, and General Service
- Program-Based Audit
- Public Relations
- Legal Services

The FMOH has set up a new Directorate of Health Sector Reform to follow up and monitor implementation of the BPR. BPR implementation comprises process-based deployment of the health workforce, training on government policies and strategies for all health and non-health workers, process-based training, and advocacy work for development partners with regard to new BPR design, process-based office layout, and establishment of a Director's Council and development of a BPR implementation strategy (FMOH 2008b).

2.5.2 HEALTH EXTENSION PROGRAM IS FIRST LINE OF PRIMARY HEALTH CARE DELIVERY

The HEP is the first line of primary health care delivery service. According to the FMOH (2005/06-2009/10), one of the HEP's central goals is to fight communicable diseases through prevention strategies such as improving personal hygiene, managing liquid and solid wastes, encouraging appropriate nutritional practices, vaccinating mothers and their babies, and discouraging harmful traditional and cultural practices. Since 2003, the HEP has deployed over 30,000 HEW to deliver preventive and promotion services in 15,000 health posts, each serving 5,000 residents.

HEW stress prevention, hygiene, education

HEW are trained in 16 packages of health services, grouped under four themes:

- i. **Prevention** of diseases, especially HIV/AIDS, TB, malaria, and diarrheal diseases; prevention of water-borne diseases through drinking safe and clean water
- ii. **Family health**, including FP/RH, MCH, immunization, de-worming, nutrition, and hygienic care;
- iii. **Environmental health** and sanitation, such as use of pit latrines and the separation of kitchen, bedrooms, and animal sheds; and
- iv. **Health education.**

Improved maternal and infant health are major goals

Through the HEP, the FMOH has also strengthened the pathways toward maternal, child, and infant health, including the scaling up of family planning services and mobilization of the community to use health facilities for ante- and postnatal care, including facility-based delivery. HEW promote vaccination, access to ante- and postnatal care services, nutrition, breast feeding, and hygienic care of mothers and

children. In collaboration with members of the kebele councils, HEW also conduct a baseline survey and draft an action plan that is submitted to the woreda council for approval. Approved action plans are disseminated to the woreda health office, regional council, and regional health bureau.

2.5.3 IMPROVING HUMAN RESOURCES

Another major set of HSS activities are geared toward improving human resources, which includes training, deployment, and retention of health personnel. Major initiatives include the training of HEW and health officers and increasing the number of trained midwives. Other initiatives include expansion of the training system for middle-level health professionals, such as nurses and laboratory technicians, by licensing private schools. Expanded training of doctors is planned, along with the training of technicians and experts in the HMIS and hospital management.

2.5.4 REDESIGNING HEALTH INFORMATION SYSTEMS

As part of the BPR Initiative, the FMOH has restructured the design of the HMIS. The government is in the process of piloting the restructured HMIS, and is building capacity at the facility, woreda, region, and central levels.

2.5.5 STREAMLINING LOGISTICS AND SUPPLY DISTRIBUTION

To streamline the logistics and supply services, the FMOH is restructuring its Pharmaceuticals Administration Supply Services. It is creating the Pharmaceuticals Fund and Supply Agency, an autonomous agency for the purchase and distribution of drugs, and has charged the Ethiopian Health and Nutrition Research Institute with building up laboratory capacity and services at the federal, regional, and facility levels.

2.5.6 MOBILIZING AND STREAMLINING HEALTH FINANCING

Ethiopia's health sector has multiple funding sources including the government treasury, bilateral and multilateral donors, household out-pocket expenditures, international and local NGOs, private and parastatal employers, and insurance enterprises (FMOH 2010). Most recently, the government has looked to budget integration and health insurance reform to improve health financing.

Increase emphasis on integrating aid into government budgets. By encouraging donors that use off-budget support to the health sector to allocate more funds on-budget, the FMOH hopes to harmonize health financing (further discussion in Section 4).

Generate additional sources of revenue and increase service utilization through health insurance reform. Ideally, these reforms will enable social and community insurance, revise use fees charged at government health facilities, retain collected fees at the facility, apply revenue to improve quality, simplify rules for fee waivers, increase hospital managerial autonomy, open private wings in public hospitals, and outsource non-clinical health services (FMOH 2010).

3. RESEARCH DESIGN AND METHODS

The study is a mixed-methods evaluation of the system-wide effects of GHIs on Ethiopian health care, particularly in the areas of HIV/AIDS, TB, and malaria epidemics. It is based on baseline and follow-up data collected at three points in time: 2003/04, 2006, and 2009.

3.1 STUDY DESIGN

In addition to a document review, each phase includes two primary forms of data: (1) a quantitative facility survey with both facility- and health worker-level components, and (2) in-depth interviews with key informants, who consist of MOH staff at the central-, regional-, and woreda-levels, private sector officials, and representatives of GHIs. The baseline survey was conducted between November 2003 and January 2004; the first follow-up survey was conducted between May 1 and July 1, 2006; and the second follow-up survey, whose results we present here, was conducted between March 30 and July 17, 2009.

The baseline report (Banteyerga et al. 2005) provides a more extensive description of the overall research design and process, including early national consultative processes, but we provide a brief overview below.

3.2 SELECTION OF STUDY REGIONS AND FACILITIES

As part of the baseline study, a sampling approach was developed. Given Ethiopia's large size, the study's limited resources and budget necessitated the selection of only a few representative regions for evaluation. These are Addis Ababa City Administration, Oromia National Regional State, Amhara National Regional State, and Somali National Regional State.

3.2.1 SELECTION OF REGIONS

Addis Ababa, Oromia, and Amhara were selected because (1) they are large and densely populated; (2) they have large urban settlements with access to road transportation; (3) they had at the time of the baseline survey high prevalence rates of HIV/AIDS/STI, TB, and malaria; and (4) HCT, PMTCT, and ART activities were provided in these regions. Moreover, the three regions were expected to be the site of intensive PEPFAR activities in the coming years. Somali region was selected because (1) it is remote; (2) it has pastoral communities; and (3) it had a high malaria prevalence level at the time of the selection. It represents remote regions and pastoralist communities.

The baseline and the two follow-up studies were conducted in the same geographic areas, and at the same facilities.

3.2.2 SELECTION OF PRIMARY HEALTH CARE FACILITIES FOR THE FACILITY AND WORKER SURVEYS

In designing the baseline study, the research team assessed the focus of GF-supported activities and discovered that nearly all activities supported in the first three GF grants focused on primary health care. Therefore, in line with these parameters, the team agreed at baseline that hospitals would not be included in the survey sample but that all types of primary health care units (health posts, health stations/clinics, and health centers; public, private for-profit, and NGO entities) would be included.

Purposive sampling includes urban and rural facilities

The number of health facilities selected from each region is approximately proportional to the total number of health facilities within that region, by type of facility. Selection of sample facilities within the regions was purposeful (convenience sampling) rather than random, reflecting the study’s limited resources. The research team traveled first to the regional health offices to conduct interviews with regional health staff. At that point, the research team consulted with local informants to ascertain which facilities in the regions were considered urban, and which were considered rural. The research team purposively selected the required number of urban and rural facilities so as to minimize travel time while ensuring adequate representation of rural and urban areas. Out of the 60 primary care facilities surveyed in the four regions, 21 are government health centers, 24 are government clinics and health posts, and the remaining are private health facilities. Table 3.1 provides breakdown of the sample facilities included in the study by type of operating authority and region. Each of the selected facilities was in operation over the entire course of the study.

TABLE 3.1. SAMPLE HEALTH FACILITIES BY REGION AND OPERATING AUTHORITY

Type of health facility	Region				
	Addis Ababa	Oromia	Amhara	Somali	Total
Govt. health center	3	9	7	2	21
Govt. health posts and clinics	3	10	9	2	24
Private health facilities	4	5	4	2	15
Total	10	24	20	6	60

57 of 60 facilities surveyed in all three rounds

Researchers visited 57 of the 60 health facilities for all three rounds of data collection. This included 43 government facilities and 14 private health facilities.

The research team agreed that all health providers present at a selected facility at the time of the facility survey would participate in the provider survey. The research team did not attempt later to interview those who were not present at the time of the survey. In addition, because of worker turnover and anonymity requirements, no attempt was made to track which health providers participated in the surveys over more than one round. Because researchers agreed simply to interview whatever workers were at the facility at the time, the numbers of workers fluctuate over each round of the study. Thus, Table 3.2 provides the numbers of health workers interviewed in each round of data collection by type of provider, facility, and operating authority – not the total number of workers in each facility. Notice from the tables that qualified nurses and health assistants represent the bulk of workers at both

government and private facilities and that government facilities tend to have a larger staff than private facilities – except that private facilities have more doctors.

TABLE 3.2 TYPE OF HEALTH PROVIDERS INTERVIEWED IN THE THREE ROUNDS BY OPERATING AUTHORITY

Type of health provider	Round 1 (2003/4)		Round 2 (2006)		Round 3 (2009)	
	Government	Private	Government	Private	Government	Private
Physician	8	14	8	18	2	12
Health officers	4	0	4	0	30	0
Qualified nurses	69	21	80	16	143	36
Qualified midwives	17	2	14	2	13	2
Junior nurses	18	6	17	3	16	0
Trained birth attendants	1	2	1	0	5	2
Counselors	1	4	1	1	8	2
Laboratory technicians	37	17	41	27	35	25
Pharmacists	12	7	10	3	16	2
Health assistants	58	11	33	10	4	1
Other	9	9	37	6	30	5
HEW	-	-	-	-	10	-
Total	234	93	246	86	312	87

3.3 DATA COLLECTION AND ANALYSIS

As in the first two rounds, data collection in 2009 involved both quantitative and qualitative components, though this final round places greater emphasis than the previous SWEF studies on the quantitative responses.

3.3.1 QUANTITATIVE DATA: FACILITY AND PROVIDER SURVEYS

As in the 2003/04 baseline and 2006 surveys, the 2009 quantitative survey involves two components: (1) a facility survey to track the services and equipment available at the facility, and (2) a survey of providers working in the selected facilities. The quantitative data are drawn from the 60 facilities surveyed and from 339 providers interviewed beyond those who provided information on the facilities. The instruments were adapted slightly on the basis of the baseline results.

The facility survey focused on issues related to resources, staff, management, patient referrals, laboratory services, and a wide variety of preventive, testing, and curative care services. The provider survey included questions on in-service training, type of position, experience, supervision, workload, and motivation and job satisfaction.

A number of indices were created to summarize the results of key questions under a common component in the health facility and health provider questionnaires. Examples of common components include the availability of essential drugs and supplies, the provision of lab tests, and health worker motivation, all of which can be used to make comparisons across types of health facilities as well as across time. Below are descriptions of the indices used in the analysis.

Facility-level indices of infrastructure, drugs and supplies, lab tests, and equipment

From the health facility data set, indices on the availability and functionality of essential equipment, health facility infrastructure, the availability of essential drugs and supplies, and the availability of various lab services were created. Two types of results are presented in the tables: first, a percent distribution of facilities by whether the facility was classified as having less than 30 percent, 30-70 percent, or 71-100 percent of the maximum value; and second, the average level of the index.

Infrastructure. This index looks at whether the health facility has four basic resources available on the premises. The infrastructure index was developed by aggregating dichotomous (0/1) measures of whether the facility was reported to have electricity, a regular water source, a toilet in working condition for their clients, and a working phone or short wave radio, and then converted into a percentage score.

Availability of common essential drugs and supplies. This index summarizes the number of essential drugs and supplies reported to be continuously available in the six months prior to the survey and observed in the facility at the time of the survey. The index was created by aggregating dichotomous measures of the availability of each of 19 drugs and supplies and then converted into a percentage score.

Available lab tests. This index was created by aggregating the number of basic laboratory tests reportedly available in the health care facility (maximum=16, each measured through a dichotomous variable (0/1)), and then converting into a percentile score.

Availability of outpatient equipment for MCH services. This index records the number of types of outpatient equipment available, such as an infant scale, a child scale, a thermometer, table and a stool for gynecological exams, a blood pressure gauge, a stethoscope etc. to conduct OPT services for MCH through a binary (0/1) variable, and then converts that number into a percentile score.

Worker-level indices for health worker satisfaction and motivation

To investigate what motivates health workers, respondents were asked to respond to a number of statements classified on a Likert scale of 1-5, with 1 signifying strong disagreement with the statement and 5 representing strong agreement with the statement. The statements were shaped around five different components of health worker motivation: the amount of pride they take in their work, their satisfaction with the financial compensation they receive, their perceived self-efficacy in being able to do their job, the availability of resources to assist them with performing their job adequately, and their self-perceived conscientiousness.

Each of the indices was created as follows. First, statement-specific variables were created, which take on the value of 1.0 if the worker strongly agrees with the statement, 0.5 if the worker agrees with the statement, and 0.0 if the worker either has no opinion, disagrees or strongly disagrees. The statement-specific indicators were aggregated to obtain a raw score. Finally, the raw score was converted into a percentile score. Two types of analyses are presented in Section 5, which presents the results on human resources: first, a percent distribution of health workers by whether the health worker was classified as having a motivation score of less than 30 percent, 30-70 percent, or 71-100 percent of the maximum value of the index; and second, the average level of the index.

Pride. This motivation index measures the intensity of the health worker's pride in working at the health care facility. It is based on whether the worker strongly agrees or agrees with the following statements: the facility has a good reputation in the community; it was a source of pride to get a job at

this facility; the majority of the workers in this facility are proud to work here; and the workers pride themselves on providing good services to the patients.

Satisfaction with financial rewards. This motivation index summarizes the health worker's satisfaction with his or her financial remuneration. It is based on whether the worker strongly agrees or agrees with statements on whether the effort the workers put in at the facility is reflected in their pay; whether the job pays adequately compared to other jobs; whether the income was a fair reflection of the person's skill, knowledge, and training; and whether the wage covers their basic needs and is enough to support their family.

Perceived self-efficacy. This motivation index summarizes health workers' level of agreement with statements on their confidence to handle the work and to cope with any new challenges that occurred in their work life; their confidence that things were going the way they wanted them to; that they had control over things concerning their work; and that they had received sufficient training to perform well.

Resource availability. This index summarizes health worker responses on statements regarding the resources available at their health facility. They were asked to respond to statements regarding whether the lack of equipment and supplies prevented them from doing their job well; whether they had the necessary supplies, equipment, and resources to do a good job; whether the health facility provided everything they needed to do their job well; and whether the lack of supplies hindered their work quality.

Self-perceived conscientiousness. This index measures health workers' level of agreement with statements concerning their own reliability. Statements in this category concerned the ability of the health worker to be reliable and dependable at work; to work consistently at high quality; to be a hard worker; to be punctual about coming to work; to spend time on work-related activities; and to be rarely absent from work.

Allowances for changes or upgrades in facilities over time

As mentioned above, changes in the indicators of interest are measured across the three rounds using the panel of primary health care facilities. The types of facilities included in the baseline study include three types of government-run facilities (health posts, health clinics, and health centers) and non-government facilities. Among government-run facilities, some health posts and health clinics were upgraded between rounds of data collection as part of the government's strategy to scale-up the availability of health care services. To analyze changes over time, researchers created a variable for each round that indicates whether the facility was either (1) a health post or health clinic in the 2003/04 survey or (2) a health center in the 2003/04 survey. This ensures that our analysis of changes for specific types of facilities is in fact comparing the same facilities over time, even though some health posts and health clinics were upgraded after 2003/04.

Data were entered into SPSS (Statistical Package for Social Science) and then analyzed using STATA. Simple descriptive statistics were analyzed for comparison and trend analysis against selected indicators of facility management, drug and commodity resources, human resources, and service delivery. For indicators that are service-specific, such as the availability of equipment and supplies and the facility level and time allocation and in-service at the health worker level training, we compared changes for focal services (services to combat HIV/AIDS, TB and malaria) vs. those for selected non-focal services (FP, MCH care) in order to investigate the effects of GHIs on the two types of services. We also disaggregated the analysis by public/private status and by type of facility (i.e., health center, health clinic, and health post). In order to save space, we only present tables for public health care facilities, but refer to the analysis of private health care facilities in the text. In addition, because a sizeable number of health

personnel were interviewed in the health facilities, Chi Square and t-tests were conducted for the health worker tables to investigate whether changes over time were statistically significant.

3.3.2 QUALITATIVE DATA: IN-DEPTH INTERVIEWS

The research team prepared a list of key informants, and then developed interview guides to reflect the knowledge and experience of various subgroups of key informants. Throughout all three rounds of the study, the research design called for interviewing informants occupying specific positions at public, private, and donor organizations. In many instances, the persons occupying specific positions changed across rounds.

Key informants from public, private, and donor/development organizations

Table 3.3 provides the breakdown of key informants interviewed for the 2009, second follow-up study. In this 2009 round, interviews were conducted with 60 key informants, including CCM members, CCM Secretariat staff, MOH and HAPCO staff (including heads of departments and other health experts at the central levels, health officials at regional health bureaus and woreda health offices, and regional HAPCO offices), representatives of the nonprofit (NGO, civil society, and other) and for-profit segments of the private sector, and donor representatives. As can be seen in the table, the majority of informants come from the public sector, because GHIs use the public system. In the 2009 round only, district officers were included in an attempt to better understand challenges faced at the district level. The research team also consulted available documents on the GF, CCM minutes and guidelines, reports, and policy and program documents to obtain documented data from secondary sources.

TABLE 3.3: KEY INFORMANTS INTERVIEWED IN 2009, BY OPERATING AUTHORITY AND LEVEL

Level	Public sector	Donors/development partners	Private	Total
Federal	6	9	7	22
Regional	24	4	-	28
District	10	-	-	10
Total	40	13	7	60

Data obtained from key informants and secondary sources have been thematically analyzed to assess the effects of the GHIs on policy processes, planning and program implementation, service delivery, human resources, health information, drugs and medical technologies availability, and supply systems. The analysis attempts to explain the level of adaptability and flexibility of the planning and program implementation process and how this has influenced the health sector to absorb donor funds. The Three Ones campaign – one plan, one budget, and one report – is discussed in relation to alignment and harmonization.

3.4 LIMITATIONS OF THE STUDY

The study suffers from a few limitations:

- **Sampling.** The study builds on the sampling frame used in the 2003/04 and 2006 SWEF studies in Ethiopia. The survey of health care facilities used for all three rounds of the study was based on a convenience sample in four regions. Because the empirical data were collected through convenience sampling, the results of the study are not generalizable to the regional or national level, and are likely to be biased toward areas with better than average accessibility to health care services

- **Attribution.** The overall study design is not appropriate for empirically assessing causation between the scale-up and the health systems indicators of interest. In other words, the study cannot be used to rigorously attribute changes in selected indicators to the scale-up.
- **Indicators to be tracked over time.** For the longitudinal component of the study, changes can be measured only for indicators included in all three rounds of the study. For the availability of non-focal health services, these indicators include child health care services, FP services, and maternal health care services.

Given these limitations, the study should be viewed as descriptive in nature, rather than a causal analysis that controls for other important determinants of change.

4. FINDINGS: HARMONIZATION OF POLICY, BUDGETING, AND REPORTING PROCESSES

This section explores the extent to which the development and implementation of GHIs have been aligned and harmonized with the government's health sector policies, plans, reporting systems, and budgets. Because the study was originally designed to assess only the system-wide effects of the Global Fund, analysis in the baseline and first follow-up studies focused almost exclusively on that GHI. This final phase also looks at GF-supported processes and activities, but in addition explores the extent to which the activities supported by other GHIs, such as PEPFAR and MAP, have been aligned with government processes as of 2009.

The section first presents an overview of the government's policy for aid implementation, along with international partners' goals to support those policies. Next is a discussion of results, in particular broad areas of policy implementation, moving from administrative decentralization to progress toward increasing human resources, and streamlining supply distribution. The section then presents findings on health information and reporting systems, and finally on the construction of budgets and use of funds. Each section is accompanied by first-person observations on harmonization efforts from key informants in the health sector, including representatives at the federal-, regional-, and woreda-levels.

4.1 HARMONIZATION REMAINS A TOP PRIORITY AMONG ALL GHIS

Since 2006, the government with support from international organizations and donors has continued to prioritize harmonization, alignment, and coordination as strategic health system issues. As aid effectiveness became increasingly important at the global level, the FMOH became a leading advocate of health system reforms in this area. Major policy initiatives to improve aid effectiveness in Ethiopia include the drafting of national policies for governance and aid effectiveness and the signing of an international compact to define a more effective framework for achieving public health goals.

4.1.1 NATIONAL CODE OF CONDUCT AND HSDP MANUAL LAY OUT THE THREE ONES APPROACH

First, the government articulated its policy regarding governance and aid effectiveness through the Code of Conduct to Promote Harmonization in the Health Sector in Ethiopia (FMOH and Development Partners 2005), and then the HSDP Harmonization Manual (FMOH 2007). The manual sets out a basic set of planning and implementation procedures, activities, and governing bodies to guide behavior of all development partners in the health sector. It defines the concept of "one plan, one budget, and one report," and specifies the proper role of development partners, as well as the various levels of government (central, regional, and woreda), the private sector, NGOs, and the community in health sector participation and decision making. This decentralized system devolves power from the federal to the regional and woreda levels, thus taking into account varying local needs and priorities. By providing a

joint decision-making framework, the manual defines how the health sector activities under the HSDP should be governed.

4.1.2 IHP+ HIGHLIGHT MDGS

The 2006 SWEF study, drawing on information from the 2003/04 baseline survey and the 2006 follow-up survey, found that GF-supported activities were generally aligned with Ethiopia's national priorities and plans. Not only did the GF's focus on HIV/AIDS, TB, and malaria, the leading causes of mortality and morbidity in Ethiopia, dovetail with the HSDP's and the Sustainable Development and Poverty Reduction Strategy's areas of emphasis, but as of 2006, GF planning was better aligned with Ethiopia's policy of decentralization and power devolution than at the time of the baseline survey.

However, the 2006 study also found that the GF and other GHIs had not yet integrated and harmonized their programs fully in terms of reporting, monitoring and evaluation, and fund use. GHI-supported activities were reported to be sometimes poorly coordinated, and GHI requirements for separate reports – physical, programmatic, and financial – apart from health offices and health facilities reports produced a high burden of work for health facilities already suffering from a shortage of skilled personnel. At the time of the 2006 study, the government was aware of the challenges related to GHI-supported programs and was encouraging donors to harmonize their resources and work within the Three Ones: one national plan, one accounting system, and one reporting system. In fact, a Memorandum of Understanding between the GF and PEPFAR was signed in 2006 to better coordinate activities and resources related to HIV/AIDS.

To further this push toward harmonization, the IHP+ Compact was signed in August 2008. The compact sets out a framework for increased and more effective aid to accelerate Ethiopia's progress toward the health MDGs. Signed by the World Bank, the governments of the United Kingdom, Spain, and Ireland, UN organizations (WHO, UNFPA, UNICEF, UNAIDS), and others, the IHP+ initiative aims to achieve alignment and harmonization through a number of mechanisms, including (1) country ownership and accountability, (2) use of country systems, (3) pooling of funds in one budget, (4) use of common indicators and one report, (5) working for results, and (6) open and transparent governance. Because the GF uses the government system, the FMOH decides on what to do with the funds to fight the focal diseases and support HSS.

The Global Fund stresses alignment with national priorities and plans

To govern the design and selection of projects for funding, the GF has developed structures and processes to stimulate innovative approaches to program design and implementation (partly by engaging nontraditional policy actors in the process) and to expedite the transfer of fiscal resources. In this way, the GF promotes country ownership of GF-supported programs, an approach that, according to one key informant, works well.

The GF is the blood supply of the health plan. Without GF the plan could not be implemented; GF uses the government system and we can use it to fill in gaps and implement activities in HIV/AIDS, TB and malaria.

[Regional Health Bureau informant]

Despite some difficulty with harmonization in the earlier phases of GHI scale-up, the 2009 surveys tend to reveal increasing GF alignment with the Three Ones agenda. Other GHI partners are following this agenda as well.

Consultation among GHI partners and FMOH streamlines HIV/AIDS response

With respect to activities to fight HIV/AIDS, TB, and malaria, a number of initiatives have been introduced since 2006 to improve harmonization and coordination. PEPFAR, the national HAPCO, and the FMOH agreed to engage in weekly consultative meetings to review their activities in the context of harmonization, alignment, and HSS; respondents in 2009 reported that these meetings have been extremely useful. The government also developed a multi-sectoral plan of action for universal access to HIV prevention, treatment, care, and support in Ethiopia for the years 2007-10. PEPFAR was part of the process and is implementing activities in HIV/AIDS prioritized in the action plan: prevention, treatment, care, and support. All donors supporting HIV/AIDS implement activities that are identified in the action plan. The plan dictates that every dollar is spent according in the implementation of the prioritized and costed activities.

Respondents see harmonization helping to improve overall aid effectiveness

Respondents interviewed in 2009 indicated that the influx of resources from GHIs in recent years has helped improve aid effectiveness in Ethiopia. One respondent mentioned that PEPFAR's financial support in fighting the focal diseases played a large role in strengthening the government's ability to improve coordination across policies and priorities, from facility renovations to logistics and supply chains.

PEPFAR, in addition to giving technical support, has allocated over US\$50 million so far to facility renovation and construction. It also directly allocates on a yearly basis US\$2 million for renovation. Logistics and supply system is being strengthened with PEPFAR assistance. Last year, US\$56 million and this year 35 million were allocated to strengthen the logistics and supply-chain system. This includes the purchase of tracks. 25 tracks have been purchased to transport drugs and supplies from the center to the region. Over US\$5.3 million has been invested in warehouses. PEPFAR is assisting in making the logistic system computerized and make the logistic information system effective. FMOH staffs are being trained with the support of PEPFAR funds.

[Key informant, development partner]

Indeed, respondents seemed to agree that GHI-supported activities overall are well aligned with the government's health system, solidifying policies and priorities at both the national and local levels. One regional representative noted that GHIs have supported a wide range of infrastructure, strategic development, and HSS activities.

The government regional health plan cannot be implemented without GF and other donor funding. The health system strengthening activities in delivery of services, human resources, HMIS, pharmaceuticals are dependent on GF and other donor funding and technical support from development partners.

[Regional Health Bureau informant]

These activities can improve not only the availability and quality of services to fight the focal diseases targeted by GHIs, but other priority services as well.

Opinions vary on success of harmonization efforts: National outlook sunnier than local

Respondents exhibited a range of views on how well GHI-supported activities are harmonized, though informants at the national level tended to see greater alignment and coordination than those at regional or woreda levels.

For example, a policy informant at the central level observed that agreement among GHIs to stick to a single plan has improved HIV response:

Harmonization and coordination of GF, MAP, and PEPFAR is progressing well. You see, we prepared the multi-sectoral plan of action for universal access to HIV prevention, treatment, care and support in Ethiopia...Therefore, donors take activities set in the plan and implement. There is nothing a development partner could do outside this plan.
[Federal HAPCO, policy informant]

Another federal respondent also saw the one-plan policy as a positive influence on coordinating services.

In the health sector, the partners work from one plan and they share their responsibilities for implementing activities. Therefore there is harmonization and alignment of program activities. This helps in the effective use of resources. Of course we appreciate if all funds coming to Ethiopia would be on budget. If we can flexibly use funds off the budget through harmonization and alignment, it is ok with us. What development partners need is openness, accountability and results. I think this is being done to their satisfaction. This is the reason why support from development partners is it bilateral or multilateral is increasing.
[Federal HAPCO, policy informant]

Though echoing the budget concerns of some other informants, this quotation also falls in line with the general optimism regarding open communication and efficient use of resources at the national level. A representative from one regional health bureau even claimed “There is no duplication in program and use of resources.”

4.2 DECENTRALIZATION OF HEALTH ADMINISTRATION REMAINS A PRIMARY GOAL

The nation’s health policy, as articulated in the HSDP III, follows Ethiopia’s decentralized system of administration. Since 2006, the government has continued its efforts to strengthen the role of the regional and woreda levels in the health system.

Considerable Global Fund progress toward decentralization since 2003/04 baseline study

One of the major shortcomings reported by informants in the baseline study was the centralized planning of the GF, which failed to follow the policy of decentralization. As a result, GF-supported activities were not always in line with the needs and priorities of regions and woredas. Still, in the follow-up survey in 2006, informants reported considerable improvement. HAPCO was allocating funds on the basis of plans submitted by the regions that specified prioritized activities to be implemented with GF monies. In addition to accelerating the implementation of GF-supported activities, the approach also allowed the regions to use the funding flexibly within the agreed-on objectives in the GF grant. Some

issues related to communication between regional HAPCOs and regional health bureaus were, nevertheless, reported to be causing confusion in the implementation of HIV/AIDS activities.

Woreda Health Plan addresses local needs and priorities

In accordance with the approach of the HSDP Harmonization Manual (FMOH 2007) to improve aid effectiveness, the HSDP III has undergone significant modification to align health sector decision making with local priorities. The Woreda Health Plan, a major initiative starting in 2006, gives the woredas the leading role in health planning and implementation. According to one informant in health policy and planning,

The woreda planning aims at making harmonization and alignment become a reality. It speeds up the idea of one plan, budget, and report – the Three Ones... The national core plan and comprehensive plan is a sum of the woreda plans.

[FMOH, policy informant]

The FMOH, in collaboration with regions, woredas, and development partners, determines the core themes to be developed in the woreda core plan. Development partners and donor funds, mainly through the World Bank's Protection of Basic Services Project and the MDG Pooled Fund, contribute resources and technical assistance to the woredas in drafting and implementing the plan annually. Regions and woredas may modify, add, or reduce themes and indicators depending on local contexts, realities, and needs.

Regional, local harmonization remains a work in progress

Despite great strides toward woreda-level decentralization, however, a number of 2009 respondents commented that GHI support is often not well harmonized at the regional and woreda levels. Said one federal-level informant, "The core principles of country ownership, accountability, managing for results, monitoring and evaluation of outcomes and processes are reflected in the woreda planning and implementation procedures and processes." But that respondent also observed:

The major challenge is to build the planning, monitoring, and reporting capacity of the woredas. Currently, woredas have been given training by the FMOH. Experts from the center including development partners worked along woreda experts in the development of the woreda plan. The hope is that the woredas will soon develop the needed capacity in planning, monitoring and evaluation, and reporting.

[FMOH, policy informant]

Respondents still see duplication, poor coordination

Other respondents also reported that government capacity to coordinate activities at the woreda level remains weak and that there is sometimes duplication in GHI-supported activities. A regional informant explained:

Although many good works with regard to harmonization and alignment are done at federal level, when it comes to regions, there is duplication and lack of coordination and donors tend

to remain vertical in their activities. This needs to be realized at the place of work that services and resources and activities are harmonized.

[Regional HAPCO, policy informant]

Some development partners agreed that harmonization policies have yet to trickle down to local levels.

The universal access plan of action exists in theory but it is not operationalized and does not seem to work. Harmonization and alignment are weak. PEPFAR supports the national plan and tries to work from the plan, but government capacity to meet its commitment is weak.
[Development partner informant]

Reprogramming of activities and slow response times may also hinder service delivery:

The discourse at the center looks good and there are substantial activities taking place at the federal level to achieve this (harmonization). However, the practice we observe in regions is that activities are not harmonized... With GF there is a lot of reprogramming of activities and this has made alignment and harmonization difficult and unpredictable. There is the problem of capacity of government to speedily respond to demands as indicated in plans, this includes drug purchasing using GF and other health commodities.
[Development partner informant]

On the upside, despite over-stretched capacity, a regional health administrator cited reduced transactional costs as a key improvement to operations at the woreda level:

The woreda is strengthened and is the place of planning and implementation. Capacity is still a problem. However, this approach reduces a lot of transactional costs... Every implementing agency must have a woreda base to access funds or get material support from government.
[Regional health bureau representative]

New woreda-level incentives may boost performance, capacity

To improve capacity, some reprogramming of activities has enabled regions to use GF monies for activities such as training health personnel, building primary health facilities, and equipping regional and health facilities with medical technologies.

The FMOH is planning to introduce a pay-for-performance system at the woreda level. Under the plan, woredas that achieve pre-specified targets, based on data generated through the HMIS, will receive bonus payments. According to key FMOH informants, the plan will create incentives to more effectively use resources and achieve better performance. This is hoped to give development partners more confidence to work from one plan and use the same indicators for similar program evaluations. To help build capacity to implement the plan, development partners are providing technical assistance to woredas in the areas of planning and management.

4.3 THE PRIVATE SECTOR AND CIVIL SOCIETY ARE KEY COMPONENTS OF HEALTH POLICY

Along with development partners and various levels of government, Ethiopia's health policy clearly describes the for-profit private sector, NGOs, and civil society as key stakeholders in the health sector, particularly in the scaling up of HIV/AIDS and other health services. The mistrust and suspicion that the

baseline study observed between these sectors seemed to be disappearing by the time of the 2006 follow-up. NGOs had been active in the social aspects of HIV/AIDS, while some for-profit clinics were actively delivering clinical-related HIV/AIDS services, including HCT services such as CD4 count and other blood test-related services. Although still somewhat limited, the role of the private sector in the delivery of health care services had started to expand.

GHIs instrumental to private sector involvement

Improvements in the role of the private sector were largely attributed to the influence of the GHIs, and private sector involvement was a World Bank requirement. World Bank money has been channeled to HAPCO to fund HIV/AIDS activities carried out by government, the private for-profit sector, NGOs, and civil society. Next, the GF required that 30 percent of the funds be allocated to the private sector, civil society organizations, and NGOs to implement activities in HIV/AIDS, TB, and malaria – but limited capacity of the private sector and NGOs to manage the funds stymied that goal. Most remarkably, the introduction of PEPFAR in 2004 funded a wide variety of NGOs and civil society organizations, and to some extent the private for-profit sector. PEPFAR stimulated the NGOs to actively engage in delivering HIV/AIDS related services.

Respondents interviewed for the 2009 study report that the role of the private sector and civil society has continued to expand. The Christian Relief and Development Association (CRDA), a civil society umbrella organization, now includes as members more than 350 civil society organizations and NGOs that work on health-related activities, including HIV/AIDS. Civil society is also increasingly involved in the governance of the CCM and the HSDP. With respect to the CCM, the director of the CRDA serves as the deputy chair. A civil society informant emphasized the successful cooperation between NGOs and the HSDP:

The civil society is active in the HSDP, both in its development and implementation. We are key stakeholders in health and are members in all the governing committees of the HSDP – JCCC (Joint Core Coordinating Committee). We are happy in the way we are participating in the health sector. The country is showing changes in its health services and this is what we want to see happening. We want Ethiopia to achieve the MDGs in health. All efforts being made to reduce the disease burden with donor funds are encouraging.
[Civil society organization representative]

Comments from an FMOH informant support the view that the private sector is playing an important role in HSDP governance:

The involvement of the private sector, both for-profit and NGO/civil societies, is increasing... We involve them in all processes of the HSDP – planning, reviewing and monitoring – they are also members of the HSDP governance and members of various HRH committees.
[FMOH key informant]

Respondents for the 2009 study also indicated that the FMOH and the GF CCM have been encouraging civil societies to be principal recipients of the GF. The Network of Ethiopian Association of People Living with HIV/AIDS and the Ethiopian Association of Faith Based Organizations became GF principal recipients and started receiving funds in April 2009. This raises the number of GF principal recipients in Ethiopia to four. The FMOH, along with the CRDA, closely monitors and supervises the activities of the

new principal recipients, and provides them with technical assistance by assigning technical personnel to work with the organizations to adhere to the financial and managerial requirements of the GF.

Weak capacity also remains a problem for private sector organizations

However, according to a key respondent, weak capacity of the new principal recipients helps explain why the private sector is accessing only 10 percent of the GF funds, which is well below the GF's 30 percent target level. There is evidence of self-criticism in the private sector for not doing enough to be a stronger partner in health in terms of organizational capacity and intent. An informant explains:

We cannot blame anyone, we need to be better organized to access more funds and implement the prioritized activities in the strategic health plan. Ethiopia is the only country in East Africa with civil societies as principal recipients. NEP+ and EIFDDA have to be strengthened in capacity, managerial, operational, and program coordination. Each of them has subrecipients. They must be able to have strong monitoring and evaluation teams. The CCM is concerned about this. You see it is good to have several principal recipients, but you have to make sure that they can deliver the services they budgeted for.

[Civil society organization representative]

Weak capacity seems to be a key constraint for both the private for-profit and nonprofit sectors as a whole, according to many of the informants interviewed. The present leadership in the FMOH along with the development partners, especially PEPFAR through USAID and CDC, is trying to build the capacity of the private sector.

Regional NGOs, civil societies engage in care and support activities

Regional NGOs and civil societies also participate in care and support activities, including prevention. They only need to submit plausible proposal and prove their dependability based on past experience. A regional informant explains:

NGOs and civil societies submit proposals that are reviewed by a board of technical reviewers. Those whose proposals win grants from HAPCO are monitored and evaluated and are required to submit both performance and fund liquidation reports. With regard to care and support, there are 138 PLHIV associations in the region (Amhara) and ten PLHIV networks – one network in a zone. The care and support activities planned by the PLHIV are discussed with the networks and then the activities approved are funded. The activities include nutrition support, income generating activities (IGA), and training. Funds utilized are accounted through the woreda HAPCOs where the associations operate.

[Regional HAPCO representative]

Donor funds and technical assistance enhance support capabilities

The private for-profit sector has also improved its participation in the health sector by accessing donor funds and technical assistance. This sector has been active in HCT. Now it is moving to give services in ART, PMTCT, and training in-hospital management and also limited involvement in TB and malaria. According to one private sector representative, donor funds are a major enabler in the scale-up, but organization and leadership need much improvement:

PMTCT has started in the last two months, and it is not yet satisfactory. We are also involved in the training of health workers in the management system of hospitals. We are also subcontracted in the monitoring of health facilities with regard to identifying gaps in their health delivery services. The private sector is getting training free of charge, too. USAID has taken some initiatives such as PSP-E [Private Sector Program-Ethiopia] to involve the private sector in HIV/AIDS. They are PEPFAR initiatives. Of course, the private sector is less organized and could not present itself as a key stakeholder. We need to strengthen the association and have a proactive leadership.

[Private sector representative]

Relationships between government and private officials show increased trust

What seems to have emerged since the last follow up study (2006), is a further sense of understanding and a more appreciative relationship between the private sector and the FMOH. The “blame game” between the two has largely disappeared. In fact, many of the representatives of the private sector who were interviewed for the 2009 study commented that the FMOH leadership is very much appreciated for its inclusive and proactive stewardship. Both the private for-profit and nonprofit sectors have strong appreciation of each other. An informant commented that the Minister of Health is trying his best to strengthen the association of private practitioners in health and be viable partners in the HSDP. According to the informant:

The Minister of Health has been encouraging and is trying to strengthen the organization of the private sector. He is trying to strengthen the association, for it would be easier to communicate with the association instead with every facility or institution.

[Private sector representative]

4.4 HMIS AND MONITORING AND EVALUATION REPORTING SYSTEMS BECOME TOP PRIORITY

Despite the strengthening of public and private sector relationships and overall progress toward harmonizing government policies with development partner activities, the national health information system remains one of the less-developed and weaker areas in Ethiopia’s health agenda. According to the HSDP III, one of the government’s health system priorities is to strengthen the health information system, which includes information collected through the HMIS, health surveys, vital events registration, surveillance, and the census.

Insufficient human resources, misaligned technologies hamper data collection

Informants interviewed in both the 2003/04 and 2006 surveys agreed that HMIS and monitoring and evaluation had suffered from insufficiently skilled human resources, significant geographic distances, poor infrastructure, and problems in the motivation of health workers to collect and use information. In addition, as reported in 2006, a number of respondents expressed concern that GHIs had increased the fragmentation of data collection and reporting in Ethiopia. While GHIs, particularly PEPFAR, helped build capacity in HMIS skills – particularly in the areas of data collection and reporting procedures – to improve the availability of data on HIV/AIDS services, weaknesses in the government’s health

information system meant that the donor requirements for timely and complete data could often not be met. As a result, some donors decided not to use the government system and to establish parallel systems. At the center, representatives of the FMOH planning department commented that the excess of vertical programs was complicated by the wide array of different and difficult reporting formats that woreda officers were required to satisfy, which led to duplicate efforts and a greater HMIS work burden for health workers. FMOH leaders realized the importance of the role of health information and were sharply focused on attempts to harmonize fragmented government and donor-supported reporting systems.

Strategic restructuring of HMIS highlights local needs

As part of the BPR initiative, the government, with significant support from PEPFAR through Tulane University (USA), has undertaken an extensive strategic development process to reform and restructure the HMIS. The key objective of the new HMIS is to provide data that can be used for local self-assessment and performance improvement, and to harmonize the information needs of all HMIS “consumers,” which include various levels of government, donors, and other international stakeholders (FMOH 2008b).

The new HMIS is designed to collect information on all health activities including services delivery, fund utilization, health commodities, and drugs and technologies procured and used. Information is to be systematically collected from all health facilities – health posts, health centers, and hospitals at all levels throughout the country. The system has a number of elements, including registers with instructions for all health facility service wards; patient admission and discharge cards; service identification, appointment and master patient index cards; integrated family folders that include information on patient history; and standardized data collection and reporting forms. In addition to collecting data on service delivery and logistics, the HMIS reforms will also include subsystems to collect data on health finances, human resources, and capital assets.

Reformed HMIS pilot programs progressing well across regions

As of 2009, the FMOH, in collaboration with Tulane University (PEPFAR) and John Snow, Inc., is in the process of pilot-testing the new HMIS in Deri Dawa, Harar, Gambella, Afar, and Benishangul Gumuz. Health facilities are receiving supplies (individual folders, patient cards, master patient index, tracer-card, service identifying cards, and appointment card).

According to the FMOH (2009), the HMIS reform process has progressed well in all regions. During the Annual Review Meeting, participants commented on how the new HMIS was being used in health centers and hospitals. Unfortunately, HMIS piloting was not being conducted in the regions that were part of this study design. However, one of the study researchers was able to observe the use of the family folders in MCH units at Jijiga referral hospital and the use of the electronic smart card. Hospital staffs were observed using the system with ease. They reported that doctors are getting complete information of their patients because of the new system.

Improvements in data management, decentralized design speed service delivery

Hospital directors interviewed all agreed that the new HMIS is contributing to the effective management of the hospitals and timely delivery of services, and to evaluating service delivery activities.

The new management system has improved the quality of services especially in giving quick services to clients and recording of cases of each patient through the new HMIS. The data management, recording use of folders and cards and the electronic card system are making the HMIS reliable and it has improved. The system allows for reviews and regular weekly or biweekly or morning sessions by case teams and case coordinators. We are reviewing events that have happened including cases of patients and decide on what we need to do collectively, share experiences. The new system is making our service delivery good. There is a team charter where vision, objectives and job descriptions are indicated and staff has to agree and sign on employment.

[Regional health informant, Amhara]

A number of other respondents at the central level were also optimistic about the new HMIS, particularly the standardization it brings to reporting:

The new HMIS manual is being implemented in the small regions – Gamble, Harari, Deri Dawa, Afar, Somali, and Benishangul. Piloting is being done in the major regions... the new HMIS has fewer indicators and looks easy to manage, but needs a computerized system if it is to work in uniform in all regions, facilities, and health offices. The new HMIS reduces the burden of reporting for different partners. However, it requires that there should be full-time employees for the work in each office/facility. It is electronic driven, I am sure when implemented it will improve out HMIS very radically. [FMOH policy informant]

The HMIS has been reengineered and is designed to generate necessary data from health post all the way to the referral hospitals. It is being tested in hospitals and selected regions. What is important is that there is commitment to make HMIS of international standard and to make decisions and service delivery evidence based.

[Private sector representative]

In addition, an informant pointed out that the redesigned HMIS is adapted for decentralized management, in line with government policy. Now health workers can collect information that can be interpreted at the district level, where it can help strengthen local planning.

Now we have decentralization and the system has to fit in to the existing policy. Health reports remained to be poor and less dependable for decision making. It used to be full of confusion. Now HEW collect information, send it to the district. At the district level there was lack of skills for data collation and analysis and ability to give feedback. The same existed at the zonal level. Now government is strengthening the district planning and implementation which requires capacity in HMIS. HMIS staff are being deployed to work at district/woreda level... it is beginning to assume shape.

[Development partner]

FMOH and GHIs focus on capacity building for HMIS

Putting in place a functional, standardized, and comprehensive HMIS requires appropriate staff with skills to collect, analyze, and use health information. The FMOH with support from development partners, particularly from PEPFAR through the CDC and USAID, has supported a number of efforts to build capacity in HMIS and monitoring and evaluation, including the following:

- **Health information technology.** A new diploma course for health information technicians has been introduced with support from PEPFAR via Tulane University, with the ultimate goal of training 8,000 over the next three years. Currently, more than 1,000 students are involved in the program.
- **Monitoring and evaluation.** A MSc-level course that trains leaders in monitoring and evaluation has been ongoing at Jimma University. Over 100 have graduated and the program is continuing.
- **Public health biostatistics.** A MSc-level course that trains biostatisticians in public health has been developed at Mekele University with support from PEPFAR via Tulane University.
- **Family folders.** Training of the HEW on the use of the family folder.

The decentralization process, which strengthens woreda planning and implementation, is expected to boost the implementation of the new HMIS. Facilities and woredas are required to produce health information for planning their annual health activities. The FMOH leadership is strongly committed to strengthen HMIS. There is also strong partnership with stakeholders to develop this block of the health system, especially from PEPFAR through the CDC and USAID.

Human resources, funding remain barriers to HMIS implementation

Key challenges in successfully implementing the new HMIS are barriers in human resources and funding. The human resource need is being tackled by the retraining of existing employees in the facilities with little new employment. However, funding remains a problem. According to the head of Planning and Programs in Health, the HMIS needs US\$34 million for the budget year, but only US\$12 million is available. Development partners are expected to help fill in the funding gap.

4.5 BUDGETING AND USE OF FUNDS PUSH TOWARD GREATER INTEGRATION

The government is placing increased emphasis on integrating aid into government budgets by encouraging donors that use off-budget support to the health sector to allocate more funds on-budget.

MDG Pooled Fund integrates funds for MCH services

A key financial component in this strategy is the MDG Pooled Fund, which is the IHP+-supported fund that participating development partners have agreed to use to pool funds for the scale-up of services aimed to achieve the MCH MDGs. Pooled monies can be used by the government for underfunded health activities essential to meet MDGs, including HSS activities. The current plan is to raise about US\$300 million for the period from 2008/09 to 2010/11 to assist the HSDP in meeting its MCH and HSS objectives.

Block grants to woredas should strengthen decentralized, local assistance

A second component is the block grants to woredas, which are supported by the World Bank's Protection of Basic Services Project. With this mechanism, the funds are under the control of the woreda and finance recurrent costs, including wages, maintenance, and other operating costs. This is a key strategy not only to improve harmonization of aid assistance, but also to strengthen the role of local government under Ethiopia's system of decentralization.

4.5.1 SOME DEVELOPMENT PARTNERS REFUSE TO POOL FUNDS

However, some development partners do not participate in the government's preferred pooling mechanisms described above.

U.S. government. The most notable example is the U.S. government, which, as a matter of policy, does not participate in pooled funding mechanisms with the exception of the GF basket. Rather than providing direct budget support to the government, the U.S. government provides technical assistance by transferring monies to a large number of recipient organizations, each of which signs a separate agreement with a U.S. government agency, most often either USAID or CDC (Bernstein and Sessions 2007). As such, the U.S. government uses its own system of fund management. Nevertheless, PEPFAR and PMI activities do fall within the purview of HSDP governance.

GF and World Bank. Moreover, funds from GF and the World Bank's MAP are also not pooled via the above two funding mechanisms. Instead, funds from these GHIs are effectively transferred to HAPCO (in the case of GF's HIV/AIDS grants and MAP) or to the FMOH (in the case of the GF's malaria and TB grants) through the Ministry of Finance and Economic Development (MOFED) (FMOH 2008a) However, unlike PEPFAR funds, GF and MAP funds flow to the government's financial system. In the case of the GF, the experience in Ethiopia suggests that the government system can manage and utilize large flows of funds coming into the health sector. On the other hand, the GF Secretariat in Geneva has also learned from previous implementation processes and challenges. It has become more flexible in its conditions for implementation such as (1) allowing recipient countries to reprogram funds within the framework of their approved proposals; (2) improving the time of release of committed funds, and (3) decreasing the fund liquidation requirement from 70 percent to 50 percent. Respondents report that these policies have made working with GF smoother.

4.5.2 OUTSOURCING FUND DISBURSEMENT SHOWS MIXED RESULTS

Previous studies that have investigated the funding flows in Ethiopia from the GF have found that there were initially problems with disbursing funds received (Banteyerga et al. 2006 and Bernstein and Sessions 2007). To accelerate grant implementation, HAPCO outsourced the task of procurement to UNICEF and made other changes to address bureaucratic difficulties. As a result, Ethiopia was able to speed fund disbursement. (Whether there have been similar problems in disbursing funds from PEPFAR, PMI, and MAP has not been a topic of investigation.)

Regional- and woreda-level respondents continue to see problems with "liquidation"

However, a number of respondents interviewed in 2009 at the regional and woreda levels reported that fund disbursement is sometimes still a problem that affects the ability to scale up focal services. Respondents often refer to the flow of funds from the central to the local levels as "liquidation."

Although we are giving the services as planned, liquidation is a problem. This is because the money goes to the MOFED, then to the regional MOFED, and then gets sent to the zones and woreda. The system is bureaucratic and fund utilization or liquidation report is delayed and sometimes it is not reported. This discourages donors from sending the next tranche of funding. It has also high transactional costs. It would have been better if donors could send their money to the regional health bureau or FMOH. This is much faster and easy to move the funds and also liquidate it on time and submit statement of expenditure.
[Development partner informant]

This informant is referring to programs such as the World Bank's Protection of Basic Services, which puts money into the central treasury of the government to be disbursed through the government's financial system. Another respondent also cited the slow pace and unreasonable requirements of MOFED.

Fund disbursement is slow. MOFED is slow. Sometimes they send you money in September that should have been sent in June and ask you to write liquidation report in December. There is time needed to send the money to the zones, woredas, and these structures have lack of capacity; and there is time needed to use the money, then collect statement of expenditures and write the report.
[Regional health bureau representative]

High turnover can also inhibit utilization of funds.

Our fund liquidation is 85 percent but we still have problems of reporting on fund utilization because woreda officials get changed and some disappear. There is high level of turnover of nominees at all levels. We do not get financial and physical reports as needed from woredas. Still we are in the right track. You see we do not have banking system and transfer is done on personally.
[Regional health bureau representative]

Still, fund liquidation is improving

Other respondents interviewed, while acknowledging that liquidation remains as an important problem, commented that the situation is improving. According to one policy informant, the high fund liquidation for that budget year was partly a result of BPR's implementation:

Overall fund liquidation is good and it has improved very much. For example the money made available for the year EFY [Ethiopian fiscal year] 2001 was Birr 143 million; only a balance of 20 million exists, liquidation for the budget year is 87 percent. In fact there is no money left at the region. The remaining money is awaiting liquidation report from the woredas and zones. The introduction of BPR helped in the efficiency in liquidation. For training purposes funds are not released to the collaborating sectors; HAPCO be it regional, zonal, or woreda approves the training and covers the expense. This cuts the transaction of sending money to the sectors and asking for statement of expenditure. The capacity level of fund utilization and

accounting has improved. There is commitment in leaders and officers. As the planning involves the executives at different levels of the administrative structure the follow-up is good and hence the liquidation of funds has improved.

[Regional HAPCO, policy informant]

Increasing financial personnel and pooling funds at the woreda level help strengthen the system.

Fund liquidation was a problem in Oromia, but now we have employed a number of financial personnel up to the woreda and this has helped our fund management and reporting system on fund liquidation. We are also working closely with MOFED at the woreda level and we do not have serious problem there. We still need to make this area stronger and more efficient. We supplement MOFED by employing contract personnel. You see finance at zone and woreda is pooled and we have to work with MOFED.

[Regional health bureau representative]

On the whole, respondents tended to acknowledge that complete alignment among partners must take time, but that the scale-up has had positive health effects overall:

The support of the donor funds has strengthened our health delivery services and our capacity as well. We are getting direct funds from GF, UNICEF and WHO but PEPFAR gives services... Of course sometimes we see duplication of efforts. But overall it is good. GF is marked for HIV and TB, UNICEF for maternal and child health. In fact if we could harmonize PEPFAR our delivery service would improve more. PEPFAR is supporting us with the ART, HCT areas in the service delivery facilities.

[Regional health bureau informant]

4.6 SUMMARY

Overall, the results of the study suggest that GHI investments and activities are well aligned with the government's health systems policies and priorities, both to fight HIV/AIDS, TB, and malaria and to strengthen the overall development of the health system. The government recognizes that the massive flow of resources from GHIs are an unprecedented opportunity to strengthen the overall health system, and through the BPR initiative, have been working actively with GHIs to strengthen a number of health system building blocks. One notable example is a strategic development process to restructure the HMIS, which has received extensive support from GHIs.

There also seemed to be agreement that the government's efforts to improve aid effectiveness, which include the HSDP Harmonization Manual and the IHP+ Compact, have helped to improve harmonization of assistance received by the GHIs. In fact, the influx of resources from GHIs in recent years has intensified the government's efforts to improve aid effectiveness in Ethiopia. However, many of those interviewed commented that GHI activities at the regional and woreda levels have not been well integrated into the woreda planning process. Respondents attributed the problem to limited capacity.

5. FINDINGS: HUMAN RESOURCES

This section looks at the policies and processes undertaken by the Ethiopian government to address the critical shortage of health workers in Ethiopia. It describes the catalytic effects of the GHIs on expanding human resources through the introduction of new cadres of health workers and the expansion of public and private sector education and training. The results described in this section, with first-person observations from 2009 informants, illustrate the effects of GHIs on the recruitment of new cadres of health workers, their distribution across health facilities, their time allocation and workload between focal and non-focal diseases, the intrinsic motivation and pride of health workers in their job, and the role of financial resources in improving motivation. Finally, this section summarizes the effect of the GHIs on changes in management functions, such as supervision, in-service training, and incentive packages that health workers from the panel of primary health care facilities received between 2003/04 and 2009.

5.1 HEALTH WORKFORCE CRISIS NECESSITATES MAJOR STAFFING PUSH

Ethiopia is one of 57 countries listed by the WHO as having a health workforce crisis. The *World Health Report 2006* estimated that Ethiopia had a density of 0.247 doctors, nurses, and midwives per 1,000 persons, as compared to the threshold of 2.28 used in the report to identify countries with a crisis (WHO 2006). The findings from the 2003/04 baseline and 2006 follow-up studies suggested a number of problems with the human resource situation in Ethiopia, including high staff turnover and attrition, which were found to be increasing in 2006 with the growing shift of personnel from the public to the private sector; poor retention of the public sector workforce; shortages of many types of cadres of health workers; and poor working conditions.

5.2 GOVERNMENT AND GHIS FORM STRATEGIC INITIATIVES TO IMPROVE HUMAN RESOURCES

Since 2006, the government has embarked on or continued a number of major initiatives to improve human resources, often with significant support from the GHIs. Objectives are to not only increase the number of health care workers at multiple levels, but to improve their working situations so that they will be motivated both to stay and to increase the quality and reach of patient care. Strategies to this end include the following:

- Ongoing scale-up of pre-service medical education and training infrastructure to expand the health workforce;
- Development of new cadres of health workers, including HEW supervisors and health information statisticians;
- Ongoing development of non-physician clinicians and emergency obstetricians;
- New systems of financial and non-financial incentives packages to retain health workers;
- Improved accreditation, licensing, and re-licensing with enhanced capacity for implementation;

- Roll-out of a human resources information system (HRIS);
- Improvements in regulatory and legal frameworks.

Training of health officers, extension workers

As a first step in this project, the government has continued to expand the human resources initiatives started under the HSDP II, including the training and appointment of health officers, part of Ethiopia's Accelerated Health Officers Training Program (AHTOP), and HEW, part of the HEP. USAID, as one development partner noted, has also been central to the initiative:

USAID has been particularly active in scaling up ART and HCT services at health facilities. This has been possible by mentoring and training health officers and nurses to take on certain tasks like the management of ART, which was previously done by physicians. The extensive training of health officers has also helped deal with the present shortage of skilled workers.
[Donor informant, 2009]

The government appears to be on track to achieve its health worker targets for both programs. For example, the total number of students enrolled in the AHTOP as of June 2009 was 2,925 and the total number of students who have graduated is 2,518 (out of the 5,000 planned). In comparison with the target of 6,215 HEW to be trained and deployed in 2009, 7,260 HEW were actually trained and deployed, an achievement rate of 117 percent; another 2,258 were in training (FMOH 2009).

New ABC program requires public service and comes with benefits

Second, the government has introduced the ABC Incentive strategy, a program that requires mandatory public service after graduation from medical school and sets forth differentiated terms and conditions for pay and benefits, depending on workers' distance from the center to the periphery (FMOH 2007). That is, for "A" facilities close to the center, incentives are lower than for "B" facilities, which are farther away from the center. Incentives are highest for workers in remote "C" areas, which are farthest from the center. ABC includes financial and nonfinancial incentives (e.g., salary, eligibility for release from public service, eligibility for postgraduate training, eligibility for transfer) to help retain health workers in rural and remote locations.

A key informant at the regional level was optimistic about the new incentives, citing competition between facilities and increased physician pay as primary successes:

With the new financial reform system in hospitals, physicians can collect their incomes from different sources and raise their top-ups up to Birr 3,000. The idea is with improvement in the quality of services there will be more clients and more income at the health facility that could be used to motivate health workers. It is believed that this kind of empowerment will create healthy competition among health facilities and improve the quality of care. We have also encouraged hospitals to develop private wards in order to help them generate more income. Additional income is also being generated from registration fees and private consultations.
[Regional informant]

Another key informant from the CCM Secretariat confirmed that mandatory service requirements along with financial incentives are helping to retain health worker staff:

Staff turnover is still a challenging in the health sector. The government has taken initiatives to retain staff both by requiring them to services for some years and giving them incentives such as scholarships and additional money. This seems to be working. Higher level of training is now reserved to government employees.

[GHI informant, CCM Secretariat]

HRH Strategy to align with BPR initiative

Third, the government is in the process of developing a new 12-year HRH strategy (2009-2020) for health worker training and retention, which is part of its BPR initiative and has been supported by PEPFAR through Tulane University. While the strategy is not yet in place, based on country interviews and documentation, Campbell and Settle (2009) declare that the “single greatest contribution of PEPFAR to the government of Ethiopia’s workforce planning process has been the extensive support of Tulane Ethiopia for the HR2020 Strategy.” Objectives of the strategy include expanding pre-service training of doctors and other types of health workers, rationalizing the deployment of health workers, and improving health worker motivation and retention.

In fact, in line with the new HRH strategy, PEPFAR has worked through numerous organizations to strengthen human resources in Ethiopia’s overall health system, forming initiatives from health information systems to health worker training and education: For example:

- **Tulane University** has developed an extensive HMIS that is aimed to become the foundation of a platform for high quality, routine information on the health workforce. The HMIS has been piloted, and a plan has been developed for full-scale deployment;
- **Abt Associate’s Private Sector Program-Ethiopia** helped initiate retention interventions for private sector providers. These include offering human resource management training to private facility owners and managers, technical assistance to facilities to develop a package of free medical procedures for employees and families, and helping to ensure that private sector employees are eligible for specialist training programs;
- **John Snow International** has developed an Urban Health Worker Extension Program, which trains underemployed nurses as urban extension workers to improve hygiene and sanitation, family health, disease prevention and control, and injury prevention and first aid in three regions;
- **Management Sciences for Health’s (MSH’s) HIV/AIDS Care and Support Program** has extended the HEP with *kebele*-oriented outreach workers, low-level community workers.

5.3 FINDINGS ON GOVERNMENT HEALTH FACILITIES AND HEALTH PROVIDERS

The following sections present findings from the sample of government health facilities and health providers working in those facilities, and from the in-depth interviews with various stakeholders at the national, regional, and woreda levels. The results are presented for the overall sample of government health facilities. (No breakdown by type of facility or for private facilities is provided.)

Facility-level results show sharp increase in health providers since 2004

Table 5.1 shows the average number of government health workers by type of worker and type of facility across the three rounds of data as well as changes between 2003/04 and 2009. Respondents from all 43 public primary care health facilities were interviewed at each round. Overall there was a sharp increase in the mean number of health providers over time. In 2003/04, public health facilities had an average of 21.1 health workers, with the mean of 38 workers in health centers and six workers in health posts and clinics. In 2009, the average health facilities had a mean of 27.7 workers, showing that there was an increase in 6.6 workers across time. While health worker numbers increased in all types of public health facility (centers, clinics, and posts), the number of health workers increased twofold in health clinics and health posts. It should be noted that some health clinics and health posts were upgraded to health centers after 2003/04, which may help explain the increases among these types of facilities.

TABLE 5.1. AVERAGE NUMBER OF HEALTH WORKERS BY TYPE OF HEALTH WORKER FOR ALL PUBLIC HEALTH FACILITIES

Type of health worker	Mean number of workers in public health facilities (health centers, health posts/stations)			Change in public health facilities, 2004–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Physicians	0.4	0.3	0.2	-0.2
Health officers	0.5	0.3	1.4	0.9
Staff nurses	1.2	0.7	5.4	4.2
Clinical nurses	1.6	2.5	1.6	0
Qualified midwives	0.7	0.5	0.9	0.2
Junior nurses	0.9	0.7	0.1	-0.8
Traditional birth attendants	0.9	0.3	0.6	-0.3
Counselors	0.6	0.8	0.8	0.2
Lab technicians	1.2	1.2	1.8	0.6
Pharmacists	0	0	0.3	0.3
Pharmacy technicians	0.5	0.8	1.2	0.7
Health assistants	2.4	1.9	0.2	-2.2
Sanitarians	0.4	0.5	0.3	-0.1
HEW*	-	-	2.6	2.6
Health information statisticians*	-	-	0.3	0.3
Health information data entry clerks*	-	-	0.4	0.4
Other	9.8	9.7	9.7	-0.1
Total	21.1	20.4	27.7	6.6

* These provider categories were not included in the 2003/04 and 2006 surveys

Though the total number of workers increased across time, this uptick was not systematic across all cadres of workers. As indicated in Table 5.1, the mean number of physicians decreased significantly from 2003/04 to 2009. In contrast, the number of health officers, qualified midwives, counselors, laboratory and pharmacy technicians, and pharmacists increased over time. The sharp increase in the mean number of staff nurses from 2003/04 to 2009 indicates that the government has made serious efforts to increase the role of this cadre of health workers. Clinical nurses are being trained to serve in both government and private facilities to increase their numbers (not shown in table). The numbers of junior nurses,

traditional birth attendants, and health assistants decreased. The decrease in the mean number of junior nurses and health assistants is due to a government policy of strengthening and training clinical nurses instead of junior nurses and health assistants.

New cadres of health workers introduced across facility types

Table 5.2 shows the mean number of new cadres of health workers among the sample by type of health facility. Two new cadres of workers – HEW and health information statisticians and data entry clerks – were introduced in government health facilities between 2003/04 and 2009. The number of health officers increased in health centers, but saw no measurable increase in health clinics/posts.

TABLE 5.2. AVERAGE NUMBERS OF NEW CADRES OF HEALTH WORKERS BY PUBLIC HEALTH FACILITY

Type of health worker	Health center			Health clinic/health posts			Changes in mean number of providers, 2003/04–2009 for health center	Changes in mean number of providers, 2003/04–2009 for health post
	2003/04	2006	2009	2003/04	2006	2009		
Health officers	0.9	0.6	2.6	0	0	0.4	1.7	0.4
HEW	*	*	3.4	*	*	1.9	3.4	1.9
Health information statisticians and data clerks	*	*	0.6	*	*	0	0.6	0

Deployment of HEW began in 2006

HEW were introduced in response to the Accelerated Expansion of Primary Health Care Coverage and HEP in 2003. HEW in Ethiopia are all female. Selection criteria include being 18 years of age or older and a resident of a kebele, having a high school education, and being recommended by the kebele administration and willing to serve their own community. The HEW are responsible for delivering a package of promotive and preventive services at the community level, which include:

- Infectious disease control and prevention (STIs, HIV/AIDS, and TB control; malaria prevention and control);
- Family health (MCH, immunization, nutrition, FP/RH)
- Hygiene and environmental health
- Health education and communication

The HEW began to be deployed at the community level in 2006 after successfully completing a one-year course including practical sessions. They are required to spend 75 percent of their time on outreach activities at the community level. Their many tasks include making home visits to mothers with newborns and children, advising mothers on how to cook nutritious foods, and building latrines.

Key informants upbeat about positive influence of HEW

In semi-structured interviews, key informants were consistently positive about the HEP and its contribution to improving prioritized health care services, particularly FP and immunization:

In service delivery, the HEP is a major way to achieve MDGs. Sixty to 70 percent of diseases are preventable through health promotion and prevention activities, which is the focus of the HEP. Findings from independent studies show that the HEP is helping a lot in maternity and child health. I remember assisted delivery was at 5 percent now we are reporting it at 24 percent. Providing information is important. HEW are giving information to women to encourage them to deliver at facilities. FP is increasing which is good for child and maternal health, particularly birth spacing. Immunization rates are being reported at 85 percent which is great for child survival. Malaria is being managed by HEW not only distributing bed nets but also conducting rapid tests for diagnosis of malaria.

[Development partner]

Preventive and curative services, along with family education in sanitation and general health, are some of the HEW most valued activities:

With HEP in place now the development and access in primary health care is moving at a rapid speed. Every household has access to disease prevention, family health services, sanitation, and health education. The HEW are females. They are salaried and from the grassroots health workers of the ministry of health... the HEW give curative services in malaria, TB community DOTS, child diarrhea, use ARTD to diagnose malaria. Nurses and health officers give services at health centers.

[FMOH informant]

Another informant emphasized the importance of shifting prevention tasks from doctors to HEW and other community agents:

The launching of the HEP allowed HEW and local community-based health agents to deal with all health promotion and disease prevention activities – the experience is very positive and the disease burden is likely to be reduced influencing the need for higher health professionals for treating preventable diseases. The progress in this sector is fast and encouraging.

[Donor informant]

The HEW are also supposed to provide health education in traditional institutions at the community level such as schools and Idirs. As indicated in Table 5.2, as of 2009, there are a mean number of 3.4 HEW at the health center level and 1.9 at the health clinics and health posts. This cadre of health workers is only present in public health facilities.

Health officer training program focuses on care at the health center level

Health officers are the audience for the AHOTP, whose aim is to meet the health needs of the population by providing essential health services at the health center level (WHO and Global Health

Alliance for the Workforce 2010). Based on the AHOTP strategy, each health center should be staffed by one health officer and each district hospital by two. Their training is equivalent to a Bachelor of Science in Public Health. As part of their job description, health officers are responsible for:

- Assessing community health needs
- Identifying and intervening in health-related problems of the community
- Providing curative, promotive, and rehabilitative services
- Promoting prevention and control of diseases
- Managing health services and health offices at various levels
- Undertaking essential research
- Performing minor surgical and obstetrical procedures
- Diagnosing and referring complicated cases to a higher level

USAID and the Carter Center, in collaboration with the Jimma, Mekele, and Harmaya Universities and the Federal Ministries of Health and Education, have supported the health officers' program financially and technically.

Table 5.2 shows an average of 2.6 health officers in health centers in 2009, which is higher than the targeted number of one. This represented an increase of 1.7 workers from 2003/04 in health centers; health posts and clinics saw an increase by 0.4 workers.

Health information workers tackle administrative tasks

Health information statisticians and data clerks are mid-level cadres of workers responsible for strengthening the HMIS. They have received training with a curriculum that was jointly developed by Tulane University and other local universities in Ethiopia. There were a mean of 0.6 health information statisticians at the health center level in 2009.

5.4 MANAGEMENT OF HEALTH WORKERS

In concert with GHIs, the government has managed the scale-up and education of health workers through in-service training, increased on-site supervision, and close attention to the distribution of workers across regions and facilities.

In-service training a key element of human resources strategy

The government has made in-service training an essential component of improving the management and leadership capacity of its human resources. There are attempts to link in-service training to pre-service training to help build sustainable career progression for health professionals. The majority of in-service training provided in Ethiopia is funded by donors and is project specific. CDC and USAID provide extensive training support for delivery and management of health services.

Regional informants noted that the GF-funded training in HIV/AIDS, TB, and malaria services included transportation and expenses for workers:

Funding from the GHIs has been used to train health workers in HIV/AIDS, TB, and malaria services. In fact, most health workers have received training funded by GF and other funds from development partners. It is used in the training of extension and community health workers. GF has employed three staff to work full time in TB.
[Regional informant]

The GF also funds teaching materials:

In addition, funding from the GF is used to cover per diem, transport, and other expenses during training, supervision, and monitoring and evaluation. For example when we run vaccination campaign, the GF is used for the mentioned purposes including training; in the health extension program the GF is used to train HEW, to print teaching materials, manuals, and formats for recording data on health.
[Regional informant]

In-service training a key capacity-building strategy since 2004

Table 5.3 shows that a considerable number of health workers reported receiving in-service training during all three rounds of data collection. However, from 2003/04 to 2009, there was a decrease in the percentage of health workers trained in child health, FP, and malaria prevention and care. These changes were statistically significant for malaria prevention and care and FP, but they were insignificant for child health.

In contrast, there was a big and statistically significant increase in the percentage of health workers trained in HCT (15 percentage points) between 2003/04 and 2009. This increase is most likely attributable to the scaling up of HIV/AIDS activities in that period. Overall health workers did not typically appear to receive training for general outpatient or inpatient services.

TABLE 5.3. PERCENTAGE OF HEALTH WORKERS IN PUBLIC PRIMARY HEALTH CARE FACILITIES RECEIVING IN-SERVICE TRAINING BY TYPE OF SERVICE

Type of training received	Percentage of health workers trained in the last 12 months in 2003/04 (n=118)	Percentage of health workers trained in the last 12 months in 2006 (n=125)	Percentage of health workers trained in the last 12 months in 2009 (n=217)	Change in percentage of health workers who received training, 2003/04–2009
Child health	14.4	16.0	11.5	-2.9
Maternal health	5.9	12.8	8.1	2.2
FP	9.3	11.2	4.1	-5.2*
HIV/AIDS counseling	17.8	13.6	24.4	6.6
HIV/AIDS testing	2.5	3.2	17.5	15.0***
STI counseling	5.9	5.6	4.1	-1.8
STI testing	2.5	1.6	3.2	0.7
TB care	6.8	8.8	10.1	3.3

Type of training received	Percentage of health workers trained in the last 12 months in 2003/04 (n=118)	Percentage of health workers trained in the last 12 months in 2006 (n=125)	Percentage of health workers trained in the last 12 months in 2009 (n=217)	Change in percentage of health workers who received training, 2003/04–2009
Malaria prevention and care	10.2	7.2	0.9	-9.3***
General outpatient services	0.0	2.4	1.4	1.4
General inpatient services	0.0	0.0	0.0	0.0

Note: Health workers included in this analysis have been restricted to physicians, health officers, staff nurses, qualified nurses, qualified midwives, junior nurses, trained birth attendants, and counsellors.

* p value ≤ 0.10, ** p value of ≤ 0.05, *** p value of ≤ .001

Key informants from the regional level stated that the in-service training has built capacity of both the health workforce as well as other stakeholders in health.

Our capacity to provide services to the community has increased due to in-service training: HCT cases increased from 205 to 279, PMTCT cases increased from 168 to 213, ART from 77 to 104, and mobile HCT included 1,087 clients. We also conducted workshops in which 232 regional council members, 154 speakers of house including zones and woredas and participants from all regions were present.

[Regional informant]

A senior-level health informant observed that the training has grown more coordinated and harmonized over the years:

The training we offer is harmonized. There is a task force that looks to the harmonization of training. It is not given on ad-hoc bases... Opportunities are fairly distributed among health workers. In the past the same few health workers used to take training repeatedly. Now this is not happening anymore.

[Regional informant]

5.4.1 SUPERVISION OF HEALTH WORKERS

Proper supervision of health workers is an important management practice to provide oversight of clinical and non-clinical tasks, to improve the quality and technical delivery of services, and to assist monitoring and systems improvement. Supervision also plays a key role in the human dimension of the supervisor-health worker relationship and in the motivation of health personnel (USAID Health Care Improvement Project, 2007). Table 5.4 indicates that on-site supervision increased from 2003/04 to 2009 among staff from the panel of public health facilities. In 2009, 78.5 percent of health workers were supervised, a 27-point increase from the percentage of health workers supervised in 2003/04. This finding is statistically significant. There was also a twofold increase in the mean number of times health workers who were reported to be supervised by a supervisor who works outside the facility during the six months prior to the survey. Furthermore, by 2009, 94.2 percent of public providers reported that

they received feedback from their supervisor on site. This was up by 26.7 percentage points compared to the level in 2003/04 and the change is statistically significant.

TABLE 5.4. PERCENTAGE OF HEALTH WORKERS REPORTING TO HAVE BEEN SUPERVISED IN PUBLIC HEALTH FACILITIES

Supervision	2003/04 (N=234)	2006 (N=246)	2009 (N=312)	Change, 2003/04– 2009
Percentage of health workers who report supervisor is based on site	51.3	61.4	78.5	27.2***
Mean number of times health workers supervised by off-facility supervisor in the last 6 months	1.86	3.01	4.15	2.29***
Percentage of health workers who received feedback from their supervisor	67.5	94.3	94.2	26.7***

* p value ≤ 0.10, ** p value of ≤ 0.05, *** p value of ≤ .001

A regional administrative informant confirmed that close on-site supervision increases skill levels and service quality:

With the GF we are giving on-the-job training to health workers. We have also improved supervision. The HEP will be strengthened by increasing the skills of HEW and the supervision support they get from health professionals stationed at woreda. We have also improved monitoring of health services and we are now looking at not only access but also improving the quality of services.
[Regional informant]

5.4.2 DISTRIBUTION OF HEALTH WORKERS

Table 5.5 shows the average number of workers per facility who report providing health care services for focal and non-focal diseases, and the average number of hours respondents reported to have worked by type of health care service for all public health care facilities. The table indicates that the average number of hours worked by health workers increased for almost all health services provided. There was a particularly large increase in the hours worked on HIV/AIDS testing, as this increased almost threefold between 2003/04 and 2009. The hours allocated for malaria prevention and care decreased between 2003/04 and 2009, which may be attributable to the overall decrease in malaria prevalence in Ethiopia (Jima et al. 2010). Overall the average number of hours worked per month by a health worker increased by 6.3 hours between 2003/04 and 2009.

TABLE 5.5. PERCENTAGE OF HEALTH WORKERS WHO REPORT PROVIDING HEALTH CARE SERVICES, AND AVERAGE REPORTED NUMBER OF HOURS WORKED, BY TYPE OF HEALTH CARE SERVICE FOR ALL PUBLIC HEALTH CARE FACILITIES

Health services provided	% of health workers who provided service in 2003/04 (n=118)	Average hours worked per month	% of health workers who provided service in 2006 (n=125)	Average hours worked per month	% of health workers who provide service in 2009 (n=217)	Average hours worked per month	Change in percentage of health workers who provide services, 2003/04–2009	Change in average hours worked per month, 2003/04–2009
Child health	52.5	62.4	64.0	69.1	35.5	66.6	-16.7***	4.2
Maternal health	50.0	55.8	66.4	63.7	37.3	61.8	-12.7**	6.0
FP	38.1	45.9	48.8	37.7	25.3	60.8	-12.8**	14.9***
HIV/AIDS counseling	12.7	46.2	23.2	46.0	31.3	50.5	18.6***	4.3
HIV/AIDS testing	2.5	14.3	1.6	24.0	22.1	37.8	19.6***	23.5***
STI counseling	10.2	9.3	19.2	15.8	10.1	15.0	-0.1	5.7
STI testing	5.1	5.0	11.2	25.2	6.9	11.2	1.8	6.2
TB care	22.0	62.8	27.2	43.6	16.6	52.8	-5.4	-10.0
Malaria prevention and care	12.7	28.4	20.0	18.2	9.2	15.7	-3.5	-12.7
General outpatient services	45.8	80.8	64.8	78.3	38.7	95.1	-7.1	14.3
General inpatient services	12.7	36.9	18.4	35.7	8.3	38.2	-4.4	1.3
Outreach services	23.7	26.8	8.0	35.6	4.6	40.9	-19.1***	14.1***
Reporting for HIS	-	-	-	-	46.1	4.4	NA	
Other services	42.4	66.7	28.0	67.7	35.5	110.6	-6.9	43.9***
Average number of hours worked	-	177.8	-	208.5	-	184.1	-	6.3

Note: Health workers included in this analysis have been restricted to physicians, health officers staff nurses, qualified nurses, qualified midwives, junior nurses, trained birth attendants, and counsellors. Results based on sample of workers who report providing service.

* p value ≤ 0.10, ** p value of ≤.05, *** p value of ≤ .01

Similarly, in terms of the average number of health workers per facility who reportedly provide the service at the health facility, there was an increase in the mean number of workers for all health services offered in the facility. The change in the mean number of health workers who provided HCT was notable, as it increased by one additional worker providing that service in 2009. There was also an increase in the mean number of workers providing MCH and FP services between 2003/04 and 2009, indicating that the GHIs' focus on HIV/AIDS, TB, and malaria had not caused a reduction in numbers of health workers providing MCH services. The mean number of health workers working on STI counseling and testing increased marginally, by 0.20 health workers between 2003/04 and 2009.

Similar trends were observed in private health care facilities in the panel data set. Interestingly, the average number of hours worked by health personnel in private facilities was higher at 191 hours versus 184 hours per month by a health worker in a government-run health facility in 2009.

A key woreda health administrator observed that increased staff numbers meant that workloads were manageable both for focal disease and family and maternal health services:

Enough manpower is available to provide HIV/AIDS, TB, and malaria services; as a result, there is no increased workload for these services. NGOs also hire providers in order to decrease the workload and increase the efficiency of health facilities. There is an increase in the workload on FP and MCH services. The fact that these two services have been integrated is a big factor for this load. When we come to time management; there is not much difference among diseases; in fact, HIV/AIDS, TB, and malaria service providers work on Saturdays and Sundays.

[Woreda informant]

Another key woreda informant confirmed that increased staff numbers and supervision have improved quality of care and made workloads manageable:

Regarding manpower, there are enough people assigned in every department. This has helped in increasing the quality of the work and saving time. Incentives are not given to the staff. Trainings are now being delivered more than before. The staffs are now getting more knowledge and skill. They are also given the opportunity to upgrade their status from diploma to BSc and from BSc to a higher level. This will also be helpful in increasing the quality of the work.

[Woreda informant]

A high-level medical administrator at the regional level pointed out that in his region HEW still have a long way to go, in terms of training, service delivery, and their ability to reach out to the community:

At the Somali regional level, HEW are not trained and are not involved as they are in other regions; regional laboratory service still is weak, transportation is a problem, and hospital outreach services remain poor. I am working on hospital outreach in order to strengthen the connection between community and the hospital and thereby improve the services. At the community level, HIV testing is weak and it is not happening. We have to strengthen out HEP and training HEW to change the attitude of people. Networking and linking hospital with communities through outreach services is necessary. It is important to make HEW deliver

services that change the stigmatizing attitude of people. This would also improve follow-up to minimize lose of patients on ART. Postnatal follow-up is also weak, one out of five women disappear. This should be taken seriously if we are to improve on mortality and children health – if we are to meet MDGs, we need to improve linkages.

[Regional informant]

Hours worked, by focal disease

Table 5.6 shows the differences in the average hours worked and the percentage of health providers who provided services for focal diseases (HIV/AIDS, TB, and malaria) and non-focal health care services such as MCH and FP. Overall the percentage of health workers who provided services for focal diseases increased from 2003/04 to 2009, likely at the expense of health workers for non-focal diseases. The percentage of health workers who provided services for non-focal diseases decreased by 19 percentage points between 2003/04 and 2009, and this change was statistically significant at a p-value of less than 0.001.

TABLE 5.6. PERCENTAGE OF HEALTH WORKERS WHO REPORT PROVIDING HEALTH CARE SERVICES AND AVERAGE REPORTED NUMBER OF HOURS WORKED, BY FOCAL AND NON-FOCAL DISEASES: ALL PUBLIC HEALTH CARE FACILITIES

Health services provided	% of health workers who provided service in 2003/04 (n=118)	Average hours worked per month	% of health workers who provided service in 2006 (n=125)	Average hours worked per month	% of health workers who provide service in 2009 (n=217)	Average hours worked per month	Change in percentage of health workers who provide services, 2003/04–2009
Focal diseases (HIV/AIDS malaria and TB services)	37.3	62.7	51.2	51.9	42.9	80.3	5.6
Non-focal diseases: MCH and FP services	72.9	107.3	84	124.8	53.9	115.2	-19***
Non-focal diseases: Other services	73.7	104.1	79.2	106.6	84.3	122.2	10.6**

Note: Health workers included in this analysis have been restricted to physicians, health officers staff nurses, qualified nurses, qualified midwives, junior nurses, trained birth attendants, and counsellors.

* p value ≤ 0.10, ** p value of ≤.05, *** p value of ≤ .01

However, in terms of the average hours worked by health workers, the findings indicate an increase in the average number of hours worked for all focal and non-focal health care services from 2003/04 to 2009. The average number of hours worked by a health worker on MCH and FP increased by eight hours per month between 2003/04 and 2009. For focal diseases such as HIV/AIDS, TB, and malaria, the average number of hours worked by health workers increased by 18 hours from 2003/04 to 2009, indicating that services to fight these diseases were prioritized with support from the GHIs.

5.5 HEALTH WORKER MOTIVATION

Motivation is a key factor in health worker performance. Given Ethiopia's severe shortages of health workers, motivated health workers can play an important role in increasing health sector performance and improving health outcomes. Results from a survey undertaken by the German Technical Cooperation (Mathauer and Imhoff, 2006) showed that low motivation is the second most important health workforce problem after staff shortages.

Researchers have defined motivation in the health workforce context as a health worker's degree of willingness to exert and maintain an effort towards organizational goals (Clarke and Estes 2002, Bennett 2000). Luoma (2006) describes motivation as an internal state consisting of three components: perceived task importance, perceived self-efficacy, and expectancy of personal reward. Motivation has also been defined as an internal psychological process as it is not possible to "motivate" people directly, but it is possible to influence health workers motivation with external factors such as organizational changes in the workplace, financial and non-financial incentives, training, output-based financing, career development and health sector reform policies (Luoma, 2006).

This section examines the motivation of health providers among workers interviewed in the panel of primary health care facilities in Ethiopia, comparing 2003/04 results with those from 2009. Motivation is measured in terms of job satisfaction, pride in work, satisfaction with salary, self-efficacy, satisfaction with facility resources, and self-perceived conscientiousness. It touches on the role of government and GHIs in these worker perceptions.

5.5.1 JOB SATISFACTION HAS INCREASED SINCE 2004

Job satisfaction has been defined as a worker's perspective of how well their job provides those things that they view as important (Locke and Latham 1976). A health worker's job satisfaction is thought to be important because of its likely association with internal motivation and, as a result, overall job performance. Table 5.7 indicates a 23.9 percent increase in overall job satisfaction among health workers from 2003/04 to 2009. This is a significant finding as there has been no major change in the salary structure of health workers between the 2003/04 and 2009 surveys. Moreover, health worker incentive packages have only focused on retaining doctors and other top managers. Even though the FMOH designed incentive packages as a pilot project for all health workers in 2007, the designs have not been taken to scale or evaluated (WHO and Global Health Alliance for the Workforce 2010).

TABLE 5.7. HEALTH WORKER JOB SATISFACTION: PUBLIC PRIMARY HEALTH CARE PROVIDERS

Job satisfaction	Percentage of providers in 2003/04	Percentage of providers in 2006 (n=234)	Percentage of providers in 2009 (n=246)	Change in percentage of providers, 2003/04–2009 (n=312)
Overall satisfaction with job	55.6	80.1	79.5	23.9***
Overall satisfaction with chance to accomplish something worthwhile	59.4	61.8	76.6	17.2***
Satisfaction with the chance to learn something new	21.8	20.8	35.9	14.1***
Overall satisfaction with the chance to do something that makes you feel good as a person	40.6	55.3	58.7	18.1***

* p value ≤ 0.10, ** p value of ≤ 0.05, *** p value of ≤ 0.01

In terms of health workers' overall satisfaction with “the chance to do something that makes them feel good as a person,” the findings showed that only 58.7 percent of health workers were satisfied in 2009 in spite of a big increase in satisfaction from 2003/04. This finding was statistically significant. While there was an increase in job satisfaction among health workers in the public sector, the change among private sector staff were statistically insignificant. Key informants in the public and private sectors also reported an increase in job satisfaction among health workers in the government facilities and a declining trend in satisfaction in private health facilities.

While there is no official nationwide incentive system in place, regions are encouraged to use their own incentive systems to attract key health workers, especially doctors. As a result, a number of regions have used different levels of incentives to attract doctors. Apart from doctors, no incentives have been given to other health providers.

In Oromia region, where the regional government has introduced some types of incentives for doctors, a key informant mentioned that the incentives as well as improvements in facility infrastructure have increased job satisfaction:

What is satisfying for health workers is that the facilities are well supplied with drugs and health commodities when compared to their status before the scale up of services in HIV/AIDS, TB, and malaria We give incentives to those who go to remote areas based on the scheme, top ups, housing, scholarship as well as early release if they want. With this scheme, doctors who wanted to get specialist training are coming back to the government and are being reemployed. The system is working.
[Regional informant, Oromia region]

5.5.2 PRIDE IN WORK INCREASES OVERALL

Table 5.8 shows that despite a statistically significant increase in the indicator measuring the pride health workers felt in their work from 2003/04 to 2009, the average pride index was only 47.5 percent among health workers in 2009. This number represents an increase from 36.2 percent in 2003/04. The pride index was higher among health providers working in health centers and lower for those working in clinics/health posts. There was a decline in the pride index among workers in the private sector. This could in part be attributed to the increase in training opportunities and other support provided to health workers in public health facilities as a result of the GHIs.

TABLE 5.8. HEALTH WORKER PRIDE IN THEIR WORK AND THE FACILITY IN WHICH THEY WORK: ALL PUBLIC HEALTH CARE FACILITIES

Motivation Index: Pride	Percentage of providers in 2003/04 (n=234)	Percentage of providers in 2006 (n=246)	Percentage of providers in 2009 (n=312)	Change in percentage, 2003/04–2009
30% and below	50.4	37.0	30.4	-20.0
31-70%	33.3	47.6	48.1	14.8
71-100%	16.2	15.5	21.6	5.4
Average index	36.2%	42.9%	47.5%	11.3%***

* p value \leq 0.10, ** p value of \leq 0.05, *** p value of \leq 0.01

5.5.3 LOW SALARIES HURT WORKER MOTIVATION

The index measuring health workers' satisfaction with their financial rewards remained low across all three survey rounds, indicating high dissatisfaction among health workers with their salaries. As Table 5.9 shows, the average index of satisfaction with financial rewards was 7.3 percent in 2009, a 3 percent decrease from 2003/04. This finding was highly significant (p-value $<$ 0.001). High inflation may have contributed to the low satisfaction of health workers with their financial remuneration. The finding was similar among health workers in the private sector.

TABLE 5.9. HEALTH WORKER SATISFACTION WITH THE FINANCIAL REWARDS PROVIDED TO THEM BY PERCENT OF HEALTH WORKERS: ALL PUBLIC HEALTH CARE FACILITIES

Motivation Index: Financial Rewards	Percentage of providers in 2003/04 (n=234)	Percentage of providers in 2006 (n=246)	Percentage of providers in 2009 (n=312)	Change in percentage, 2003/04–2009
30% and below	97.0	96.7	95.2	-1.8
31-70%	3.0	3.2	4.2	1.2
71-100%	0.0	0.0	0.6	0.6
Average index	10.9%	9.5%	7.3%	-3.6%***

* p value \leq 0.10, ** p value of \leq 0.05, *** p value of \leq 0.01

A key informant from the one woreda said that low salaries in that woreda and limited upward mobility dampen health worker motivation:

The government health principle has its own negative impact on the services. It is difficult to name specific services but the overall impacts are: no position upgrading, low salary scale compared to other sector offices, and no incentives. All in all these points will not allow us to achieve the MDGs in Ethiopia.

[Woreda informant]

A key regional informant stressed the importance of financial incentives:

Although significant changes have happened to improve quality of services, we need to improve on financial incentives and standard base management recognition in order to motivate staff and make them committed to the work. The government system is slow and complicated and it should be fast, for example in the use of funds for the purchase of quickly needed items.

[Regional informant, Amhara region]

Another key informant cited the negative impact of salary stagnation:

The new networked system has its own negative impact on the work. That is the salary of the staffs has not increased and this leads the staffs to look for a better salary. Other than this there are no major problems. All the other improvements that we are seeing are very helpful to achieve the MDGs.

[Woreda informant]

5.5.4 SELF-EFFICACY UP SIGNIFICANTLY AMONG PUBLIC HEALTH WORKERS

Self-efficacy represents the extent to which health workers believe they can be successful in their work. The survey results suggest that self-efficacy increased among the public providers from 2003/04 to 2009 by 14.9 percentage points. As Table 5.10 shows, this change occurred across all types of health facilities – health centers, posts, and clinics – though the increase was slightly higher in clinics and health posts. This differential could be attributed to the HEP and the recognition that the HEW have received.

TABLE 5.10. HEALTH WORKER SELF-EFFICACY: ALL PUBLIC HEALTH CARE FACILITIES

Motivation Index: Perceived Self-Efficacy	Percentage of providers in 2003/04 (n=234)	Percentage of providers in 2006 (n=246)	Percentage of providers in 2009 (n=312)	Change in percentage, 2003/04–2009
30% and below	31.6	32.1	9.9	-21.7
31-70%	59.4	60.6	63.8	4.4
71-100%	9.0	7.3	26.4	17.4
Average index	46.2	46.8	61.1	14.9***

* p value ≤ 0.10, ** p value of ≤ 0.05, *** p value of ≤ 0.01

5.5.5 SATISFACTION WITH FACILITY RESOURCES TAKES SURPRISING DIP

Table 5.11 shows the survey results on health workers' satisfaction with the equipment, supplies, and other resources available at the health facility level. There was a decrease in the overall index for resource availability. This is a surprising finding, given the emphasis of the GHIs on strengthening the infrastructure and availability of resources in the public health sector. However, the Mid-term Review of the HSDP (Independent Review Panel 2008) and the FMOH's Annual Performance Report on the HSDP III (2009) have indicated that a number of health facilities were constructed but not fully equipped. In 2009, the average index of health workers satisfaction with resource availability was 11.3 percent points, a 9.1 percent decrease since 2003/04. This finding is statistically significant (p-value<0.001).

TABLE 5.11. HEALTH WORKER SATISFACTION WITH RESOURCES AVAILABLE TO THEM BY PERCENT OF HEALTH WORKER: ALL PUBLIC HEALTH CARE FACILITIES

Motivation Index: Resource Availability	Percentage of providers in 2003/04 (n=234)	Percentage of providers in 2006 (n=246)	Percentage of providers in 2009 (n=312)	Change in percentage, 2003/04–2009
30% and below	85.5	85.0	84.6	-0.9
31-70%	12.0	13.4	12.5	0.5
71-100%	2.6	1.6	2.9	0.3
Average index	20.4%	10.9%	11.3%	-9.1%***

* p value ≤ 0.10, ** p value of ≤.05, *** p value of ≤ .01

The average index of health worker satisfaction with resource availability was higher in the private sector, with an average index of 52.7 percent in 2009.

5.5.6 SELF-PERCEIVED CONSCIENTIOUSNESS REMAINS HIGH

The index on self-perceived conscientiousness reflects workers' assessment of their reliability as health workers. The motivation index of conscientiousness remained high across all three rounds. In 2009, the average index increased slightly for the public health providers by 5.5 percentage points, but this was statistically significant. Among private health providers, there was an increase by 2.8 percentage points but this was not significant.

Table 5.12. Health Workers Self-perceived Conscientiousness: All Public Health Care Facilities

Motivation Index: Self-Perceived Conscientiousness	Percentage of providers in 2003/04 (n=234)	Percentage of providers in 2006 (n=246)	Percentage of providers in 2009 (n=312)	Change in percentage, 2003/04–2009
30% and below	3.4	2.0	1.3	-2.1
31-70%	38.0	52.0	35.3	-2.7
71-100%	58.5	45.9	63.4	4.9
Average index	72.3%	68.2%	77.8%	5.5%***

* p value ≤ 0.10, ** p value of ≤.05, *** p value of ≤ .01

In terms of health worker incentives, housing and meal allowance are practically non-existent for public sector health employees. In-service training has been reported to be the biggest incentive for health workers in Ethiopia.

5.6 SUMMARY

Funding from the GHIs as well as from other global partners has helped strengthen the human resources component of Ethiopia's health systems. A national HRH strategy is in the process of being developed, with support from the GHIs. There have been efforts to rapidly scale-up mid-level cadres of health workers and create new cadres while concurrently strengthening investment in training facilities and faculty. In addition, management functions such as in-service training and supervision have been improved and incentives have been introduced to retain physicians and specialists in rural hospitals and health centers.

Findings from the panel survey show that there was an overall increase in the number of health workers in public health facilities and the mean hours they worked in focal diseases and in MCH services. Health workers working on focal disease also received increased training between 2003/04 and 2009. Overall job satisfaction increased marginally, but health workers sustained high motivation with regard to their pride in their work, their self-efficacy, and their perceived self-conscientiousness.

MCH services continued to be strengthened through the HEP, AHTOP, and the focused training of midwives and anesthetists to expand the basic and comprehensive emergency obstetric services. Curative services also received some attention as more doctors and nurses were trained and hospitals opened.

In spite of the positive changes, human resources continue to pose a major challenge. In addition to the shortage and inadequate distribution of health workers between urban and rural areas, workers face poor working conditions, increased workloads, and inadequate financial remuneration. Other considerations such as high attrition among physicians and dual practices, inability of regional and woreda levels to pay incentives due to lack of funding, and built-in disincentives in the ABC scheme also need to be further studied and addressed.

6. FINDINGS: PHARMACEUTICALS AND COMMODITIES

Pharmaceuticals and supplies are indispensable to a health system. The timely availability of essential drugs and supplies in health facilities plays a critical role in reducing morbidity and mortality and complements other health system functions. This section explores the effect of GHIs on the procurement and distribution system and the availability of drugs at the primary health facility level. It also touches upon the transition of Ethiopia's logistics system from a "push" into a "pull" system. In the push system, higher-level authorities decide which drugs to move through the supply chain; in a pull system, lower-level health facility managers have the ability to determine and control the flow of products through the supply chain by ordering the quantity needed. Survey results on the availability of pharmaceuticals and on procurement practices are presented using data from the 2009 panel of primary health care facilities.

6.1 POLICY AND STRATEGIC PLANNING FOR ETHIOPIA'S SUPPLY CHAIN

The 2003/04 baseline study found that the government's procurement and logistics system, the Pharmaceuticals Administration Supply Services (PASS), was not capable of procuring GF-financed drugs and commodities within proposed GF timelines. Following the baseline study, PASS decided to outsource the procurement of drugs and essential supplies to UNICEF. According to the 2006 SWEF report, the arrangement worked well, although some stakeholders commented that outsourcing to UNICEF was only a temporary solution. At that time, the MOH had formed a technical committee to study the government's logistics and supply system and develop recommendations to strengthen it.

Pharmaceutical Logistics Master Plan introduced in 2006

Based on the HSDP III strategy, in May 2006, the government introduced the Pharmaceutical Logistics Master Plan (PLMP) with the aim of ensuring a harmonized and efficient system for procurement and distribution of effective, safe, and affordable essential drugs, medical supplies, and equipment in the public sector. Although the plan is regarded as well-designed, the BPR process among other factors delayed its final design and implementation (Hawkins et al. 2009). Among the problems encountered were the dismantling of the administrative unit responsible for supporting the PLMP, which resulted in the government's lacking a mechanism to coordinate donor and international technical support; slow deployment of resources committed by the GF and the GAVI Alliance; and gaps in funding, particularly in the area of capitalization for the envisioned Revolving Drug Fund and the building of stores for hospitals and health centers.

As part of the PLMP, all FMOH procurement and distribution activities have transitioned from the PASS and the Pharmaceutical and Medical Supplies Import and Wholesaler Share Company (PHARMID) to the Pharmaceuticals Fund Supply Agency (PFSA), which comprises a Revolving Drug Fund. PFSA is an autonomous government agency that receives funding from the World Bank Protection of Basic Services Project for the purchase of drugs and commodities for public health facilities. All drugs are distributed through this organization. The delivery system is designed to avoid misuse or corruptive practices. The

system includes standard tracking mechanisms to track delivered items, waste, expiry, and lost supplies. Procedures for stocking and management of supplies are standardized.

A number of key informants reported positive changes in the pharmaceutical supply system between 2003/04 and 2009, particularly in the reduction of chronic shortages:

Our ability to distribute purchase drugs and health commodities has increased and now we do not have shortage of supplies. The FMOH has taken PFSA as a major focus of BPR. Of course there are some problems in distribution from region to woreda and from woreda to health facility. There are problems of storage at port, center, and region, but with the new PFSA this will be resolved.

[Federal informant]

Though storage and shortage issues sometimes still interfere, the new logistics system is helping to fight focal and other infectious diseases:

The pharmaceutical supply system has improved with the GF in the focal diseases as well as in drugs for treating opportunistic infections. Essential drugs are available although sometimes there is shortage of drugs to treat OI [opportunistic infections], for they are used for other illnesses. PLHIV are sometimes asked to buy them from private pharmacies and as a result they complain.

[GHI informant]

USAID's Supply Chain Management System delivers technical support

PFSA has received technical support from the USAID-funded, MSH-led Supply Chain Management System (SCMS). SCMS has provided assistance to PFSA in the specification, identification, and determination of drugs to be purchased and made available. Based on coordinated procurement plans developed by Federal HAPCO and PFSA with support from SCMS, the procurement of HIV/AIDS-related commodities is handled not only by PFSA, but also by the Clinton HIV/AIDS Initiative and SCMS. With respect to PFSA, the procurement of ARVs continues to be outsourced to UNICEF, as was the case at the time of the 2006 follow-up. "SCMS has handled procurements for USAID/CDC, FHAPCO (GF) and EHNRI (GF) valued at \$90 million and handled more than 400 line items ranging from ARVs and rapid test kits to OI drugs and Community and Home Based Care kits" (Hawkins et al. 2009).

SCMS also provides support in stocking and storing drugs, in the development and implementation of a distribution system based on regional hubs and warehouses, in supporting the HMIS and supply chain, and in building other capacity in support of Ethiopia's PLMP. According to one PFSA informant,

The warehouse and hubs are good, and the cold chain is well designed. The new PFSA in collaboration with MSH is doing good work in making drug centers at close locations. Now there are ten hubs and PFSA and will increase to 25 in a radius of 160 Km. This makes the branches cooperate and exchange their stock and exchange drugs, which minimizes wastage and problem of shortage as well...

That informant emphasizes that though drugs often arrive with dates close to or past expiry, the technical assistance from MSH is helping to make deliveries more efficient and thus reduce waste:

The major problem is expiry, as some drugs arrive here already expired or with very short shelf-life left. With the help of MSH we are able to forecast and plan for a year. There are detailed technical factors that are accounted to plan drugs to be purchased – data coming from facilities and trend in drug use by quantity, brand type and other specifications. We work on rational use of drugs with the help of MSH. Our distribution and ability to access facilities has increased. Our work is encouraging the local manufactures. We have reduced wastage for the lead time has been reduced from 300 to 60 days.

[PFSA informant]

USAID’s Strengthening Pharmaceutical Systems Project also provides technical support

PFSA also has received technical assistance from the USAID-funded Strengthening Pharmaceutical Systems Project (SPS), which replaced the Rational Pharmaceutical Management Plus Program (RPM Plus). SPS has provided technical assistance in a number of areas, including closely working with Ethiopia’s Drug Administration and Control Authority in strengthening the national drug regulatory system, promoting rational drug use and quality assurance of drugs, and improving pharmaceutical services.

SPS also focuses on pre-service training of pharmacy students in ARV dispensing and ethical practices, as well as in quality assurance and quality laboratory management, promoting public-private partnerships, establishing and strengthening drug therapeutic committees in hospitals, and strengthening drug information systems. According to a key informant, SPS/MSH and PFSA are also working on effective use of financing mechanisms, including cost recovery, insurance and reimbursement schemes, pharmacy benefit programs, incentive approaches, and pricing mechanisms to enhance access to medicines.

6.2 PROGRESS IN THE SUPPLY OF PHARMACEUTICALS AND COMMODITIES AT THE COUNTRY LEVEL

A recent evaluation of the role of the USAID-sponsored SPS and SCMS projects in improving the supply chain in Ethiopia found the projects had made substantial progress. In only a few years, the ARV patient load increased from a few thousand to 150,000. At the same time, there have been no reports of substantial ARV drug stock-outs, and the level of ARV expiry is relatively low. Other commodities needed for the scale-up of HIV/AIDS services show improved availability, including test kits, laboratory supplies, and drugs for OIs (Hawkins et al. 2009). The authors also concluded that the SPS and SCMS projects have supported the development of the overall national supply and pharmaceutical management systems. For example, SCMS and its predecessor project, RPM Plus, have supported needed infrastructure improvements such as the renovation of warehouses, stores, and other spaces, as well as the provision of vehicles, cold chain equipment, computers, and power supply and stabilization apparatus. One area of concern, however, is the sustainability of the improvements should GHI support be withdrawn in the future.

Improvement in procurement, storage, and distribution

Improvements in FMOH's capacity to procure, store, and distribute pharmaceuticals and supplies are also evidenced by the FMOH's annual performance review (FMOH 2009). It was indicated that the FMOH along with its development partners was able to perform the following in 2008/2009.

- **Warehouse/hub sites.** Out of the HSDP target of 25 warehouses/hubs, 18 sites had been identified and secured in 2008/2009; designs were completed and ready for constructing warehouses/hubs. PFSA reported to have ten functioning hubs in the country.
- **Capitalization.** Substantial progress was made in the capitalization of PFSA, due to support from the GAVI Alliance, GF, and Protection of Basic Services Project.
- **Logistics.** 7,000 health post kits have been procured and are being repackaged. Medical equipment for 2,299 health centers has been procured out of which the medical equipment for 1,023 has already arrived at the port of Djibouti. Distribution of medical equipment for 976 health centers has commenced. Delivery for another 300 health centers is being processed.

Key informants at the regional and federal levels confirmed the improved availability of drugs and medical technologies:

We do not have shortage of test kits and ART. There is no shortage of reagents. The GF purchases rapid test kits and first-line adult ART, PEPFAR reagents, second-line adult and pediatric ART.

[FMOH informant]

HIV/AIDS, TB, and malaria testing and treatment have improved through this expedited supply chain:

With the GF we are purchasing drugs in HIV/AIDS such as antiretroviral drugs, chemicals, and laboratory equipment for testing CD count, hematology, blood chemistry, and malaria and TB drugs and commodities. With the GF we are able to improve TB detection – we have reached 40 percent detection rate and we plan to reach 60 percent by the end of the HSDP III. WHO provides technical support for the expansion of TB services at the community level through the use of community DOTS.

[Regional informant]

6.3 AVAILABILITY OF PHARMACEUTICALS AND COMMODITIES AT THE FACILITY LEVEL

Table 6.1 presents changes in an index of the availability of essential drugs and supplies reported to be continuously available at public health facilities in the last six months. Dichotomous measures of 18 essential drugs and supplies were developed and then converted into a percentile to develop the index, as described in Section 3. The average index on the availability of common essential drugs and supplies was 73 percentage points in 2003/04. This increased marginally by 1 percentage point in 2009. Overall 90 percent of health centers had all essential drugs available as compared to 65 percent of health posts.

TABLE 6.1. PERCENT DISTRIBUTION OF PUBLIC HEALTH FACILITIES BY THE INDEX MEASURING THE AVAILABILITY OF ESSENTIAL DRUGS AND SUPPLIES

Index on availability of common essential drugs and supplies	Percentage of health facilities with index in the range			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Index 30% and below	0.00	0	2.3	2.3
Index 31 to 70%	30.23	37.20	27.90	-2.1
Index 71 to 100%	69.76	62.80	69.76	0.0
Average index	72.99%	72.86%	74.03%	1.04%

Note: All drugs and supplies included in the index are weighted equally.

Drug availability increases for FP; decreases for malaria

Table 6.2 presents the availability of the 19 essential drugs available in health facilities as observed by the data collection team. Almost all public health facilities reported having FP commodities such as the oral pill and injectables, an enormous increase from the year 2003/04. There was also a 34 percent increase in the availability of Nevirapine, the most commonly used prophylaxis to reduce the rate of mother-to-child transmission of HIV. Facilities also showed higher availability of vaccines such as DPT and measles and dilutants, and oral rehydration salts (ORS), and antibiotics such as cotrimoxazole oral for acute respiratory infections (ARIs). The availability of paracetamol, tetracycline eye ointment, bezathine benzyl penicillin injection, and oxytocin decreased. The availability of malaria drugs such as sulphadoxine pyrimethane (SP) and chloroquine oral also declined sharply. This could be attributable to the scale-up of artemisinin-based combination therapy (ACT) or coartem, an alternative malaria prophylaxis that has been distributed nationwide since 2007.

TABLE 6.2. PERCENTAGE OF PUBLIC HEALTH FACILITIES WITH AVAILABILITY OF ESSENTIAL DRUGS AS OBSERVED BY DATA COLLECTOR

Availability of essential drugs and supplies	Percentage of health facilities that currently have drugs available			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Oral pill with estrogen	79.0	72.1	95.3	16.3
Injectable (3 monthly)	65.1	74.5	95.3	30.2
Condom (male)	79.1	81.4	81.4	2.3
DPT	76.7	82.9	86.0	9.3
Measles and dilutant	79.1	83.7	81.4	2.3
Amoxicillan oral	69.8	69.8	65.1	-4.1
Chloroquine oral	81.4	69.8	48.8	-32.6
Cotrimoxazole oral	76.7	79.1	81.4	4.7
Iron with folic acid	72.1	51.2	48.9	-23.2
Mebendazole oral	76.7	69.7	72.1	-4.6
Metronidazole oral (Flagyl)	69.8	81.4	60.4	-9.4
Paracetamol oral	86.0	79.0	74.4	-11.6
SP (Fansidar) oral	83.7	55.8	9.3	-74.4
Oral rehydration salts	72.1	88.4	83.7	11.6
Tetracycline ointment	81.4	67.4	60.5	-20.9

Availability of essential drugs and supplies	Percentage of health facilities that currently have drugs available			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Benzathine benzyl pen inj. (im) or (proc.)	60.5	88.3	58.1	-2.4
Ergometrine/oxytocin injection	62.8	53.5	51.2	-11.6
Nevirapine	7.0	13.9	41.8	34.8
Dextrose and saline	51.2	53.5	58.1	6.9

Key informants from the regional level observed that the linkages between community and health facilities had improved, citing reduced stock-outs of essential drugs as a prime reason:

The linkage between community and health facility has improved in the last two years. The shortage of drugs we faced two years ago is not a problem now. The supply of drugs and OIs as well has improved.

[Regional informant]

Human resources training, lab systems, and technical assistance also ranked high as having helped to improve community outreach:

GF money has been used to build health centers and health posts in Oromia. PEPFAR is also allocating funds for this purpose. Drug supply, documentation, fund management, and health information systems are strengthened. Training of human resource is up with donor funds. The laboratory system is being strengthened as are drug dispensaries in hospitals. We are getting technical assistance from American universities and are playing an important role in improving our health delivery services in HIV/AIDS especially HCT and ART.

[Regional informant]

Drug availability increases for HIV/AIDS and TB, decreases for malaria

Table 6.3 presents changes in the availability of drugs for focal diseases (HIV/AIDS, TB, malaria) from 2003/04 to 2009. For example, there was a 23.2 percent increase in the percentage of health facilities that reported having HIV/AIDS drugs and an increase of 4.6 percent for the availability of TB drugs. However, the availability of malaria drugs declined by 6.9 percentage points, possibly because of the change in malaria prophylaxis from SP and chloroquine oral to ACT in 2007.

TABLE 6.3. PERCENTAGE OF PUBLIC HEALTH FACILITIES IN WHICH FOCAL DISEASE DRUGS ARE AVAILABLE, THOUGH THEY MAY OR MAY NOT BE RECEIVED WITH REGULAR SUPPLY OF DRUGS

Drugs and supplies for focal diseases	Percentage of health facilities with availability of specific drugs			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Percentage of health facilities with availability of HIV/AIDS drugs	25.6	14.0	48.8	23.2
Percentage of health facilities with availability of TB drugs	88.4	95.3	93.0	4.6
Percentage of health facilities with availability of malaria drugs	95.3	90.7	88.3	-6.9

A key informant from the regional level confirmed the major improvement the availability of drugs for focal diseases and cited an accompanying uptick in TB detection rates:

The GF is used in the purchase of drugs in HIV/AIDS such as antiretroviral drugs, chemicals, and laboratory equipment for testing HIV, CD count, hematology, blood chemistry, and malaria and TB drugs and commodities. With the GF we are able to improve in TB detection and we have reached 40 percent detection rate and we plan to reach 60 percent by the end of the HSDP III. WHO gives technical support in the expansion of TB services to community level through the use of community DOTS.

[Regional informant]

6.4 LOGISTICS AT THE FACILITY LEVEL

Table 6.4 presents data on the logistics of supplying essential commodities and drugs to our panel of public primary health facilities. Between 2003/04 and 2009, there was a marked (20 percent) increase in the percentage of public facilities that report determining their own needs when ordering drugs. There was also a reduction of 18.4 percentage points in health facilities that report having had their drugs and supplies needs determined elsewhere.

TABLE 6.4. LOGISTICS SYSTEM FOR DRUGS AND ESSENTIAL SUPPLIES FOLLOWED BY PUBLIC HEALTH FACILITIES

Indicators on logistic system for drugs and supplies	Drug source and management in health facilities			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Percentage of health facilities that determine their own needs and order for drugs	55.8	62.8	76.7	20.9
Percentage of health facilities in which needs are determined elsewhere	39.5	32.6	20.9	-18.6
Percentage of health facilities that get their drugs from the government	100.0	97.7	97.7	-2.3
Percentage of health facilities that get their drugs from private sources	7.0	16.3	34.9	27.9

Notably, the percentage of health facilities procuring drugs from private sources also increased greatly between 2003/04 and 2009, up 27.9 percent to 34.9 percent overall. These data clearly indicate the gradual decentralization of Ethiopia's program operations and health system, such that workers at facilities at the lower level are trained in commodities management and are now able to determine their own needs and order them from the appropriate sources.

Key informants at the woreda level explained that drug availability increasing parallels needs at the facility level:

Drugs are supplied by the government; as a result there is no shortage and difference among diseases and their drug supplies. The best thing regarding supplies is to have direct communication /phone relationship with the suppliers.

[Woreda informant]

Using facility revenue has added to the efficiency of drug procurement:

In addition to the budget from the government, we are able to use our internal revenue. This helped as a lot in medicine (drug) procurement because we can do it here and also it prevented drug shortage.

[Woreda informant]

6.5 SUMMARY

Over the period 2003/04 to 2009, Ethiopia's supply chains for pharmaceuticals and medical supplies have been strengthened thanks to the formation of PFSA and to technical assistance and funding from GHIs such as the GF and PEPFAR. This technical assistance has allowed PFSA to improve its capacity to identify, order, procure, and distribute drugs, even as GHI-supported projects and global agencies such as UNICEF continue to have key procurement, storage, and distribution responsibilities. The building of hubs that are closer to health facilities has reduced travel time and waste and improved the quality and efficiency of the services. There were no reported shortages of essential drugs in the last year.

The presence of the PFSA has also encouraged private investors to invest in the production of pharmaceuticals. EHNRI with direct support from CDC is strengthening the laboratory capacity in the country. Significant funding has been already allocated to this health system building block from the GF and PEPFAR. Nevertheless, this area of the health system still needs substantially more technical and financial support from development partners.

7. FINDINGS: SERVICE DELIVERY

This section looks at changes in the availability and utilization of focal and non-focal health services. It also explores changes in a number of structural determinants of the quality of service delivery – the infrastructure of health facilities, the availability of laboratory services and equipment, the availability of clinical and referral guidelines – and how these have been affected by the GHIs between the years 2003/04 and 2009.

7.1 AVAILABILITY AND DISTRIBUTION OF FACILITIES AND SERVICES

According to the 2008/09 Annual Performance Report of the HSDP III (FMOH 2009), the distribution of health facilities in Ethiopia does not correspond with the population distribution and disease pattern. To achieve the goal of universal coverage, the HSDP targeted 3,200 health centers and 15,022 health posts to be built by the end of the period 2009/10.

7.1.1 INFRASTRUCTURE CONCERNS: CONSTRUCTION AND RENOVATION OF HEALTH FACILITIES

Under the HSDP III, the following principles inform the goal of strengthening the infrastructure of health facilities in Ethiopia:

1. **Construction.** Construct new health facilities or expand existing facilities based on the prevalence of diseases and population density. The construction should be supported by the active involvement of the society and based on transparent data.
2. **Administration.** Define the responsible implementing bodies at each level to ensure uniform procurement, utilization, and maintenance of medical equipment.
3. **Maintenance.** Train and deploy equipment maintenance technicians on a permanent basis, so that there are guidelines on the upkeep of donated equipment.
4. **Technology.** Satisfy the needs of clients by enhancing the broad application of health information technology in the health sector and by establishing modern and efficient systems down to the grassroots level.

The expansion and renovation of health centers and hospitals are underway on a large scale to ensure that every member of society can access primary care within 30 minutes of travel time. In addition to the government, the GF and PEPFAR have also supported infrastructure capacity building, the purchase and distribution of ARVs and related commodities, and delivery of clinical and laboratory services (EHNRI 2008).

A regional key informant gave particular credit to the GF for bolstering both supply availability and health systems infrastructure:

The GF has been used to not only buy drugs give care and support awareness-raising, but also to build additional health facilities. It is a key fund for strengthening health systems. It is making health services accessible to millions of people. With the GF we were able to construct 349 health centers. This is double the number of health centers that existed before the GF. We were also able to improve drug and commodity supply and strengthen laboratory services by equipping facilities with lab equipment.
[Regional informant]

However, some construction goals remain unreachd. According to the Annual Review Meeting (FMOH, 2009) the following construction targets were achieved in that year: 617 health centers were built. Added to the 721 health centers existing in early 2008, the year's construction gave Ethiopia a total of 1,338 health centers countrywide by the end of 2008/09. Another 1,247 health centers were under construction, for a total of 2,585 health centers either available or under construction. Though the number of health posts more than doubled, from 6,191 in 2006 to 12,488 in 2008/09, this did not meet the HSDP III target of 15,022 health posts.

Some key informants complained that the construction of health facilities was slower than anticipated, citing funding shortages as the primary constraint:

Our major gap is in the construction of facilities. We do not use donor funds to construct facilities in Addis. We have planned to construct 25 health centers with government budget and we still have shortage of funds to implement our plan. [Regional informant]

Addis has serious shortage of health centers. We have only 24 and we need 39. We want to build 15 and have the budget for one excluding other costs. We cannot use donor funds for the construction of facilities, although other regions are doing so with the GF. We need to have the same opportunity. Our health coverage is 18 percent considering the number of public facilities where one public health facility is related to 75,000.
[FMOH informant, Addis Ababa]

7.1.2 AVAILABILITY OF SERVICES FOR FOCAL DISEASES

Nationally representative population-based surveys (described below) indicate that the availability of health services has increased substantially over the period from 2000 to 2008, both for focal diseases and for non-focal services. Federal-, regional-, and woreda-level informants, as well as GHI representatives, cited the positive influence of the GHIs on HIV/AIDS, TB, and malaria services. For example, a key informant from a woreda health office cited the lack of fees and the greater accessibility of treatment, particularly home care, as major improvements to focal disease treatment:

Since the scaling-up program, there is great change. Previously HIV/AIDS treatment was provided with fees and charges and was difficult to get. But now, it is free and is easily accessible. At the moment there is scale-up in PMTCT service and these services have become more accessible. If it is not accessible, there is a linkage to other facilities and then the client gets the treatment based on the treatment guideline. In the early days, TB treatment was very difficult to get. First it was delivered only at government-owned hospitals, as a result a patient

was forced to leave his home for 15 days and travel 60 kms to get the service. But now the service is available at his home because there is a professional health care professional out there. At the moment RDT [rapid diagnostic test, an instrument used to test for malaria without laboratory set up] is available at each kebele in the woreda. Moreover, there is the availability of coartem at each kebele in the woreda. Rural residents are not forced to leave their job, face trouble, and face economic crisis.
[Woreda informant]

HIV/AIDS treatment shows greatest expansion among focal diseases

This expansion of services has been most notable for HIV/AIDS services and supplies. As shown in Table 7.1, 95 percent of all public health facilities were offering diagnosis, treatment, and support services for HIV and STIs in 2009, up nearly 5 percentage points from 2003/04. The percentage of public facilities offering HCT services increased by almost 21 percentage points, and the percentage offering PMTCT counseling and palliative management also increased substantially. Almost 40 percent of public health facilities were offering ART for HIV-positive patients as compared with no public health facilities doing so in 2003/04.

TABLE 7.1. PERCENTAGE OF PUBLIC HEALTH FACILITIES PROVIDING FOCAL DISEASE HEALTH SERVICES BY TYPE OF SERVICE, 2003/04–2009

Focal disease services	Percentage of facilities offering services in 2003/04 (n=43)	Percentage of facilities offering services in 2006 (n=43)	Percentage of facilities offering services in 2009 (n=43)	Change in percentage, 2003/04–2009
Diagnosis, treatment, and supportive services for HIV/STI	90.7	90.7	95.3	4.6
HCT services	44.2	46.5	65.1	20.9
Counseling for PMTCT (HIV/AIDS)	18.7	34.9	60.5	41.8
Palliative management	11.6	16.3	34.9	23.3
Diagnosis and treatment of TB	55.8	65.1	60.5	4.7
Concurrent infection diagnosis and management of HIV/AIDS	48.9	62.8	58.2	9.3
PMTCT treatment	9.3	20.9	55.8	46.5
Psychosocial services	37.3	18.6	20.9	-16.4
Counseling/training for home care	32.6	13.9	25.6	-7.0
ART	0	0	39.5	39.5

Not shown in the table, the percentage of private health facilities offering HCT services and PMTCT counseling increased by 20.0 and 28.6 percentage points, respectively.

TB treatment services approach universal coverage

There has also been an improvement in the accessibility and treatment of TB services since 2003/04. As Table 7.1 shows, the percentage of facilities offering TB diagnosis and treatment has increased 4.7 percent, about the same rate as concurrent diagnosis and treatment for HIV/AIDS. On the downside, counseling and training for home care, along with psychosocial services for TB support, dropped considerably over the period.

According to the Impact Evaluation of Ethiopia's National Response to HIV/AIDS, Tuberculosis, and Malaria (EHNRI 2008a), following the integration and decentralization of TB control program activities into general health services, the DOTS strategy was expanded to all regions, zones, and most woredas between 1997 and 2007. Specifically, the number of zones in which the DOTS strategy was introduced increased from 39 percent to 100 percent and the geographical coverage at the woreda level increased from 50 to 90 percent (EHNRI 2008a). In 2008, the geographic coverage of TB services was almost universal.

A key informant from the Amhara region discussed how the GF had strengthened service delivery, particularly for TB.

Amhara region has improved in its access to primary health care services and the GF played a major role. HIV/AIDS, TB, and malaria are major health threats and the GF has made services in these three major causes of mortality and morbidity possible. ... TB was a problem. Now our TB service has improved through community DOTS and mass mobilization using the HEW... The HEP is doing well in basic health services and is supported with GF monies.
[Regional informant]

Malaria prevention and control ramped up through GF funding

Funding from the GF has had a particularly big impact on malaria prevention and control. In 2005, the FMOH developed a five-year national strategy by which areas that were considered "malarious" were targeted to receive key malaria control interventions, including ITNs, indoor residual spraying of houses with insecticide, and RDTs coupled with prompt and effective case management with ACT.

The strategy outlined an ambitious national goal of 100 percent household ITN coverage in malarious areas with a mean of two ITNs per household through distribution of about 20 million ITNs by the end of 2007 (Jima et al. 2010). Ethiopia benefited greatly from two rounds of GF funding: Round 2 (2002–08; total budget \$73 million) and Round 5 (2005–10; total budget \$140 million). With this support as well as that from other in-country malaria stakeholders, a total of 17.2 million ITNs, 12.5 million RDTs, and 15.4 million ACT treatment courses were distributed to malarious areas between 2003/04 and 2007 (Jima et al. 2010, FMOH records).

Oromia is one of the regions that were classified as malaria endemic. With GF and PMI support, the situation was reversed by 2009, according to a key informant:

Remarkable achievements have been made in malaria prevention and treatment. We do not have any malaria epidemic, and if any pocket area shows we have malaria, we have developed the capacity to easily control it. In fact, we are thinking of malaria eradication. The GF has made a huge impact in malaria prevention and control. All households in malaria

areas have bed nets and the drug coartem is effective in treating those infected with the parasite. The work of HEW has enabled us to reach every household in the region. We do not have shortage of drugs or bed nets.

[Regional policy informant]

7.2 AVAILABILITY AND UTILIZATION OF SERVICES FOR NON-FOCAL HEALTH ISSUES

SWEF study finds increased availability of services for non-focal health issues

Some informants observed that GHI funding for focal diseases seems to be having a positive impact on non-focal health areas.

We use the MBB strategy (managing budget for bottle necks) to help us with health services that are not rich in donor funding. Because the GHIs are focusing on health system strengthening activities, child and maternal health services including FP are also being strengthened. In a district we are upgrading the health center to the level of a district hospital so that all necessary surgical services will be available. This would include emergency services, ambulances, specialists in obstetrics and gynecology so that the district hospital can provide caesarian and other obstetric services to reduce maternal mortality, especially delivery-related complications.

[Woreda informant]

As seen in Table 7.2, availability of some non-focal health services held steady across the three SWEF studies, but this is because coverage was already virtually universal for these services – sick child consultations, and FP and ANC services – in 2003/04. Provision of other services expanded significantly by 2009. As the table shows, the percentage of health facilities offering services for maternal health complications such as post-partum hemorrhage, pre-eclampsia, and assisted vaginal delivery for prolonged labor increased by 19 to 21 percentage points. There was an increase of 4.6 percentage points in public health facilities that could provide vacuum delivery, from 25.6 percent to 30 percent. Roughly 10 percent of health facilities could perform caesarian section deliveries in 2009, compared with no facilities in 2003/04.

TABLE 7.2 PERCENTAGE OF PUBLIC HEALTH FACILITIES PROVIDING NON-FOCAL HEALTH SERVICES BY TYPE OF SERVICE, 2003/04–2009

Non-focal disease health services	Percentage of facilities offering services in 2003/04 (n=43)	Percentage of facilities offering services in 2006 (n=43)	Percentage of facilities offering services in 2009 (n=43)	Change in percentage, 2003/04–2009
Consultation for sick child	97.7	100	100	2.3
Child immunization	97.7	97.7	100	2.3
Growth monitoring	93.0	95.3	97.7	4.7
FP services	100	100	100	0
ANC services	97.7	100	97.7	0
Delivery services	83.7	76.7	83.7	0
Treatment of postpartum hemorrhage	41.9	44.2	60.5	18.6

Non-focal disease health services	Percentage of facilities offering services in 2003/04 (n=43)	Percentage of facilities offering services in 2006 (n=43)	Percentage of facilities offering services in 2009 (n=43)	Change in percentage, 2003/04–2009
Treatment of hypertension	30.2	34.9	51.2	21.0
Treatment of pre-eclampsia/eclampsia	18.6	23.3	39.5	20.9
Removal of retained placenta	69.8	55.8	60.5	-9.3
Vacuum delivery	25.6	27.9	30.2	4.6
Assisted vaginal delivery for prolonged labor	27.9	30.2	46.5	18.6
Caesarian section	0	0	9.3	9.3

This expansion in the public sector was offset by a slight decrease in the percentage of private sector facilities offering MCH services (results not shown).

Global Fund's Five-Year Evaluation shows clear increase in utilization of MCH services

A review of the trends in MCH services from population-based surveys such as the Ethiopia Demographic and Health Surveys (EDHSs) from 2000 and 2005 (Central Statistical Authority and ORC Macro 2001 and 2006, respectively), and the household survey conducted as part of the Global Fund Five-Year Evaluation in 2008 (EHNRI 2008a) also shows a considerable increase in the utilization of these services.

As indicated in Table 7.3, the percentage of children fully immunized by the age of 12 months increased only marginally between 2005 and 2008, by 3 percentage points. The percentages of children with diarrhea who were given ORS (2000–2008) and the percentage of children with ARI or fever taken to a health facility increased substantially.

Even more notable, Table 7.3 also demonstrates that the percentage of women who attended at least one ANC visit between 2000 and 2008 almost doubled, rising from 26.7 percent to 48.0 percent. Similarly, there was a 15 percentage point increase for women whose last delivery was assisted by trained personnel. The huge increase in MCH service utilization between 2005 and 2008 could be attributed in part to the differences in sampling design followed by the EDHS and the Ethiopia District Comprehensive Assessment (EDCA). The EDCA was employed as a key data collection and analysis instrument of the Global Fund's Five-Year Evaluation. The EDCA survey was designed to be district representative (population-based) covering the three focal diseases.

TABLE 7.3. UTILIZATION OF CHILD HEALTH AND REPRODUCTIVE HEALTH SERVICES IN ETHIOPIA, 2000–2009

Indicators	2000 EDHS	2005 EDHS	2008 EDCA	WHO Africa Region (2010)
Percentage of children who received all vaccines (BCG, DPT, Polio 3, measles) by 12 months of age	14.3	20.4	23.0	-
Percentage of children with diarrhea who received ORS or RHS	18.6	27.5	40.4	-
Percentage of children with ARI or fever taken to a health facility	15.8	18.7	39.1	-
Percentage of currently married women who are using any contraceptive method	8.1	14.7	34.1	23.7
Percentage of currently married women who are using a modern contraceptive method	6.3	13.9	32.9	-

Indicators	2000 EDHS	2005 EDHS	2008 EDCA	WHO Africa Region (2010)
Percentage of women making at least 1 ANC visit	26.7	28.0	48.0	73.0
Percentage of women whose last delivery was assisted by a trained personnel	5.6	5.8	21.1	47.0
Percentage of women who last delivery was in a health facility	5.0	5.3	19.3	-

Sources: DHS Stat Compiler (2010), WHO (2010), EHNRI (2008a)

Key GHI and regional informants were very positive about the expanded capacity of facilities to treat non-focal health issues.

Effects on non-focal diseases such as MCH as well as RH and FP have been positive, because the capacity of the health sector and the health system has improved. There are now focused activities to equally consider RH and FP along with HIV/AIDS. Round 7 does this. In Round 9 the focus is on RH, and child and maternal health to enhance the activities in these services areas in order to achieve the MDGs.

[GHI Informant]

One regional informant thought that decentralization of non-focal disease services was more successful than decentralization of focal disease treatments:

In the Somali region, FP and MCH services are more decentralized than focal diseases, particularly TB and HIV/AIDS. FP and MCH services are delivered at the health post level. But TB and HIV/AIDS are not as such. We have only 45 facilities (both government and private for-profit) providing TB services, 31 of which provide both treatment and diagnostic service for TB and 14 of which provide treatment for TB only. We do have five government facilities and three private facilities that are providing HCT services.

[Regional informant]

In addition, a key informant from the Oromia region felt that more attention was needed on nutrition and water and sanitation activities as a means to support prevention of focal and non-focal diseases:

The challenges of meeting the MDGs are that both child and maternal health depend on nutrition and availability of clean water in addition to health services. We can improve the health delivery services in child and maternal health and it is being done through the health extension program. However, we need to improve on the availability of food and clean water. We also need to improve the referral system and that is dependent on good infrastructure such as transportation services so that mothers could deliver at health facilities including those that need surgical intervention. We need to do more work in TB, but our success in malaria is extremely exciting.

[Regional informant]

7.3 QUALITY OF FACILITIES AND SUPPLIES

As indicated in the section above, there has been some improvement in the overall infrastructure of health facilities in Ethiopia since 2003/04. The following sections describe changes in the structural determinants of the quality of care such as laboratory services and equipment and the availability of health services in government health facilities between 2003/04 and 2009.

7.3.1 AVAILABILITY OF BASIC RESOURCES

Table 7.4 shows sample results based on an index measuring whether health facilities have four basic resources available at the health facility. These include electricity, a regular water source, a functioning toilet for clients, and a working phone or short wave radio. The average level for the index was 72.1 percent in 2009, up by 9.3 percentage points from 2003/04. This shows that basic infrastructure has improved at the public primary health facilities in the study, with more facilities reporting a higher health infrastructure index in 2009 than in 2003/04.

TABLE 7.4. INDEX MEASURING BASIC INFRASTRUCTURE AND RESOURCES IN ALL PUBLIC PRIMARY HEALTH CARE FACILITIES, 2003/04–2009

Health Infrastructure Index	Percentage of health facilities with infrastructure			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
30% and below	7.0	2.3	4.7	-2.3
31-70%	41.9	41.8	37.3	-4.6
71-100%	51.2	55.8	58.2	7.0
Average index	62.8%	70.5%	72.1%	9.3%

Increased number of facilities offering lab services demonstrates infrastructure emphasis

According to the 2008/09 HSDP III Annual Performance Review (FMOH 2009), capacity building in terms of laboratory equipment and instruments is an essential component of the National Laboratory Master Plan. Regional laboratories were well equipped in the plan, and laboratory technicians did training of trainers so that they could build the capacity of other technicians at the woreda and district levels. In addition, quality assurance guidelines were put in place and were being followed by all EHNRI laboratories.

Table 7.5 shows the percentage of facilities with laboratory services available for health centers and health posts and clinics. The percentage of health clinic and health posts offering lab services increased greatly, from 8.7 percent in 2003/04 to 52.2 percent in 2009 – an increase of 43.5 percent – reflecting the focus on laboratory facilities in that period.

TABLE 7.5. PERCENTAGE OF PUBLIC HEALTH CARE FACILITIES LABORATORY SERVICES BY TYPE OF FACILITY, 2003/04–2009

Type of health facility performing lab tests	2003/04	2006	2009	Change in percentage of facilities, 2003/04–2009
Percentage of health centers performing lab tests	100.0	100.0	100.0	0.0
Percentage of health clinics/posts performing lab tests	8.7	8.7	52.2	43.5
All facilities	51.2	51.2	74.4	23.2

A key informant working in an international NGO supported by PEPFAR stressed the importance of building a solid health infrastructure both through human and technological resources:

Facility care and support services start with the training of health personnel working in HCT, ART, and PMTCT; they should include how to handle patients and use laboratory facilities including the administration of drugs through clinical mentoring. Capacity building in the management of PICT [provider-initiated counseling and testing], TB/HIV, PMTCT, and use of comprehensive lab (TB, malaria, HIV/AIDS, DNAPCT testing (identification of virus) are given. Facilities are also strengthened with furniture such as shelves, chairs, and the like. Performance-based contracting is done with facilities and woredas. More support is given to those that do well. There is also FFSDP [fully functional service delivery pact], which requires facilities and MSH to share responsibilities and be able to meet those responsibilities as per the agreement. MSH tries to ensure that there is a continuum of care and support, and integrated, linked, and monitored service offered on the basis of the national strategic information system, particularly monitoring and follow-up and appraisal of quality of services. [GHI informant, international NGO]

Basic lab tests also increase significantly

Basic lab tests are also crucial to building capacity. Table 7.6 provides information on the percentage of facilities offering basic lab tests in all public health care facilities. It was created by aggregating the number of basic lab tests that were available in a health facility and converting the number into a percentile score, as described in Section 3. As shown in the table, the average index of facilities offering lab tests increased 17.5 percentage points between 2003/04 and 2009. In 2009, 41.3 percent of health facilities were offering lab tests, compared with 23.8 percent in 2003/04. This is a significant increase and may result from the effect of GHIs on the availability of lab tests in public health facilities. The increase in the percentage of lab tests offered was much higher in health posts and clinics versus health centers. In private health facilities, the overall average index was 61 percent in 2009, a 10.5 percent increase since 2003/04 (results not shown).

TABLE 7.6. INDEX MEASURING THE PERCENTAGE OF BASIC LAB TESTS OFFERED: ALL PUBLIC HEALTH CARE FACILITIES, 2003/04–2009

Lab Test Availability Index	Percentage of health facilities with lab tests			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Index 30% and below	53.5	51.2	27.9	-25.6
Index 31 to 70%	46.5	48.9	69.9	23.4
Index 71 to 100%	0.0	0.0	2.3	2.3
Average index	23.8%	24.0%	41.3%	17.5%

7.3.2 AVAILABILITY OF EQUIPMENT SHOWS LITTLE CHANGE

Also key to the scale-up of health services is the availability of equipment. In the 2008/09 HSDP III Annual Performance Review (FMOH 2008c), the government procured and distributed equipment for 1,023 centers of the targeted for 1,290 health centers in 2008, a coverage target of 79.3 percent. Based on that report, the PFSA procured equipment worth 506.29 million Birr for 2,299 health centers. The

kit packaging for 976 health centers was completed in 2008 and distribution of the medical equipment has begun.

In Table 7.7, the index measuring the availability of outpatient equipment in public health facilities shows that there was practically no change in the availability of essential MCH and FP equipment between 2003/04 and 2009. In both years, the average availability of equipment was 80 percent across all the facilities. Disaggregated by type of health facility, health clinics and health posts showed an increase in the availability of outpatient equipment of 3.6 percent points, while the average index decreased in health centers by 5.5 percent points between 2003/04 and 2009 (results not shown). This is surprising, given the FMOH emphasis on equipment procurement.

TABLE 7.7. AVAILABILITY OF OUTPATIENT EQUIPMENT IN PUBLIC HEALTH CARE FACILITIES, 2003/04–2009

MCH Outpatient Equipment Availability Index	Percentage of health facilities with equipment availability index in the range			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
Index 30% and below	2.3	0.0	0.0	-2.3
Index 31 to 70%	16.4	11.6	18.6	2.2
Index 71 to 100%	81.5	88.4	81.4	-0.1
Average index	80.8%	86.5%	80.1%	-0.7%

7.3.3 AVAILABILITY OF CLINICAL PRACTICE GUIDELINES INCREASED FOR FOCAL AND NON-FOCAL SERVICES

The increased availability of guidelines at health facilities indicates the government’s seriousness in improving the quality of care for both focal and non-focal diseases. Table 7.8 shows that there was an increase in the percentage of public health facilities with guidelines and protocols for both focal and non-focal diseases between 2003/04 and 2009. In 2009, almost 70 percent of health facilities had Integrated Management of Childhood Illness (IMCI) protocols compared with 28 percent in 2003/04. There was a similarly large increase in the availability of clinical guidelines and protocols for the treatment of STIs and PMTCT in public health facilities between 2003/04 and 2009.

TABLE 7.8. PERCENTAGE OF PUBLIC HEALTH CARE FACILITIES WITH AVAILABILITY OF BASIC PROTOCOLS, 2003/04–2009

Protocols and guidelines	Percentage of health facilities having protocols/guidelines			Change, 2003/04–2009
	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	
IMCI protocols	28.0	39.6	69.8	41.8
Protocols for syndromic treatment of STIs	27.9	34.9	55.9	28.0
Protocols for clinical treatment of STIs	23.2	39.6	53.5	30.3
Protocols for treatment of PMTCT	11.6	23.2	55.8	44.2

The increase lab and service provision capacity could be attributed in part to the increase in health sector funding going to public health facilities in 2007/08, when facilities received 34 percent of national health expenditure (FMOH 2010). In addition, health sector financing reforms have meant that facilities

are able to use their own revenue streams, including those from user fees, and apply that revenue to the services most needed in their community.

7.4 ASSESSMENT OF FEES ALMOST UNIVERSAL

The Ethiopian Council of Ministers approved a health care financing strategy in 1998 aimed at increasing availability of health care resources in a way that would improve equity, sustainability, and quality of care (FMOH 2010). Reforms included revising user fees charged at government health facilities, rationalizing and systematizing rules for fee waivers, retaining the collected fees at the facility, and using that revenue to improve quality. These reforms are being implemented in almost all regions of the country.

Findings from the Impact Evaluation of Ethiopia’s National Response to HIV/AIDS, TB, and Malaria (EHNRI 2008b) showed that an average household in Ethiopia spent 21.1 Birr on inpatient care and 15.8 Birr on outpatient services in the 12 months preceding their survey. In addition, households spent 9.3 Birr on mandatory health insurance premiums and prepaid plans, 4.3 Birr on health-related items, and 1.3 Birr on voluntary health insurance. Average inpatient expenditure differed by region, being highest in Addis Ababa and lowest in the Gambela region. Wealthier households were much more likely to spend more on inpatient care than were households from the poorest wealth quintile.

Results from this final round of SWEF data collection indicate that user fees are universally charged across all health facilities that make up the panel. Almost all public health facilities charge fees for adult or child curative services, though the percentage of public health facilities that do so declined slightly in 2009, as Table 7.9 shows.

TABLE 7.9 PERCENTAGE OF PUBLIC HEALTH CARE FACILITIES CHARGING FEES FOR ADULT OR CHILD CURATIVE SERVICES, 2003/04–2009

User fees	2003/04 (n=43)	2006 (n=43)	2009 (n=43)	Change, 2003/04–2009
Percentage of facilities charging for child or adult consultation services	100	100	93.0	-7.0

7.5 SUMMARY

GHIs have played an important role in scaling up and improving access to primary health care services in Ethiopia between 2003/04 and 2009. Health infrastructure has improved, as a large number of health facilities have been built and are better equipped than only five years ago. HIV/AIDS services have been scaled up and the facilities offering testing, counseling, and ART have increased. The GHIs have also had a great impact on the prevention of malaria, and treatment of both TB and malaria. The results of this study suggest that there may have been indirect positive impacts on a number of structural aspects of service quality at the primary health care level. This is consistent with the finding that the use of MCH services has increased over the last decade. In spite of these improvements, however, the soaring prevalence of communicable diseases and high infant and maternal mortality rates continue to remain a big challenge for the health sector.

8. DISCUSSION AND RECOMMENDATIONS

Ethiopia, a low-income country with difficult topography and poor infrastructure, has embarked on an ambitious strategy to improve health service delivery in terms of both access and quality. Despite the enormous health challenges, GHIs are making a significant contribution to HSS and making progress towards the health MDGs.

8.1 DESCRIPTIVE STUDY DESIGN APPLIES MIXED-METHODS APPROACH

The data presented in this paper are descriptive in nature and based on a mixed-methods study design. Empirical data were collected from a panel of primary health facilities at three points in time – 2003/04, 2006, and 2009 – to assess changes in the readiness to provide both focal and non-focal services at the primary care level. The empirical data were supplemented with information collected through in-depth interviews with stakeholders at the national, regional, and woreda levels and through a review of documents and reports. The focus of the first two rounds of the study was primarily to understand the system-wide effects of the Global Fund. In the third round, the focus has been broadened to assess the overall effects of GHIs, including the GF, PEPFAR, and MAP, on policy processes, human resources, procurement and logistics systems, and service delivery at both the national and local levels. The study was guided by a conceptual framework of the potential effects of GHIs on the health systems of recipient countries (Bennett and Fairbank 2003).

8.2 UNPRECEDENTED AID FUNDING RELIES HEAVILY ON OUTSIDE DONOR FINANCING

In Ethiopia, as in many sub-Saharan African countries, GHIs contribute funds to combat HIV/AIDS, TB, and malaria in amounts not previously seen. Indeed, the most recent National Health Accounts, carried out for the year 2007/2008, found that activities to fight focal diseases in Ethiopia are highly reliant on donor financing (FMOH 2010). For example, for HIV/AIDS, 84 percent of all funding, including monies spent by households, the government, and other entities, has come from international donors and other sources outside of the country. Moreover, spending for HIV/AIDS accounted for more than 20 percent of total spending in the health sector. For TB and malaria, the percentage of resources that come from donors and other international sources is lower (25 percent for malaria and 22 percent for TB) than for HIV/AIDS, but substantial nevertheless.

8.3 GOVERNMENT PUSHES AMBITIOUS NEW HEALTH SYSTEM REFORMS

During the same period that the flow of resources from GHIs has increased, the government is in the midst of introducing a number of highly ambitious HSS reforms. The aim is not only to help ensure the sustainability of externally supported health projects, but also to improve the availability and quality of high-priority health care services, and in turn, health outcomes of the population. These services include HIV/AIDS, TB, and malaria services, as well as other types of health care services, particularly MCH services that are essential to achieve the health MDGs.

8.4 OVERALL CAPACITY BUILDING NECESSARY FOR FURTHER SCALE-UP

Our data suggest that both the government and the GHIs are well aware of the need to build overall capacity in Ethiopia's health system in order to further expand health care services. This capacity is essential for improving the functioning of the health system, improving aid effectiveness, and ensuring commitment for all stakeholders. The data also suggest that GHIs have been actively supporting and often leading the HSS initiatives that can potentially improve services beyond those supported by the GHIs. For the most part, these efforts have been undertaken as part of the BPR initiative and are aligned with the government's overall health policy.

8.5 HUMAN RESOURCES, SUPPLY, AND INFORMATION SYSTEMS ARE CENTRAL INITIATIVES

HSS initiatives that GHIs have supported include the following:

- **Human resources.** GHI funds have been used to develop a system-wide strategy to strengthen the health workforce. The HRH strategy has not yet been released, but stakeholders interviewed for this study said that it has elements to expand pre-service training, as well as to deploy, motivate, and monitor the health workforce. GHI funds have also helped to build capacity of the current health workforce through (1) general in-service training and supporting supervision, (2) graduate programs in health informatics, monitoring and evaluation, and hospital management, and (3) supporting the expansion of the health officers and HEW programs. This project has helped to alleviate the health workforce crisis in Ethiopia.
- **Pharmaceutical and commodity supply systems.** GHI funds have helped to reform the pharmaceutical and supply system, with technical assistance to build systems capacity to identify, order, procure, and distribute pharmaceuticals and commodities.
- **Health information systems.** GHI funds have been used to restructure the HMIS. Routine HMIS data, which are integrated to meet the information needs of a broad range of health programs and thus eliminate the need for parallel reporting systems, are intended to inform planning and programming as well as emergency responses at the woreda, regional, and national levels. As discussed earlier, health information system capacity is also being built through training programs, the provision of computers, and other types of information technology support.

8.6 EFFORT CONTINUES TO HARMONIZE GHI/GOVERNMENT ASSISTANCE AND FUNDING

One potential disadvantage of disease-focused GHIs is that they may have the effect of fragmenting already weak health systems in recipient countries (Garrett 2007). The results of the 2003/04 baseline study found that in their early stages, GHI-supported activities were not well coordinated in Ethiopia. However, the information gleaned from in-depth interviews in 2009 showed agreement that government efforts since the baseline, such as publishing the HSDP Harmonization Manual and signing the IHP+ Compact, had improved aid effectiveness and improved coordination of GHI assistance. Many commented that the influx of resources from GHIs in recent years has intensified the government's efforts to improve aid effectiveness.

Harmonization at local levels remains a challenge

On the other hand, many of those interviewed also commented that GHI activities at the local level are not well harmonized with the *woreda* planning process, a relatively new initiative that has been described as the cornerstone of the government's strategy to decentralize the health sector planning process. In addition, bottlenecks with the disbursement of funds from the central level to the local level have continued to impede aid effectiveness. Some respondents attributed both problems to limited managerial and fiscal capacity within the public health sector. Overall, the results suggest that improving planning and budgeting coordination of GHI-supported activities at the local level is an area that remains a significant challenge.

GHI funding has substantially expanded HIV/AIDS, other services

Despite these problems, GHI funding has helped to substantially expand access to life-saving ART as well as other types of HIV/AIDS services for thousands in Ethiopia. In addition, GHI support has led to a drastic reduction of malaria incidence rates in the highest risk areas of Ethiopia. These efforts to scale-up services to fight the focal diseases have not been accompanied by reductions in the use of other priority health care services, as many global health experts feared. This is consistent with findings from population-based surveys that show that the use of MCH services has increased over the last decade and from a previous study that found that Ethiopia has been able to maintain the performance of MCH programs during the GHI-supported scale-up (Assefa et al. 2009).

GHI funding helps staffing, service delivery, health worker motivation in primary health care

The study results based on the panel of primary health facilities also suggest that GHIs may have led to several positive changes at the primary health care level. The introduction of health officers and HEW, new cadres of health workers supported by GHIs, has helped to contribute to overall increases in staffing levels within sample facilities.

The survey results also indicate that the scale-up of focal health care services has not come at the expense of other types of priority health care services. For example, the number of workers that report providing MCH services, as well as the average workloads on those services, increased between 2003/04 and 2009, as did a number of indicators of health worker motivation, including measures of the pride the work performed, self-efficacy, and perceived conscientiousness, as well as the availability of infrastructure, equipment, pharmaceuticals, and laboratory services that are viewed as structural determinants of the quality of MCH services. However, a few important indicators did decline between 2003/04 and 2009, including the average number of physicians on staff and an index measuring health workers' satisfaction with their financial remuneration, which continues to be an important concern.

8.7 STUDY LIMITATIONS

As described in Section 3, the research design for this study contains a few limitations. These include the use of convenience sampling, which may have biased our results in favor of areas that are more urbanized; the inability to include a control group, which does not allow us to empirically attribute changes in indicators of the readiness to provide other types of services to the GHI-supported scale-up of focal services; poor quality of HMIS data within the sample facilities, which prevented us from assessing changes in the number of services provided; and the exclusion of hospitals, which have played a large role in the scale-up of ART.

Still, evidence suggests highly positive role of GHIs

Despite these limitations, the study results support the premise that GHIs have played a positive role not only in the scale-up of services to fight HIV/AIDS, TB and malaria, but also in the overall development of Ethiopia's health system. Ethiopia seems to be taking advantage of the opportunities afforded by the GHIs to strengthen a number of health system areas, including human resources, information systems, and procurement and logistics systems. While the results suggest that some of the GHI-supported HSS initiatives have already influenced the readiness to provide non-focal services at the primary health care level, other broad strategic initiatives, including the strategy to reform HRH and the restructured HMIS, are still in the development or piloting stages. These types of initiatives are likely to be critical to the long-term development of Ethiopia's health system. They have the potential of facilitating the increased availability of a broad range of primary health care services, and they can help improve the likelihood that GHI-supported programs in Ethiopia are sustainable.

8.8 RECOMMENDATIONS

The following recommendations are based on the study findings, and may help shape the way forward to improve aid effectiveness and country ownership:

- **Encourage further FMOH involvement.** The FMOH should be commended for its achievements to date and encouraged to continue its efforts to develop a well-performing health system. Current government efforts as guided by the BPR initiative in improving planning and implementation functions, harmonizing policy and management approaches, strengthening the health sector's health information and logistics and supply systems, and developing a HRH strategy all need to be maintained and strengthened.
- **Increase GHI coordination at local levels.** While the GHIs have largely been successful in coordinating and planning activities to support the national HIV/AIDS plan, further emphasis is needed by GHIs to coordinate and plan activities at the local level in accordance with the woreda health planning process, which is critical to the government's strategy to improve harmonization.
- **Disburse funds directly.** GHIs should work with the government to assess the problems in disbursing GHI funds to those responsible for implementing planned activities, and to help fix those problems. Among the problems that may affect current disbursement practices are stringent GHI reporting requirements, as well as problems in coordination between the Ministries of Finance and Health. Efforts to work within the government system should be accompanied by technical assistance to improve accountability, both internally (internal accountability within the country systems) and externally (funds allocation and disbursement from donors).
- **Emphasize government's role in its own stewardship.** GHIs should continue to develop the government's capacity to fulfill its stewardship function within the health system. This includes

assessing the proper roles of the government and the private sector in the provision of health care services, ensuring that civil society has the opportunity to have a voice in health sector decision making.

- **Coordinate HMIS.** GHIs should continue to work with the government to coordinate government and donor information needs through the restructured HMIS, which is currently being piloted. This will help improve information integration, maximize efficiency in the collection and use of information, and reduce the burden of collecting routine health data.
- **Amass health information for proper decision making.** GHIs should continue to help build human resource capacity to collect, analyze, and use health information for decision making at both the local and national levels. To ensure the information is used for decision making, GHIs should support the government's efforts to introduce performance-based payment mechanisms.
- **Reform pharmaceutical logistics.** GHIs should continue to support the government's efforts to reform the national pharmaceutical logistics system. This will help improve the chances for long-term sustainability of GHI-supported programs as well as have spin-off effects on other areas of the health system.
- **Refine human resources strategies.** GHIs should continue to work with the government to improve public sector human resource policies. As with HMIS, the GHIs have supported the government's efforts to develop a new HRH strategy, which reflects the joint commitment of the government and the GHIs in developing and strengthening the overall health system.
- **Introduce health insurance programs.** In order to reduce financial barriers to service use, GHIs should consider supporting the government's plan to introduce social and community health insurance.
- **Support innovative approaches.** Given the severe human and financial constraints faced by low-income countries, creative solutions are critical to be able to strengthen health systems and accelerate progress towards the MDGs. GHIs need to encourage innovations instead of orthodoxy in dealing with barriers to health service delivery. The HEP is a good example in Ethiopia.
- **Monitor and evaluate health system reforms.** GHIs should support efforts to monitor and evaluate key health systems reforms, in order to determine whether the reforms are achieving their intended objectives and to make mid-course corrections. Reform initiatives that are particularly important to investigate are the HMIS innovations, the strategy to strengthen HRH, and the planned insurance programs.
- **Conduct research on the influence of GHIs on broader governance processes.** Our study has hinted that GHIs are strengthening decentralization and democratization processes that are becoming the pillars for the realization of the government's poverty reduction objectives. This needs further research so that other countries could learn on the effect of broader policy issues and their interaction with GHIs for better and effective service delivery and poverty alleviation.

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