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SUSTAINING HEALTH GAINS – BUILDING SYSTEMS

Health Systems Report to Congress

October | 2009

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USAID
Washington, DC

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Executive Summary

The Omnibus Appropriations Act for 2009 (HR1005, 2009) contains the following statement:

"USAID is directed to provide a report to the Committees on Appropriations not later than 180 days after enactment of this Act on current efforts to strengthen health systems, including spending by program, and progress made. The report should include a summary of OGAC's plans to implement the World Health Organization (WHO) task shifting guidelines and a summary of the health care infrastructure that will be built with HIV/AIDS funding in this Act."

According to the World Health Organization (WHO), a health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities. A health system is therefore more than the pyramid of publicly owned facilities that deliver personal health services. It includes, for example, a mother caring for a sick child at home; private providers; behaviour change programs; vector-control campaigns; health insurance organizations; occupational health and safety legislation. It includes inter-sectoral action by health staff, for example, encouraging the ministry of education to promote female education, a well known determinant of better health (WHO, 2007, p. 2).

Health systems strengthening (HSS) is defined as any array of initiatives and strategies that leads to better health through improvements in one or more of the health system's functions measured by increased access, coverage, quality, or efficiency. It also implies a measureable improvement in performance that is sustained beyond the period of donor assistance.

Strengthening the health systems of developing countries is a central goal of USAID health programming. Achieving this goal is critical to sustaining improvements in outcomes in health- or disease-specific areas and is a significant factor in supporting overall development in partner countries. Current efforts to strengthen health systems fall along a spectrum ranging from:

- health system improvements that mainly address a disease- or health-specific area, such as effective drug management systems for maternal and child health and high-quality laboratories for tuberculosis (TB) diagnosis, to

- improvements that benefit the whole system, such as increasing health system ability to persuasively promote good health practices that prevent disease and to improve tracking a country's health expenditures.

In both specific and broad systems improvements, USAID's aim is to build durable improvements that develop long-term, sustainable capacity to affect the health of their people.

Health systems strengthening (HSS) and disease- and health-specific intervention areas are mutually reinforcing approaches to health sector development. The success of USAID in assisting countries to improve the health status of their population could not have occurred if those programs had not also strengthened the countries' health systems. This complementary relationship of systems strengthening and health-related interventions applies, for example, in reducing under-5 mortality and maternal deaths, increasing detection and treatment rates for TB, and decreasing fertility rates. USAID support for surveillance systems for monitoring the threat of infectious diseases, or for logistics systems for stocking and distributing contraceptives as part of TB or family planning programs, can have a broad impact on the health system as a whole. USAID recognizes the importance of achieving sustainable results in disease-specific work and also strengthening health systems and looks for opportunities to work on broader, cross-cutting health systems issues.

The World Health Organization (WHO) has defined six core functions, sometimes called building blocks, of a working health system: service delivery; human resources; information; medical supplies, vaccines, and technology; health financing; and governance and leadership (WHO, 2007). USAID assistance strengthens health systems – be it within disease-specific programs, across multiple health areas, or across the entire system. USAID assistance addresses both the demand and supply sides of health programs, focusing on improving understanding of why people do not adopt behaviors that promote

health and prevent disease, and then planning, implementing, and evaluating social and behavior change communications. USAID assistance also looks at what is keeping people from accessing, affording, and receiving quality care, and develops interventions to address these constraints. These interventions address one or more of the six core functions of the health system.

Country Experiences in Health Systems Strengthening

Given the complexity of HSS interventions and the need to tailor interventions based on country situations, the global community has yet to reach a consensus on internationally approved indicators and benchmarks to measure HSS. The lack of consensus surrounding a set of tested and accepted indicators related to health systems hinders efforts to track progress and demonstrate evidence-based results of investments in health systems.

Despite the fact that the international community is still developing feasible, valid indicators of progress in health systems, we do have substantial evidence as indicated below of improved functioning of health systems and the link to health impact.

The country examples in this report represent a cross-section of USAID activities in different country contexts – low income, post-conflict, and more advanced developing countries – across all regions where USAID works. They were selected to show where and how health systems have been strengthened to have the greatest possible impact on the population's health. The country examples demonstrate how funding directed at a specific health or disease area can accomplish specific health objectives and strengthen systems at the same time. Each country example includes a snapshot of current health statistics, some background on USAID's contribution to the long-term development of the health system, and an illustrative example from the current program.

Chapter 2 demonstrates that even in the low income countries, where human capital is strained, and infrastructure is weak, countries can find creative solutions to health systems problems that were accompanied by clearly identifiable positive results in public health impacts. The work described in Rwanda, Ethiopia, Kenya, Kyrgyzstan, Haiti, and Yemen shows USAID's contributions to strengthen underdeveloped health systems and the health impact these contributions have had. USAID's support for decentralization of Health Ministry functions in Rwanda, for example, likely played a role in the drop in under-5 mortality from 192 to 103 deaths per 1,000 live births. HSS efforts in Ethiopia, including those on health financing and human resources, paralleled a reduction in under-5 mortality from 166 to 123 deaths per 1,000 live births and a 23 percent decrease in maternal mortality. In Kyrgyzstan, USAID supported integrated service delivery and improved quality of care, when the country experienced a drop in infant mortality from 63 to 27 per 1,000 live births. USAID's work in Haiti to reestablish the public sector's ability to deliver basic services accompanied significant increases in immunization rates (from 21 percent to 63 percent), and in the proportion of deliveries attended by skilled personnel (from 17 percent to 26 percent).

Chapter 3 discusses health system strengthening programs in post-conflict countries, where the capacity of governments to provide health services is usually weak. To make an impact on health status, the basic elements of a health system, such as financing, human resources, and pharmaceutical and commodity provision, must be built or rebuilt as the country transitions from relief to development. These complicated changes include the transition of finance, leadership, operations, and ownership. In post-conflict settings, government leaders typically express an urgent need to prove their legitimacy by showing citizens that they can meet basic needs. The work described in Southern Sudan, Liberia, and Afghanistan illustrates USAID's contribution to those countries' transitions. The work is carried out under national policy frameworks that further legitimize the government, improve health outcomes, and put the country back on the path of development. System strengthening in post-conflict settings can have significant public health impact: In the case of Liberia, under-5 mortality has dropped from 219 in 1994 to 110 in 2007 during the time the country transitioned to a stable government. In Afghanistan, a strategy of scaling up direct service delivery with nongovernmental organizations, improving workforce capacity, and providing technical leadership for health sector governance made possible an increase in the percentage of the population with access to basic health service from 9 percent in 2000–2003 to 84 percent in 2006–2008.

Chapter 4 looks at more advanced developing countries whose health systems, while stronger, continue to face challenges. In these countries, USAID focuses especially on assisting countries to make health service access more equitable and to develop sustainable health systems. Even these countries may struggle to provide adequate health services to their poor, disadvantaged, or remote populations, exacerbating inequities in health

and nutrition as well as dissatisfaction with political institutions. The activities described in Peru, Honduras, Armenia, Egypt, South Africa, Nicaragua, and Georgia show USAID's contribution to addressing problems within each of the health systems functions as they move toward a sufficient level of quality and coverage. As countries progress, both national and local governments gain the ability to evaluate health systems performance and adjust programs to sustain improvements in health outcomes, especially for the poorest underserved populations. In Armenia, for example, USAID helped introduce more equitable and efficient health financing systems and a Basic Benefits Package that provides free maternity services for all Armenians. Subsequently, the rates of postpartum hemorrhage, the main cause of maternal deaths, fell more than 60 percent between 2005 and 2008.

Research and International Technical Collaboration

USAID conducts health systems research and evaluations to identify, test, and facilitate best practices that reduce the burden of disease attributable to the major causes of mortality and severe morbidity. USAID health systems research meets four criteria: relevance to success of health interventions in HIV/AIDS, malaria, tuberculosis, reproductive health and family planning, maternal and newborn health, and nutrition; potential to improve access, quality, and/or affordability; ability to achieve demonstrable and measurable improvement within three to five years; and suitability for sustained use in low-resource settings. A listing of illustrative HSS interventions by core function (building block) is given in Annex A; a listing of research accomplishments is given in Annex B.

USAID advances research in the six core functions of HSS. Through international technical collaboration, USAID supports the adoption by WHO and other relevant bodies of international standards for best practices in health systems interventions and indicators to measure their progress. In addition, USAID helps build consensus around health systems policy issues. The innovative collaboration of U.S. President's Emergency Plan for AIDS Relief (PEPFAR), USAID, and the WHO led to the development of a global approach to task shifting (see Annex C).

Funding for Health Systems Strengthening

Because USAID takes a development approach to all health programming, much of what is done in the health sector is designed to develop and strengthen local institutions and capabilities. The Foreign Assistance Framework[1] used by USAID to track funds, however, was not set up to track cross-cutting health systems activities, although it is possible to categorize some health sector assistance as part of the six functions, or building blocks popularized by WHO.

Table 1. Health Systems-related Funding (all accounts except HIV/AIDS and Avian Influenza)
(Cross-cutting Health System Functions within All Health Elements)

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$336,970,287
Information	$115,730,519
Governance/Finance/Policy	$220,267,753
Other (health systems-related activity)	$148,983,507
Total	**$821,952,512**

Table 2. Service Delivery/Human Resources Functions Within Each Health Element
(The current framework cannot track the proportion of these funds that related directly to HSS activities)

Service Delivery/Human Resources	Total FY08 Planned Funding
	$79,960,819
	$123,312,981
	$460,664,970
Other Public Health Threats	$30,413,064
	$211,839,861
	$906,191,965

Note: Tables do not include funding for HIV/AIDS or Avian Influenza.

Based on an analysis of funding attributed to the Elements of the Foreign Assistance Framework, USAID has identified a

1. The U.S. Department of State/USAID Foreign Assistance Framework tracks activities and funding according to an established set of disease-specific and health program-specfic elements that capture and track Congressional appropriation sub-accounts and directives. The framework provides detailed information on programs and funding for the health elements – maternal and child health (MCH), malaria, TB, family planning and reproductive health, avian influenza, water supply and sanitation, HIV/AIDS, and other public health threats. Within each of the elements, sub-elements track more specific activities that contribute to the element. The main sub-elements of the MCH element, for example, involve issues in maternal and child morbidity and mortality such as treatment of child illness, birth preparedness and maternity services, and newborn care and treatment.

Construction and Rehabilitation

USAID assistance can include construction and rehabilitation of health facilities where needed and where support is not available from other donors. A total of $117,823,310 in construction and rehabilitation was provided during FY 2008 from all sources and appropriation accounts, except for the PEPFAR program (see Table 1, below). Of significance, a large portion of the spending in the Middle East region is supporting the construction of essential health facilities.

TABLE 1: USAID CONSTRUCTION AND REHABILITATION IN HEALTH FUNDING BY PROGRAM LOCATION AND REGION
(USD FY 2008)

Location	Region	Total
Field Mission	Africa	$26,234,924
	Asia	$16,918,560
	Europe & Eurasia	$4,729,648
	Latin American and the Caribbean	$8,823,986
	Middle East	$59,075,192
Field Mission Subtotal		$115,782,310
Centrally-Managed Field Programs		$2,041,000
GRAND TOTAL		$117,823,310

Below is an estimate of PEPFAR investments in construction and rehabilitation, especially laboratory infrastructure, across all USG agencies, totaling $201,300,000 (see Table 2, below). OGAC anticipates FY 2009 investments to increase once all resources have been programmed in the Country Operational Plans (COPs).

TABLE 2: PEPFAR INVESTMENTS IN CONSTRUCTION AND REHABILITATION
(USD FY 2009)

Category	Total
Laboratory Infrastructure	$172,600,000
USG-managed Construction Projects	$28,700,000
GRAND TOTAL	$201,300,000

total of $821,952,512 of $1,728,144,477 appropriated in FY 2008 (see Table 1) that can be classified in one of the six health systems functions. This amount includes funding from all accounts for all elements except HIV/AIDS and avian and pandemic influenza. (HIV/AIDS funding is analyzed separately, below, and Avian and Pandemic Influenza funding is emergency funding meant for the immediate response to the pandemic.) In addition, another $906,191,965 is classified as service delivery and human resources (see Table 2). At this time, USAID cannot identify specific health systems activities for these funds, but this will become possible as specific health systems indicators and tracking tools are developed..

It should be noted that the funding represented in the charts is not in addition to the funds appropriated for health- or disease-specific areas, but rather another way of representing this same funding in terms of the functions of the health system.

HIV/AIDS

As of end of FY 2008, USAID had implemented approximately 57 percent of the interagency PEPFAR bilateral funding. In FY 2009, total bilateral enacted funds for PEPFAR amounted to $5,462 billion, to date, approximately $2.4 billion implemented by USAID. At USAID, HIV/AIDS programs engage in strengthening health systems through:

- focused investments necessary to achieve HIV/AIDS prevention, care, and treatment goals;
- investments in activities with additional non-disease specific impacts that benefit the overall health system; and
- targeted leveraging with other donors or U.S. Government (USG) partners.

Based on a separate analysis, OGAC has determined the following investments in HSS for FY 2009 in 31 countries where PEPFAR money is implemented by all USG agencies. Drawing on Country Operational Plans, the analysis below reflects funding for HSS across all PEPFAR implementing agencies in the Elements listed, totaling $922 million. The $922 million reflects an initial estimate, calculated in February of 2009; OGAC anticipates HSS investments to increase in FY 2009 once all resources have been programmed in the Country Operational Plans (COPs). Plans for data collection in the future should allow for Agency attribution.

- Logistics and commodities support: $228.5 million

- Strategic information: $138.2 million
- Human resources for health: $379.9 million
- Program activities attributable to other HSS: $175.7 million

PEPFAR also invested in infrastructure and construction in FY 2009 (see page 8).

Measuring Progress in Health Systems Strengthening

USAID currently collaborates with Health Metrics Network, WHO, and other research centers in the United States and overseas devoted to the development of better consensus health systems indicators and tools to measure progress. Many valid indicators exist for tracking health systems, but there is no standard set of indicators collected by one or more countries that could facilitate the analysis necessary to demonstrate evidence-based results of investments in health systems. USAID and its partner organizations already have developed a variety of methods for measuring the individual areas of health systems strengthening, including:

- The Health Systems Assessment Approach guides a rapid, comprehensive review of the health system's six functions to inform the development of country and USAID mission health strategies. Health Systems Assessments have been conducted in Benin, Angola, Nigeria, Vietnam, Pakistan, Southern Sudan, and Namibia.
- The Health Systems Database compiles key health systems indicators from existing online data sources (e.g., Demographic and Health Surveys, WHO Statistical Information System, World Bank World Development Indicators) to produce data-driven country health systems profiles and analytical tools.
- Health Systems Dashboards are a feature of the Health Systems Database and facilitate benchmarking country health systems against their regional and income-group peers. These visual representations of health systems indicators guide users to areas of health system functions that need further analysis.

The USAID Approach to Health Systems Strengthening

The long-term sustainability of partner country programs that address child, maternal and reproductive health; that control major diseases,[2] and that reduce abortion will depend in large measure on the capacity of partner country public and private health systems to produce high quality, accessible, and efficient services. The challenge for USAID and the partner countries with which it works is to identify and strengthen those parts of health systems whose strengthening is most critical in the local context to addressing the major local drivers of human health, collaborating with partner country, private sector, and other donors to reach a minimum standard across each core function.

While many kinds of activities can contribute to strengthening health systems, USAID uses a strategic approach that is based on extensive evidence and experience to target the most critical health systems function needs and elements. USAID helps countries move toward sustainability through continued integration of disease-specific interventions and information to promote health and prevent disease into the broader health system – increasing efficiency while protecting progress on disease-specific interventions.

Acronyms and Abbreviations

AIS	AIDS Indicator Surveys
AMR	Antimicrobial Resistance
ART	Antiretroviral Therapy
DOTS	Directly Observed Treatment, Short Course
EHP	Emergency Hiring Plan
EPHTI	Ethiopian Public Health Training Initiative
FY	Fiscal Year
GAVI	Global Alliance for Vaccines and Immunization
GHI	Global Health Initiative
GHIN	Global HIV/AIDS Initiatives Network
GHWA	Global Health Workforce Alliance
HAPSAT	HIV/AIDS Program Sustainability Analysis Tool
HMN	Health Metrics Network
HRH	Human Resources for Health
LLIN	Long-lasting Insecticide-Treated Nets
MCH	Maternal and Child Health
M&E	Monitoring and Evaluation
NGO	Nongovernmental Organization
OGAC	U.S. Office of the Global AIDS Coordinator
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PHE	Public Health Evaluation
PMTCT	Prevention of Mother-to-Child Transmission of HIV
SCMS	Supply Chain Management Systems
TB	Tuberculosis
USAID	U.S. Agency for International Development
USG	U.S. Government
WHO	World Health Organization

I. Introduction

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Health systems strengthening (HSS) is defined as any array of initiatives and strategies that leads to better health through improvements in one or more of the health system's functions measured by increased access, coverage, quality or efficiency. It also implies a measureable improvement in performance that is sustained beyond the period of donor assistance.

Strengthening the health systems of developing countries is a central goal of USAID health programming. Achieving this goal is critical to sustaining improvements in outcomes in health- or disease- specific areas, and is a significant factor in supporting overall development in partner countries. Current efforts to strengthen health systems fall along a spectrum ranging from:

- health system improvements that mainly address a disease- or health-specific area, for example, better quality laboratories for tuberculosis (TB) diagnosis, to

- improvements that benefit the whole system, for example, increasing health system ability to persuasively promote health and prevent disease, and to improve tracking a country's health expenditures.

In both specific and broad systems improvements, USAID's aim is to build durable improvements which develop long-term, sustainable capacity to affect the health of their people.

Health systems strengthening (HSS) and disease- and health-specific intervention areas are mutually reinforcing approaches to health sector development. The success of USAID in assisting countries to improve the health status of their population could not have occurred if those programs had not also strengthened the countries' health systems. This complementary relationship of systems strengthening and health-related interventions applies, for example, in reducing under-5 mortality and maternal deaths, increasing detection and treatment rates for TB, and decreasing fertility rates. USAID support for surveillance systems for monitoring the threat of infectious diseases, or for logistics systems for stocking and distributing contraceptives as part of TB or family planning programs, respectively, have an impact on the health system beyond the specific disease or health area. USAID recognizes the difficulty of achieving sustainable results in disease-specific work without also strengthening health systems, and looks for opportunities to work on broader, cross-cutting health systems issues.

The World Health Organization (WHO) has defined six core functions, sometimes called building blocks, of a working health system: service delivery; human resources; information; medical supplies, vaccines, and technology; health financing; and governance and leadership (WHO, 2007). USAID assistance strengthens health systems – be it within disease-specific programs, across multiple health areas, or across the entire system. USAID assistance addresses both the demand and supply sides of health programs, focusing on improving understanding of why people do not adopt behaviors that promote

health and prevent disease, and then planning, implementing, and evaluating social and behavior change communications. USAID assistance also looks at what is keeping people from accessing, affording, and receiving quality care, and develops interventions to address these constraints. These interventions address one or more of the six core functions of the health system.

Many countries where USAID works have integrated primary health care services that enable USAID to bring together maternal and child health and nutrition, malaria, and, in some cases, HIV/AIDS prevention and treatment programs to strengthen the whole primary health care system. In other cases, USAID is able to leverage other country and donor efforts to address system-wide bottlenecks to achieve the broadest possible effect on quality, accessibility, or affordability of health services to improve people's health.

Where and how USAID works with each country in strengthening its health system depends upon the country context, health priorities, and roles of other donor partners. HSS activities can have especially high impacts in countries with strong government ownership, commitment, and implementation capacity, and with partners willing to coordinate resources and scale up cross-cutting initiatives. HSS activities also can be effective in many of the more challenging country contexts where USAID works.

Challenges Facing Health Systems in Developing Countries

Despite impressive gains, health systems in many developing countries remain weak, as evidenced by wide gaps in three key indicators: access, quality of care, and affordability. Significant inequities in health outcomes lie hidden beneath national level indicators. Many rural and marginal urban areas have little or no access to the most basic services or essential medicines. Where services or health supplies are present, financial constraints often force families and individuals to delay or go without care and preventive services. Even when available, services often are inadequate due to poor management of workers or buildings, departure from evidence-based standards and guidelines, and lack of data to make the right decisions on priorities and allocation of resources. Specifically:

- Although the **health workforce** represents about 70 percent of the cost of health care, management of human resources in developing countries is weak. Producing more health workers is an important and worthwhile investment in many countries, and countries also can make better use of the human resources that they have.

- An estimated 30 percent of the world's population lacks regular access to **medicines and other essential health supplies**. This figure rises to over 50 percent in the poorest areas of Africa and Asia. Supply systems – from forecasting and procurement to warehousing and distribution – suffer from inadequate resources, inefficient system designs and procedures, ineffective information and reporting systems, and weak monitoring and supervision. Many systems are ill-equipped to handle the rapidly growing volumes and kinds of health products that they must manage.

- Health programs are further challenged by the need to ensure that medicines are of assured **quality and safety** and are used appropriately by providers and consumers. Health systems with inadequate regulatory capacity are ill-equipped to control the entry of counterfeit medicines and substandard products into the marketplace. Inappropriate medicines use and the presence of poor-quality medicines contribute to the emergence of drug resistance and the need to use more costly second-line medicines with longer duration of treatment for patients.

- An estimated 180 million people in developing countries suffer from **financial** catastrophe because of the cost of health care. The root causes are high out-of-pocket expenditures and scant availability of financial subsidies and a viable insurance scheme. Many countries lack the public financial management capacity to ensure timely budgeting and adequate predictability in receipt of funding. As programs grow larger and more complex, many lack systems and trained staff to manage and disburse funds to keep pace. Expanding credit and other financing to private health sector services to improve service quality and access can complement public health services; increase revenues from those who can afford to pay, thereby freeing up public sector resources to serve the poor; and achieve greater public health outcomes.

- Few developing countries have sufficiently strong and effective **health information systems** to permit identification of problems and needs and adequate monitoring of progress toward their health goals. They are unable to make data-based decisions on health policy and to allocate optimally scarce resources.

- Weak **leadership and governance** capacity limits countries' efforts to design and implement effective health sector strategies that incorporate the views and needs of individual citizens, civil society, and private sector organizations. These weaknesses lead to poorly managed, unregulated, corrupt and under-funded health systems, resulting in unequal and regressive distribution of resources that limits the availability of basic health care.

- Much of the **service delivery** in developing countries is of poor quality, uses inefficient practices, and does not follow evidence-based standards, thereby not taking advantage of quality improvements that have proved highly effective in even the poorest health systems. When surrounded by poor-quality services, citizens may not know to demand improvements. Further, people often do not have access to persuasive, culturally sensitive information that would help families practice lifesaving behaviors that promote health, prevent disease, and encourage health-seeking behaviors.

The Growing International Importance of Health Systems Strengthening

While USAID has provided leadership for more than three decades to find and apply innovative solutions to health systems problems – as discussed throughout this report, for much of that period, USAID has collaborated with many partners in the international community. Attention to and funding for HSS, including in USAID, has grown substantially in recent years. Donors, partner countries, and global health partnerships recognize that the success of large-scale disease-specific initiatives depends on effective health systems, and the focus on health systems improves aid effectiveness, sustainability, and long-term predictable funding. Multilateral and international technical agencies play a direct, catalytic role in HSS in areas such as funding, knowledge management, and global priority-setting. Wherever possible, USAID aligns programs to leverage the work of other agencies for comprehensive and coordinated investment in country HSS. Often, USAID provides the technical assistance to make the more significant financing provided by other partners most effective.

WHO plays a key role in weighing the evidence for global standards and guidelines for the health sector, including those for health systems interventions. WHO's network of 193 member states and six regional offices facilitates the spread of lessons and evidence on HSS. The World Bank's health strategy features HSS as its highest priority area, offering financial support to countries across all six health systems core functions, especially in health financing, governance, and medicines. The Global Alliance for Vaccines and Immunization (GAVI) and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) now put significant direct funding into country activities that address health system constraints and weaknesses. Several global health partnerships and task forces have formed to address a specific health system component, including the Global Health Workforce Alliance (GHWA), the Health Metrics Network (HMN), the International Health Partnership+, and the Taskforce on Innovative International Financing for Health Systems.

Many member countries of the Organization of Economic Co-operation and Development, the European Union, and many private foundations provide support for HSS and collaborate with USAID's efforts in this area. Several bilateral country donors and foundations have spearheaded initiatives related to specific health systems problems. For example, the UK Department for International Development and several partners launched a medicines transparency initiative to address the problem of substandard and counterfeit drugs. The Norwegian Agency for Development (NORAD) and several partners support a special program to adapt methods of performance-based management to health programs. NORAD, the Canadian International Development Agency, and the Swedish International Development Cooperation Agency, among others, support global initiatives to strengthen health systems.

The Japan International Cooperation Agency provides HSS assistance to several countries. Germany and France have led global consultations on ways to implement insurance systems to increase access of low-income groups to affordable health services. The Bill & Melinda Gates Foundation supported the creation of key health systems initiatives, such as GHWA and HMN. The Rockefeller Foundation supported an extensive study and learning process to identify the causes of the looming human resources crisis in the health sector, leading to the creation of GHWA and a multi-donor, decade-long effort to find remedies to human resource problems.

USAID Approach to Strengthening the Core Health Systems Functions

USAID health programs look at what is keeping people from accessing, affording, and receiving quality care, and develop interventions to help address these constraints. These interventions address one or more of the six core functions of the health system in ways that will enable countries to sustain

gains in health outcomes beyond the period of donor assistance. Specifically for each of the core functions:

- *Human resources*. USAID helps countries to improve human resource management, ensuring they have the right number, mix, and distribution of competent, efficient, and responsive staff and volunteers.

- *Medical supplies, vaccines, and technology.* USAID helps countries to ensure equitable, timely, and consistent access to essential products and technologies – including contraceptives, vaccines, and medicines of assured quality, safety, efficacy, and cost-effectiveness – and the scientifically sound, cost-effective use of these commodities.

- *Health financing.* USAID helps countries mobilize resources to pay for health needs from reliable, sustainable sources; pool these resources efficiently and equitably; and allocate them in ways to optimize impact, promote efficiency, and enhance equity. This includes expanded health insurance, community-based insurance; performance-based financing, credit, and targeted subsidies.

- *Information.* USAID helps countries develop their capacity for the production, analysis, dissemination, and use of relevant, reliable and timely health information for evidence-based policy development, resource allocation, program planning and management, advocacy, and community participation.

- *Leadership and governance.* USAID works with countries to increase the oversight and accountability of the governance of the health system and the participation of citizens, civil society, and the private sector as responsible actors in its performance. USAID works also to improve the leadership and management skills of health sector staff to better plan and use resources.

- *Service delivery.* USAID assists countries to deliver proven health interventions efficiently to prevent and treat illness, promote healthy behaviors, to improve the quality of service delivery, and to measure impact.

Community Communications Involvement

Communications and community involvement and participation are key ingredients to well-functioning health systems. A health system cannot be considered effective if it is not proactive in providing culturally sensitive and persuasive information to its citizens and communities on the determinants of health and disease, as well as responding to citizen and community demands to be educated consumers of healthcare. Community participation, including that of the media, nongovernmental organizations (NGOs), faith-based organizations, and other agents of civil society, engages individuals and communities to make more informed decisions and take more responsibility for their own health and for that of their families; empowers communities to be active participants in both the direction of health-improving activities and the delivery of health care services; and creates an enabling environment to foster and support positive health behaviors, both individually and collectively. An individual's and community's attitudes, perceptions, and desires regarding health are essential inputs to a health system, cutting across the entire framework. Community and communication activities are an integral part of USAID's HSS efforts.

Equity and How We Address It

Well-functioning health systems deliver high-quality health services throughout the population. Inequities in health outcomes indicate weaknesses in the health system. Inequity based on geography – urban versus rural, for example – indicates an inadequate availability of health services. Inequity based on culture – indigenous versus non-indigenous – indicates the health services are not responsive to all groups. Inequity based on wealth indicates that the cost of receiving care – including costs associated with travel to the place of health service delivery as well as user fees – is preventing poorer people from accessing the care they need and not protecting them from the risk of having to pay for catastrophic costs of illnesses. Programs across the six health systems functions address system failures in equity and narrow the gaps in health outcomes among different population groups. Additionally, waste and inefficiencies within a health system hinder the ability to direct resources toward pro-poor policies. USAID programs assist countries to target health resources to all underserved population groups. When disparities exist between high- and low-income populations, for example, USAID assists governments to develop services and systems that are responsive to all citizens.

Sustainability of Health Gains

USAID works with countries to design programs that can sustain gains in health. Some of the elements of sustainability are: ensuring country ownership, encouraging community involvement and work with the media, using proven interventions, analyzing initial investments and recurrent costs, expanding the role of the unsubsidized private sector in the

delivery of health products and services, and strengthening management capacity. For example, while a health system could be strengthened by providing salary supplements, the effect lasts only as long as donor funding. On the other hand, training a clinician or a trainer of clinicians can improve performance for years. The impact of assisting a country to design a community-based health insurance plan, a drug regulatory policy, a management information system, or social and behavior change programs is long lasting.

Effective and sustainable strategies for strengthening health systems require leadership and commitment from, among others, partner country governments, health service providers, community workers, and NGOs. Introducing new concepts or designs into existing health systems challenges old ways of doing things and is never an easy task. Shifting tasks to lower-level providers or using performance-based payments, for example, require high levels of country ownership to be successful (see further discussion of task shifting in Annex C, below).

Creating strategies that address the health system's ability to reduce inequities and reach the poorest and most marginalized populations is especially challenging. Many countries find that using the available knowledge and tools, it is extremely difficult to implement successful pro-poor policies and build public health and curative care programs that are fully responsive to the poor.

For example, catastrophic costs of illness due to expensive hospital stays and treatments are not only a risk for families, but also may drain public resources needed to subsidize essential health services to the poorest of the poor. Waste and inefficiencies within a health system can hinder the ability to direct resources toward pro-poor policies. Inadequate understanding of the determinants of healthy behaviors for individual ethnic and cultural groups, especially the poor, may cause investments in lifesaving health services to go underused. USAID works with countries to understand these challenges to sustainability and find more effective approaches to improving program effectiveness.

Investing in Infrastructure

Building the physical health system infrastructure, such as constructing or rehabilitating health facilities, installing communications infrastructure, and providing vehicles, is an important element of HSS, particularly in post-conflict countries. Strengthening health system infrastructure by itself, however, does not address all the bottlenecks described above. USAID engages in new construction only under special circumstances, and USAID field projects rehabilitate and purchase critical equipment only as needed to assist countries to maximize the achievement of their service delivery goals.

The next three chapters describe progress in HSS programming in low-income countries (Chapter 2), post-conflict countries (Chapter 3), and more advanced developing countries (Chapter 4). Chapter 5 presents USAID research and technical collaboration to develop new tools and approaches for HSS. Chapter 6 summarizes the funding of USAID HSS efforts worldwide. Chapter 7 summarizes the USAID approach to measuring progress in health systems assistance. Chapter 8 concludes the report with a summary description of USAID's approach, focusing attention on assisting countries to develop and implement well-managed, targeted and tracked health systems improvements.

The country examples in this report represent a cross-section of USAID activities in different settings across all regions. They were selected to show where and how health systems have been strengthened in the lowest-income countries, post-conflict countries, and more advanced developing countries. These country examples demonstrate how funding accomplishes specific health objectives and strengthens systems at the same time. Each country example includes a snapshot of current health statistics, some background on USAID's contribution to the long-term development of the health system, and an illustrative example from the current program.

2. Health Systems Strengthening in Low-Income Countries

Most of the countries where USAID works are on the lowest end of the income scale. However, even in countries with low resources, strained human capital, and weak infrastructure, USAID has worked to find solutions to health systems problems that result in public health impact. In most low-income countries, people rely simultaneously on the public, private, and non-governmental, nonprofit sectors. Out-of-pocket expenditures for basic health services can overwhelm even moderately well-off families. And, regardless of the cultural and political context, across the spectrum of health systems components, health systems strengthening activities rely on the commitment of communities if they are to succeed. The work described in Rwanda, Ethiopia, Kenya, Kyrgyzstan, Haiti, and Yemen shows USAID's contributions to the development of health systems and the impact these contributions have had on the health of those countries' citizens.

When USAID returned to **Rwanda** after the 1994 genocide, the Agency, along with other donors, worked closely with the government to put in place a series of HSS efforts, including information systems and systems for procuring, storing, and distributing medicines to reduce stockouts and waste. Rwanda also is one of the original focus countries of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Working in collaboration, USAID and PEPFAR have leveraged their funds to introduce community-based health insurance.

USAID also worked with the Government of Rwanda on reforming health financing, setting policies to rationalize the workforce, and instituting training for government officials, managers, and service providers. Recent data suggest these efforts paralleled a period of improved public health status. Modern contraceptive prevalence rate more than tripled, from 8.2 percent in 1992 to 28.5 percent in 2007. Between 2005 and 2007, under-5 mortality fell from 192 to 103 per 1,000 live births.

In 2005, Rwanda's Ministry of Health embarked on a comprehensive decentralization process for the health sector. There was an immediate need to strengthen capacity for both local governments and communities to support improved health service delivery at the local level. USAID's Twubakane program – meaning "let's build together" in Kinyarwanda – began to improve service delivery and quality of care, and to improve decentralized governance. Working with district governments and local administrative units of the Ministry of Health and Ministry of Finance, USAID provided technical assistance so that decentralized levels can determine priority health needs for a specific administrative area and can manage appropriate interventions.

In the mid-1990s, USAID collaborated with other donors to develop the first Health Sector Development Plan, giving the **Ethiopian** government a blueprint for HSS. As part of the Plan, USAID supported activities to strengthen the pharmaceutical management system, built health centers and sub-centers linked to local communities, trained health workers, and developed a robust information management system. At the end of the decade, USAID helped establish a health sector financing secretariat in the Ministry of Health to guide policy decisions on user fees and other finance issues. USAID also supported a primary health care program, including attention to health system problems, for the Southern Nations, Nationalities, and Peoples' Regional State, one of the four largest regions in Ethiopia. These HSS efforts paralleled a

RWANDA

Strengthened Health Systems Improves Service Delivery and Quality of Care

Population	10,746,311
Maternal Mortality Ratio per 100,000 live births	750
Under-5 Mortality Rate per 1,000 live births	103
Modern Contraceptive Prevalence Rate (%)	27.4
Income per Capita (PPP international $)	860
HIV Prevalence (%)	2.8
TB Case Detection Rate (% per year)	25
Malaria per 100,000	9,474
Health Expenditure per Capita (US$)	210
Rural Sanitation Coverage (%)	20
Nurses and Midwives per 1,000	0.45 (2005)
Skilled Attendance at Birth (%)	52

ETHIOPIA

Addressing Gaps in Health Workers Improves Family Planning, Reproductive, and Child Health Services

Population	85,237,338
Maternal Mortality Ratio per 100,000 live births	673
Under-5 Mortality Rate per 1,000 live births	123
Modern Contraceptive Prevalence Rate (%)	13.9
Income per Capita (PPP international $)	780
HIV Prevalence (%)	2.1
TB Case Detection Rate (% per year)	28
Malaria per 100,000	730
Health Expenditure per Capita (US$)	22
Rural Sanitation Coverage (%)	8
Nurses and Midwives per 1,000	0.24 (2007)
Skilled Attendance at Birth (%)	6

remarkable reduction in under-5 mortality that decreased from 166 to 123 per 1,000 between 2000 and 2005. Progress between 2000 and 2005 in family planning programming showed an increase in modern contraceptive prevalence rate from 4.7 percent to 9.7 percent, and a 23 percent decrease in maternal mortality.

The lack of trained medical professionals and community health workers is particularly acute in Ethiopia, where the latest health workforce indicators suggest a total of 1,936 physicians for the entire country, or 0.03 physicians to care for every 10,000 people (WHO, 2006). Under the Ethiopian Public Health Training Initiative (EPHTI), USAID is assisting five Ethiopian universities to strengthen the quality of training for health officers, with a special focus on maternal and newborn health, high-risk pregnancy, fistula identification and repair, and family planning and reproductive health practices. PEPFAR funds support the development of human resources for care and treatment programs for HIV/AIDS and other HIV/AIDS interventions. In FY 2008, through additional training and services, EPHTI reached a critical target of 3,000 health officers supported by the project and strengthened the capacity of the five universities by updating technical skills, pedagogical skills, and managerial capacity.

USAID has provided broad support to **Kenya's** health sector at each stage in its development over several decades, beginning with efforts to improve basic service delivery in communities and clinics. The program has assisted the Government of Kenya with health policy development, procurement and distribution of essential drugs and family planning commodities, data collection on health indicators, and training of health care workers. In the face of a declining economy and the emergence of the AIDS epidemic, USAID expanded its focus to health care financing, including cost-sharing with the public sector and supporting a national health insurance scheme. USAID programs also work to increase health NGOs' sustainability of, and increase the private sector's role in, health service delivery.

These HSS efforts paralled a period of improved health conditions. Modern contraceptive prevalence among married women increased from 10 percent to 32 percent from the 1980s to 1995–97. Measles immunization coverage almost doubled, from 47 percent in 1989 to 72 percent in 2003, and TB case detection rate increased from 58 percent in 1996 to 72 percent in 2007. Further, the maternal mortality ratio declined by 30 percent between 1998 and 2003.

KENYA

PEPFAR Funding Builds on More than Four Decades of Support to Health System Strengthening and Addresses Health Worker Gap

Population	39,002,772
Maternal Mortality Ratio per 100,000 live births	560
Under-5 Mortality Rate per 1,000 live births	115
Modern Contraceptive Prevalence Rate (%)	31.5
Income per Capita (PPP international $)	1,550
HIV Prevalence (%)	[7.1 -8.5]
TB Case Detection Rate (% per year)	72
Malaria per 100,000	363 (2002)
Health Expenditure per Capita (US$)	105
Rural Sanitation Coverage (%)	48
Nurses and Midwives per 1,000	1.18 (2002)
Skilled Attendance at Birth (%)	42

In 2006, USAID responded to the critical shortage of trained health care staff with the PEPFAR-funded Kenya Emergency Hiring Plan (EHP), a flexible, rapid-response staffing and training model that deployed large numbers of health workers in less than half the time of standard public sector recruitment and deployment practices. The program increased family planning and child health service access by training and placing workers in high-need rural areas, including re-opening clinics previously closed due to staff shortages. Although this private sector contracting model was originally designed with the government to quickly deploy 830 HIV workers, the model's success led the government to turn to this mechanism regularly. The program has proved to be sustainable: building on the initial three-year stop-gap measure, these workers are being formally transferred to the public service as full-time employees, and their salaries have been included in government budgets. The government plans to use the EHP model, which employs transparent recruiting and hiring, for future rapid hiring needs. The governments of Tanzania and Malawi recognized the success of the EHP program and have adopted similar models.

USAID was the first bilateral donor to support the government of **Kyrgyzstan** in its National Health Care Reform. With USAID assistance, the government established the Mandatory Health Insurance Fund. The Fund's main objectives were to provide beneficiaries with medicines and supplies and to trigger reforms through payment systems that give providers new financial incentives and autonomy. By 2007, 70 percent of state spending for health was channeled through the Fund, which insures 80 percent of the population and subsidizes another 8 to 11 percent. USAID now supports the successor to the original reform. The main goal of the successor reform is the provision of equal and guaranteed access to high-quality and effective health services.

One area where health reform efforts have focused in improving access, quality, and affordability of services that have an impact on infant mortality. Assessments showed that although almost all women were receiving prenatal care and delivering in health clinics, infant deaths were stagnating at a high level. The problem was not access, but service quality. The primary strategy was to improve service quality in an increasing number of facilities and to inform, encourage, and counsel people to ask for quality services. Integrated service delivery and improved quality of care has resulted in reducing the infant mortality rate from 63 deaths per 1,000 live births in 1995 to 27.1 deaths per 1,000 live births in 2008, putting Kyrgyzstan on track to meet Millennium Development Goal 4 to reduce child mortality.

KYRGYZSTAN

Health Care Reform, Integrated Service Delivery, and Behavior Change Reduce Infant Mortality

Population	5,431,747
Maternal Mortality Ratio per 100,000 live births	104
Under-5 Mortality Rate per 1,000 live births	44
Modern Contraceptive Prevalence Rate (%)	45.5
Income per Capita (PPP international $)	1,980
HIV Prevalence (%)	0.1
TB Case Detection Rate (% per year)	60
Malaria per 100,000	9
Health Expenditure per Capita (US$)	127
Rural Sanitation Coverage (%)	93
Nurses and Midwives per 1,000	5.66 (2007)
Skilled Attendance at Birth (%)	97.6

USAID's main HSS activity in **Haiti** provides development assistance to the health sector in Haiti through *Santé pour le Développement et la Stabilité d'Haïti – Yon Pwoje Djanm*. The goal is to increase access to and use of the Government of Haiti's basic health care packages, and to mobilize partnerships with the private sector to improve health. USAID supports the leadership of the Ministry of Health in the decentralization of health care services, builds strategic management and targeting of resources for the health sector, and mobilizes commercial partnerships for improved health.

Between 2004 and 2007, a period marred by increased instability and violence, activities focused on the increased use of quality maternal and child survival services, including immunizations, increased use of quality reproductive health services, and reduced transmission of selected infectious diseases (TB and HIV/AIDS) with an increased emphasis on care management and support systems, and integration of behavior change communication. PEPFAR has also made significant investments in health systems in Haiti and is working directly with the government to strengthen the supply chain, information systems and overall service delivery.

USAID selected 29 target zones in all 10 departments to reestablish the public sector's ability to manage the delivery

HAITI

Improving Access to Services and Mobilizing Partnerships with the Private Sector

Population	9,035,536
Maternal Mortality Ratio per 100,000 live births	630
Under-5 Mortality Rate per 1,000 live births	86
Modern Contraceptive Prevalence Rate (%)	24.8
Income per Capita (PPP international $)	1,050
HIV Prevalence (%)	2.2
TB Case Detection Rate (% per year)	49
Malaria per 100,000	115
Health Expenditure per Capita (US$)	96
Rural Sanitation Coverage (%)	12
Nurses and Midwives per 1,000	0.11 (1998)
Skilled Attendance at Birth (%)	26.1

of basic services, including HIV/AIDS prevention, care, and treatment services. Central to the program was the belief that good governance and health are inextricably linked. Additionally, USAID continued to fund a network of 30 NGOs to provide health services. The NGOs are held accountable for results through a performance-based contracting approach. USAID developed the institutional capacity necessary to improve the Ministry of Health's ability to carry out its executive function at the central and departmental levels for both public and private providers. The program addressed the development of realistic, action-oriented policies, cost-effective implementation of the delivery system, and effective coordination of international community contributions. Specific activities included engagement of the private sector and engagement of the Haitian Diaspora, and development of management and service delivery capacity, including a departmental approach for improving availability of and access to priority commodities and a financial management system.

These improvements paralleled some significant improvements in health conditions. The rate of childhood immunizations increased from 21 percent to 63 percent in public sector target areas. In areas covered by the NGO network, the rate was 93 percent. The number of deliveries attended by skilled personnel rose from 17 percent to 26 percent in public sector areas, and to 68 percent in NGO areas. The use of modern contraceptives went up to 8 percent from 2 percent in public sector zones, while in NGO areas, the rate was 32 percent. The number of people tested for HIV increased from 38,381 to 101,793 in all areas the districts designated for USAID assistance.

USAID's Supply Chain Management Systems (SCMS), a global program funded by PEPFAR, works with government partners in Haiti to strengthen systems to manage HIV/AIDS commodities and improve data quality for forecasting and supply planning. It also provides local technical assistance to improve storage and distribution practices at treatment and care facilities, and has established a 1,400-square-meter warehouse in Port-au-Prince. It has built local capacity by developing a cadre of mast trainers to instruct pharmacists, site managers, and drug dispensers working in treatment centers on techniques of logistics and stock management. The program's distribution network, which started with 12 sites in 2006, now includes more than 100 sites across the country. As of December 2008, the project had delivered commodities valued at $11.6 million, and health care workers could rest assured that they will have the continuous supply of medicines needed to enroll new patients in antiretroviral treatment (ART).

Assistance to **Yemen** has aimed to improve the health of women and children by strengthening health service systems. To build a decentralized workforce able to deliver improved services, USAID trained hundreds of physicians, midwives, and female primary health care workers. Programs enhanced clinical practices in antenatal care, delivery, immunization, and family planning; strengthened infection prevention and drug supply; and improved facilities and equipment. Program sustainability was furthered by activities to build community awareness, capacity, and leadership in managing and supporting health services.

Health information systems must be robust, describing key health needs in communities and identifying those needs by geographic location and socioeconomic status, in order to inform program and policy decisions. In Yemen, USAID assisted the government to develop a geographic information system, called the Health Analyzer, which allows anyone to visually explore patterns in health indicators. The Health Analyzer provides a powerful way to identify service gaps – such as

YEMEN

Development of Information Systems Identifies Critical Gaps and Needs in Health Services

Population	22,858,238
Maternal Mortality Ratio per 100,000 live births	430
Under-5 Mortality Rate per 1,000 live births	78
Modern Contraceptive Prevalence Rate (%)	19.2
Income per Capita (PPP international $)	2,200
HIV Prevalence (%)	<0.2
TB Case Detection Rate (% per year)	46
Malaria per 100,000	1,264
Health Expenditure per Capita (US$)	82
Rural Sanitation Coverage (%)	30
Nurses and Midwives per 1,000	0.66 (2004)
Skilled Attendance at Birth (%)	36

staffing, drugs, equipment, infrastructure, underserved populations, and inaccessibility to health facilities – in order to prioritize resource allocations.

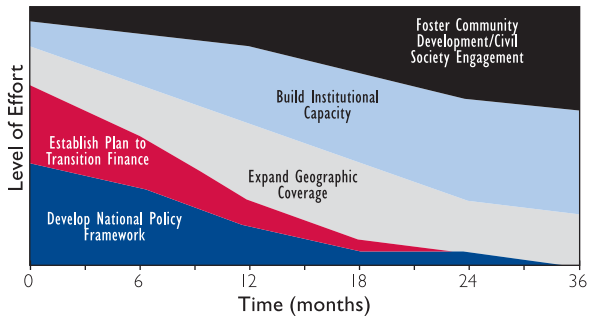
Governorate and district health officials without access to a computer have been provided with a health facility atlas that includes maps of precise geographic locations, photos, and summary information about health facilities. The success of the project encouraged the Ministry of Health to scale it up on a national level. With funding from the World Bank, the health facilities survey and mapping were conducted for all governorates.

3. Health Systems Strengthening in Post-conflict and Conflict Countries

During conflict, health services are largely delivered by NGOs and other relief agencies. Once peace is achieved, the responsibility for the health sector transitions to newly established governments. These governments are under pressure to provide quality health services to prove their legitimacy. The capacity of post-conflict governments to provide health services is usually weak. As the country transitions from relief to development, to make an impact on health status, the basic elements of a health system must be built or rebuilt. These include financing, human resources, and pharmaceutical and commodity provision. The transition involves finance, leadership, operations, and ownership. Figure 1 depicts the changing levels of effort needed in each of these key transitions over time.

Figure 1

Health Systems Strengthening in Post-conflict: Health Sector Program Emphasis over Time



Transition of finance refers to helping the country leverage national revenues and resources to finance health services, while reducing reliance on uncoordinated relief efforts and ensuring that coverage gaps do not emerge. Transition of leadership refers to helping post-conflict countries develop national policy frameworks to guide the health sector. The transition from relief to development involves setting national standards for human resources, accrediting health facilities, developing a basic package of health services, establishing a national health strategy, and working with decentralized authorities to take on management and supervision responsibilities.

As the country transitions into peace, it is critical that the population gain ownership of public services. This area of work involves empowering civil society to provide oversight to health facilities, ensuring community-based health and prevention activities are in place, and working to engage the populace in policy and resource allocation decisions.

The work described in Southern Sudan, Liberia, and Afghanistan shows USAID's contribution to ensuring that basic health services are delivered to the people of post-conflict settings under national policy frameworks that legitimize the government, improve health outcomes, and put the country on the path toward development.

Before the Comprehensive Peace Agreement was signed, the USAID Office of Foreign Disaster Assistance focused on providing emergency health, water, and sanitation relief for the most vulnerable war- and drought-affected communities in Sudan. Now, USAID is focusing on the development of core health systems components to ensure that **Southern Sudan** has the capacity to deliver high-quality services. USAID supports efforts to strengthen the capacity of the Government of Southern Sudan Ministry of Health to

SOUTHERN SUDAN

Increasing Knowledge of Logistics Management and Ensuring Availability of Critical Medicines

Population	41,088,000 (all Sudan)
Maternal Mortality Ratio per 100,000 live births	2,037
Under-5 Mortality Rate per 1,000 live births	135
Modern Contraceptive Prevalence Rate (%)	6 (all Sudan)
Income per Capita (PPP international $)	1,880 (all Sudan)
HIV Prevalence (%)	1.4 (all Sudan)
TB Case Detection Rate (% per year)	31 (all Sudan)
Malaria per 100,000	8512 (all Sudan)
Health Expenditure per Capita (US$)	61 (all Sudan)
Rural Sanitation Coverage (%)	24 (all Sudan)
Nurses and Midwives per 1,000	0.90 (2006) (all Sudan)
Skilled Attendance at Birth (%)	10

address public health threats through the development of policy and information systems, human resources, disease surveillance, budgeting and finance, and pharmaceutical management systems.

USAID's assistance aims to increase access to, and utilization of, health, water, and sanitation services to improve the well-being of children, mothers, and families. The project funds local and international NGOs for the continued delivery and expansion of primary health care services and facilitates health management capacity building at central and county levels. When the project identified a lack of comprehensive logistics knowledge among health personnel as a critical challenge leading to frequent stockouts and pharmaceutical supply mismanagement, USAID funded training to address these gaps. Participants from the Ministry of Health, state-level ministries of health, county health departments, and partner organizations mastered basic health commodity logistics concepts.

Liberia is emerging from decades of civil war, when much of the infrastructure was destroyed, and many basic services collapsed. Today, Liberia is rebuilding its infrastructure and basic services and focusing significant attention on strengthening the health system. After the country's prolonged civil war, under-5 mortality was cut in half, from 219 deaths per 1,000 births in 1994 to 110 deaths per 1,000 births in 2007. USAID has implemented a variety of health programs in the country, and fully engaged in directed health systems strengthening in Liberia beginning in 2004.

LIBERIA

Developing System-wide Strategies and Policies to Protect More Citizens from the Spread of Malaria

Population	3,441,790
Maternal Mortality Ratio per 100,000 live births	994
Under-5 Mortality Rate per 1,000 live births	111
Modern Contraceptive Prevalence Rate (%)	10.3
Income per Capita (PPP international $)	280
HIV Prevalence (%)	1.7
TB Case Detection Rate (% per year)	69 (2006)
Malaria per 100,000	23,690 (1998)
Health Expenditure per Capita (US$)	39
Rural Sanitation Coverage (%)	7
Nurses and Midwives per 1,000	0.27 (2008)
Skilled Attendance at Birth (%)	46

USAID programs have played a major role in drafting a national health care financing strategy and establishing the groundwork for further policy development to enhance resource allocation, examine the impact of user fees, and work with the private sector. USAID worked with the government to develop effective routine Health Management Information Systems and Standard Operating Procedures for essential drugs and medical supplies. More recently, technical support from USAID led to establishing Liberia's first National Health Accounts analysis (FY 2008 data) and built in-country capacity to continue this annually through learning tours, training, and technical support.

For example, USAID played an instrumental role in the Liberian Ministry of Health and Social Welfare's decision to abandon its policy of favoring only one brand of long-lasting insecticide-treated nets (LLINs) to prevent malaria. Through policy dialogue, the Ministry formally abandoned its 2006 policy statement listing only one brand of nets and revised it in favor of a June 2008 policy that allowed all LLINs that met WHO standards to be sold and distributed in the country. This stimulated competition and resulted in lower net prices for a large USAID procurement under the President's Malaria Initiative. USAID continued working with the Liberian National Malaria Control Program to design and implement a tracking system for nets, including creating transaction forms for distribution, preparing adequate store rooms, and putting into place an effective logistics system to transport nets from the port in Monrovia to communities.

These programs provided LLINs to 49 percent of the country and provided 2 million doses of effective malaria drugs. The 2009 draft Malaria Indicator Survey provides evidence of reduced malaria impact on children. Malaria parasitemia in children under 5 decreased from 66 percent in 2005 to 32 percent in 2009. Women who received malaria prevention in pregnancy increased from 4 percent to 45 percent during the same period. The percentage of children under 5 sleeping under an insecticide treated net increased from 2.6 percent in 2005 to 26 percent in 2009. Under the strong leadership of the Ministry of Health and Social Welfare, and with targeted policy reform, Liberia has shown what it can do to address

infant/child mortality, and has started a steady expansion of health services from Monrovia and large cities to the periphery.

Afghanistan has some of the worst health indicators in the world. Since 2002, USAID and other donors have helped the Afghan government build a health system, beginning with facilities construction and equipment provision through development of the National Health Policy and the Health and Nutrition Chapter of the Afghanistan National Development Strategy. Improvements have been made in the health system despite political instability and widespread insecurity. USAID supported the Ministry of Public Health to rehabilitate and reinforce key information systems – including financial management and procurement systems – and to support health system decentralization and improve the capacity for management at provincial and local levels. Thousands of community health workers and community midwives have been trained. Throughout this period, USAID and other donors assisted the Ministry of Health to provide oversight to the nongovernmental agencies delivering the vast majority of direct services, strengthening the Ministry's capacity to manage grants and improve quality of care.

USAID's current HSS strategy focuses on scaling up direct service delivery, improving capacity and technical leadership for health sector governance, and developing the medical workforce. USAID supported the development of Afghanistan's Basic Package of Health Services and Essential Package of Hospital Services. These standards, used throughout the country, define the minimum expected services, equipment, and required staff for each level of the health care system in order to improve and rationalize health care delivery and facilitate referral systems. USAID continues to provide technical assistance at all administrative levels to strengthen the implementation and governance of these standards.

AFGHANISTAN

Scaling Up Service Delivery to 84 Percent Coverage of Access to Basic Health Services

Population	28,395,716
Maternal Mortality Ratio per 100,000 live births	1,600
Under-5 Mortality Rate per 1,000 live births	191
Modern Contraceptive Prevalence Rate (%)	15.5
Income per Capita (PPP international $)	not available
HIV Prevalence (%)	not available
TB Case Detection Rate (% per year)	64
Malaria per 100,000	1,981
Health Expenditure per Capita (US$)	29
Rural Sanitation Coverage (%)	25
Nurses and Midwives per 1,000	0.5 (2005)
Skilled Attendance at Birth (%)	19

Remarkable improvements have been seen in Afghanistan, including significant advancements in population health. The percentage of the population with access to basic health services went from 9 percent in 2000–2003 to 84 percent in 2006–2008. During the same period, the percentage of women in rural areas delivering with a skilled birth attendant went from 6 percent to 19 percent. Measles immunization coverage increased from 44 percent in 2002 to 70 percent in 2007, and TB case detection rates increased dramatically, from 4 percent of cases in 1997 to 64 percent of cases in 2007.

4. Health System Strengthening in More Advanced Developing Countries

Health systems in more advanced developing countries are typically able to provide basic preventive, promotive, and curative care to a large portion of their populations, while also making progress with quality improvement and equitable financing. These countries may also be facing a growing burden of noncommunicable diseases and an aging population. Nonetheless, these countries continue to face challenges, especially in terms of equity and sustainability. These countries often fail to provide adequate health services to the poor, exacerbating inequities in health and nutrition as well as dissatisfaction with political institutions. With assistance from USAID and other donors, these countries are typically equipped to address problems within each of the health systems building blocks simultaneously as they move toward a sufficient level of quality and coverage. As they progress, both national and local governments are able to evaluate health systems performance and adjust programs to sustain improvements in health outcomes, especially those for poor and underserved populations.

The work described in Peru, Honduras, Armenia, Egypt, South Africa, Nicaragua, and Georgia shows USAID's contribution to the development of these countries' health systems and the impact these contributions have had on the health of their populations.

In these countries, USAID typically has a smaller health-related program yet may still be the largest bilateral donor in health. USAID provides technical assistance that leverages government and other development partner funding to meet remaining country and USAID health outcome goals and to reach HSS benchmarks. Programs tend to focus on stronger governance and leadership capacity, including partner country capacity to monitor adherence to health systems performance standards; improved service delivery, evidenced by adherence to evidence-based quality standards; more efficient and equitable financing systems; more effective and transparent commodity management systems; better integrated and responsive health management information systems; human resources management that maintains high professional standards for health providers, and active involvement of individuals and communities in successful health care delivery.

PERU

Health Financing Reforms to Ensure Universal Coverage for All Peruvians

Population	29,546,963
Maternal Mortality Ratio per 100,000 live births	240
Under-5 Mortality Rate per 1,000 live births	32
Modern Contraceptive Prevalence Rate (%)	46.7
Income per Capita (PPP international $)	7,200
HIV Prevalence (%)	0.5
TB Case Detection Rate (% per year)	93
Malaria per 100,000	284
Health Expenditure per Capita (US$)	300
Rural Sanitation Coverage (%)	36
Nurses and Midwives per 1,000	0.67 (1999)
Skilled Attendance at Birth (%)	70

USAID first provided assistance to **Peru** to improve its health information and contraceptive logistics systems, which paralleled a doubling of the modern contraceptive prevalence rate from 23 percent to 46.7 percent over the period 1986–2004. USAID's work evolved to address other areas of HSS, including improving the health workforce through training and raising quality of health service delivery, which undoubtedly played a role in cutting the infant mortality rate by more than half, from 58 in 1990 to 23 in 2005. Since 2005, USAID has supported critical dialogue between key health sector actors, including political parties, to reach a consensus on the need to advance a health insurance reform and the health decentralization process. USAID has assisted the Ministry of Health to develop the studies and technical tools to define and cost the Essential Health Benefit Plan, as well as project the financial requirement of health insurance reform. USAID has been instrumental in ensuring that the reforms are progressive and create access to care for traditionally marginalized populations – a critical step to securing comprehensive health care for

the Peruvian population. In 2004, for example, nearly 100 percent of births for women in the richest quintile were attended by skilled providers, compared to only 65 percent for women in the poorest quintile.

In March 2009, the Peruvian National Congress approved the Universal Health Insurance Law. The law includes a mandate to cover all residents though a gradual and progressive process; regulation of an Essential Health Benefit Plan specifying covered procedures, financial coverage, quality standards, and maximum time period for receiving care for all insurers, both public and private; and creation of a National Supervisory Institution to oversee the compliance of public and private providers with health insurance laws and regulations.

Since 2003, USAID´s support to **Honduras** has focused on strengthening the role of the central Ministry of Health in terms of regulation and quality assurance of public services offered to the population. Support also has been provided to decentralize health care services to improve cost-efficiency, accountability, and transparency. USAID's work addresses other areas of HSS, including defining the national health system, developing standard models of care, improving pharmaceutical management systems, and strengthening M&E and health surveillance systems. The system strengthening efforts facilitate citizen participation, accountability, and transparency.

HONDURAS

Reforms to Health Governance Bring Significant Increases in Coverage

Population	7,833,696
Maternal Mortality Ratio per 100,000 live births	280
Under-5 Mortality Rate per 1,000 live births	29.6
Modern Contraceptive Prevalence Rate (%)	56.4
Income per Capita (PPP international $)	3,610
HIV Prevalence (%)	0.7
TB Case Detection Rate (% per year)	87
Malaria per 100,000	140
Health Expenditure per Capita (US$)	241
Rural Sanitation Coverage (%)	55
Nurses and Midwives per 1,000	1.32 (2000)
Skilled Attendance at Birth (%)	66.9

Despite impressive improvements in health outcomes, significant inequities remain. In 2006, an 18 percent gap in infant mortality, and a gap in the total fertility rate of 3.5, between the richest and poorest quintiles remained, pointing to ongoing weaknesses in the health system that could impede the sustainability of past gains.

Currently, USAID is working with the Ministry of Health to implement a new program to strengthen health systems and decentralize health services, particularly family planning and maternal and child health services. Decentralization occurs through contracting out services to local-level public or private providers. Indicators of quality service delivery are developed and measured, and contracts are then paid against performance. USAID supports the Ministry of Health to build the indicators for service delivery contracts, define the norms for contracting services, and develop the monitoring mechanisms for payment against performance. USAID also assists public and non-governmental providers on counseling techniques, essential obstetric and newborn care and procedures, M&E, and internal monitoring systems.

A study conducted in 2009 found that these decentralized health services reached more citizens, provided better quality, and were more cost efficient. In those interventions that show an impact on infant and maternal mortality, decentralized services achieved increases of 27 percent for prenatal care, 35 percent for attended births, 20 percent for growth monitoring, and 10 percent for postpartum care as compared to centralized services covering similar populations.

Since 2000, USAID has played a major role working with its development partners to assist **Armenia** in scaling up its capacity to deliver high-quality, integrated health services and to strengthen the health systems essential to sustaining this progress. USAID helped identify key health systems bottlenecks constraining the successful implementation of maternal and child health, reproductive health and family planning, and TB initiatives. Addressing these systems weaknesses is contributing to Armenia's success in reducing maternal and child morbidity and mortality, decreasing abortion rates, and improving TB case detection rates.

USAID assistance to introduce health systems interventions helped institutionalize more equitable and efficient health financing systems, including offering a Basic Benefits Package that provides free primary health care and maternity services for all Armenians; implementing an Open Enrollment System

ARMENIA

Strengthening Systems Results in 60 Percent Reduction in Maternal Mortality from Postpartum Hemorrhage

Population	2,967,004
Maternal Mortality Ratio per 100,000 live births	76
Under-5 Mortality Rate per 1,000 live births	29.8
Modern Contraceptive Prevalence Rate (%)	19.5
Income per Capita (PPP international $)	5,870
HIV Prevalence (%)	0.1
TB Case Detection Rate (% per year)	51
Malaria per 100,000	1
Health Expenditure per Capita (US$)	272
Rural Sanitation Coverage (%)	81
Nurses and Midwives per 1,000	4.87 (2007)
Skilled Attendance at Birth (%)	98.4

whereby every resident of Armenia has a right to choose his or her own health care provider; improving family doctor and nurse skills throughout the country; and introducing family medicine practices. Today, 85 to 90 percent of Armenia's population of 2.9 million has participated in the open enrollment program; government spending on primary health care has increased from 15 percent to 35 percent over the last 10 years; and the primary cause of maternal death in Armenia – postpartum hemorrhage – has fallen more than 60 percent, from 5.4 percent in 2005 to 1.7 percent in 2008 in participating facilities.

Starting in the mid-1990s, USAID worked with the **Egyptian** Ministry of Health and Population and other donors to support Egypt's Health Sector Reform Program. The objective of the reform is to develop a national health system with social insurance to ensure equity in access and financing of health care, efficiency, quality, and financial sustainability of the health care system. USAID and other donors continue to support the country's rollout in select districts and operational research to determine the most appropriate primary health care models.

A significant component of the health reforms was the use of data. Egypt pioneered the application of the National Health Accounts framework in the Middle East region in the early 1990s. USAID also supported National Maternal Mortality Studies and a nationwide maternal mortality surveillance system. The first study, conducted in 1992–1993, found that 92 percent of all maternal deaths had one or more avoidable factors, which were widely publicized in Egypt and within the medical community. The study was conducted again in 2000 after significant work to improve quality of obstetric and maternity care, increase access to family planning, and educate women and families about seeking prompt medical attention

EGYPT

Maternal Mortality Falls 50 Percent – the Latest Result of Improved Service Delivery and Information

Population	78,866,635
Maternal Mortality Ratio per 100,000 live births	130
Under-5 Mortality Rate per 1,000 live births	28.3
Modern Contraceptive Prevalence Rate (%)	57.6
Income per Capita (PPP international $)	5,370
HIV Prevalence (%)	<0.1
TB Case Detection Rate (% per year)	72
Malaria per 100,000	<0.01
Health Expenditure per Capita (US$)	316
Rural Sanitation Coverage (%)	52
Nurses and Midwives per 1,000	3.35 (2005)
Skilled Attendance at Birth (%)	79

during pregnancy and labor. It found that the maternal mortality ratio dropped 50 percent, from 174 to 84 per 100,000 live births. To create a sustained, self-sufficient system for measuring maternal mortality, USAID more recently supported the Ministry to establish a nationwide surveillance system to identify maternal mortality at all levels and analyze and discuss contributing factors, building the capacity of the government to perform subsequent studies independently.

Approximately 5.7 million **South Africans** were living with HIV in 2007, 1.7 million of whom were in need of antiretroviral therapy to mitigate the effects of the disease. Faced with this crisis, South Africa's HIV/AIDS program has rapidly scaled up treatment efforts with substantial support under PEPFAR. By March 2009, approximately 750,000 people were on anti-

SOUTH AFRICA

Improved Pharmaceutical Management Contributes to Increases in Coverage of Antiretroviral Therapy

Population	49,052,489
Maternal Mortality Ratio per 100,000 live births	400
Under-5 Mortality Rate per 1,000 live births	58
Modern Contraceptive Prevalence Rate (%)	59.8
Income per Capita (PPP international $)	9,450
HIV Prevalence (%)	18.1
TB Case Detection Rate (% per year)	78
Malaria per 100,000	28
Health Expenditure per Capita (US$)	869
Rural Sanitation Coverage (%)	49
Nurses and Midwives per 1,000	4.08 (2004)
Skilled Attendance at Birth (%)	92

retroviral therapy (ART), and the program was enrolling 30,000 new patients, monthly. Significant challenges remain, however, among these, maintaining and distributing an adequate drug supply.

With assistance under PEPFAR, South Africa is strengthening supply chains for ART with improved resource allocation and evidence-based management. To combat drug shortages for AIDS treatment that have occurred in some provinces, the South African government and USAID partners are modeling the costs of treatment to improve budget estimates, and the costs of prevention activities to better inform resource allocation across the program. Local stakeholders' capacity for evidence-based management is strengthened through training in M&E and enhanced information systems. Alignment of HIV/AIDS information systems with South Africa's own system improves the ability of local health care managers to better plan for treatment demand and responds to changes in the epidemic. Better information for resource allocation and evidence-based management will contribute to a stronger and more strategic national response to HIV/AIDS overall.

USAID re-established a presence in **Nicaragua** in 1990 after the end of the fighting in the 1980s and has provided technical assistance and support to the Nicaraguan Ministry of Health since 1994. USAID assisted with the decentralization of health management functions from the central level to the provincial offices, making significant progress in the management and administration of health centers and health posts, as well as maternal and child health and strengthening institutional capacity. Between 1990 and 2005, Nicaragua made significant progress on health indicators. Infant mortality was reduced from 52 to 30, and total fertility went from 5.2 to 2.7 average births per woman. By 2006–2007, Nicaragua had achieved such a high degree of equity in health indicators, specifically with respect to the contraceptive prevalence rate, that an analysis found that the population composition was no longer a relevant predictor of the overall use of contraceptives in the country.

Since 2005, USAID/Nicaragua has been working with the Ministry of Health to improve service delivery through key institutional reforms. Achievements include developing operational models, technical guidance, and support for a new health care delivery model that emphasizes delivering primary care in hard–to-reach areas, and reorganizing the Ministry of Health, including systems.

The human resources system was identified as a key bottleneck to health sector sustainability. USAID has worked to develop all human resources-related procedures and has

NICARAGUA

Decentralization, Improved Quality, and Human Resources Systems Reform Help Broaden Service Coverage

Population	5,891,000
Maternal Mortality Ratio per 100,000 live births	170
Under-5 Mortality Rate per 1,000 live births	35
Modern Contraceptive Prevalence Rate (%)	69.8
Income per Capita (PPP international $)	2,510
HIV Prevalence (%)	0.2
TB Case Detection Rate (% per year)	97
Malaria per 100,000	124
Health Expenditure per Capita (US$)	251
Rural Sanitation Coverage (%)	34
Nurses and Midwives per 1,000	1.07
Skilled Attendance at Birth (%)	74

improved existing health sector human resources through management and leadership training and the introduction of methodologies for competency-based on-the-job training. At the same time, USAID has helped ensure sustainability of these improvements through the development and introduction of a health administration curriculum for medical students. USAID made significant advances in increasing citizen participation in health, working with municipal development committees to organize and broaden citizen participation in planning, developing guides for social auditing of the health sector, and creating integrated municipal development plans.

As political developments reduced the effectiveness of USAID's health sector support to national and regional governments, efforts were successfully adapted to focus more on the local level. Building on past achievements, USAID shifted its focus to ensure that local service delivery was linked to, and integrated with, overall health sector improvements. In 2009, USAID continued to strengthen at national level the logistical systems for contraceptives and essential drugs, to improve quality of health services at hospitals and health center levels, and to increase access to community health services in the poorest municipalities of the country. USAID developed instruments to monitor the performance of hospitals and health units, including a system to track home visit information and to ensure that performance monitoring served to improve linkages between primary and secondary levels of care.

Universal access to health care in **Georgia** is guaranteed by law. In practice, Georgia's government has been unable to provide health care coverage to all its citizens. Hospitals were overspecialized and deteriorating, and primary health care was inconsistent when available. In 2004, USAID began devoting resources to HSS, including health care financing and policy development, national health accounts, organizational development of the Ministry of Labor, Health, and Social Affairs, and national reproductive health/family planning policy development.

In 2006, Georgia launched a health reform initiative relying on market mechanisms to increase the population's access to health care, to improve the quality of care, and to increase the efficiency of service provision. The USAID-supported reform effort includes widespread privatization of hospitals and primary health care facilities, a larger role for private health insurers, and better means testing for state-funded programs for poor and disadvantaged citizens. Since the unveiling of the new reform effort, Georgia has endorsed a hospital privatization master plan, has launched a health insurance voucher program for the poor and disadvantaged, has initiated a partly subsidized universal basic health insurance program, and is planning to privatize primary health care clinics. By 2009, the government had expanded health care coverage nationwide to cover additional population groupings, including: 150,000 public school personnel and approximately 900,000 poor beneficiaries.

GEORGIA

Governance Reforms Broadens Provision of Health Care Coverage

Population	4,616,000
Maternal Mortality Ratio per 100,000 live births	66
Under-5 Mortality Rate per 1,000 live births	35
Modern Contraceptive Prevalence Rate (%)	19.8
Income per Capita (PPP international $)	4,760
HIV Prevalence (%)	0.1
TB Case Detection Rate (% per year)	113
Malaria per 100,000	7
Health Expenditure per Capita (US$)	355
Rural Sanitation Coverage (%)	92
Nurses and Midwives per 1,000	3.89
Skilled Attendance at Birth (%)	98.3

USAID assisted the reform effort by helping to institutionalize the production and use of national health accounts to inform national decisionmaking; to develop management training programs for hospital and primary health care physicians, as well as the medical interventions classification system essential for more transparent health financing systems; to create model contract agreements between insurers and providers; and to design professional short training courses in health insurance and health service management.

Since the mid-1980s, the **Philippines** has been at the forefront among developing countries in its health sector reform efforts, aiming to expand access and quality of health programs to its large and widely-disbursed island population. With the assistance of USAID and other donor partners, the Philippines was among the earliest developing countries to experiment with changing management and financing to improve health system performance. USAID provided support to a succession of

PHILIPPINES

Pioneering Reforms to Improve Financing and Insurance

Population	97,976,603
Maternal Mortality Ratio per 100,000 live births	230
Under-5 Mortality Rate per 1,000 live births	34
Modern Contraceptive Prevalence Rate (%)	34
Income per Capita (PPP international $)	3,710
HIV Prevalence (%)	<0.1
TB Case Detection Rate (% per year)	75
Malaria per 100,000	53
Health Expenditure per Capita (US$)	223
Rural Sanitation Coverage (%)	72
Nurses and Midwives per 1,000	6.12 (2002)
Skilled Attendance at Birth (%)	62

innovative initiatives in financing for primary health care, health finance development, health sector reform, and local empowerment and development. Among the notable achievements under these initiatives was the Philippines' capacity to fully track its own health expenditure data and produce annually reported National Health Accounts starting in 1995.

The current USAID health program for the Philippines began in 2006 in close coordination with the Government of the Republic of the Philippines' Health Sector Reform Agenda. USAID's approach incorporates all stakeholders in the health sector, including central and local governments, donors, and the private sector. It supports local governance strengthening in health, formation of health policy, improved service delivery, and behavior change among medical practitioners and their clients. Programs also build capacity within local governing units for health management and service delivery, focusing on management systems, financing, service provision, and advocacy. USAID supports activities to mobilize the private sector to increase participation in the health sector. This program concentrates on promoting family planning and maternal and child health services through workplace initiatives, market development, and interventions to expand and strengthen private practice.

5. Best Practices in Research and International Technical Collaboration

USAID conducts health systems research and evaluation to identify, test, and facilitate partner country introduction and scale-up of best practices that reduce the burden of disease due to the major causes of mortality and severe morbidity. USAID health systems research meets four criteria: relevance to the successful implementation of health interventions in HIV/AIDS, malaria, tuberculosis, reproductive health and family planning, maternal and newborn health, and/or nutrition; potential to improve access, quality and/or affordability; ability to achieve demonstrable and measurable improvements within three to five years; and suitability for sustained use in low-resource settings.

USAID undertakes health systems research and evaluation in conjunction with WHO, UNICEF, USG agencies and international partners, and partner governments to address country-specific issues, as well as to resolve cross-country challenges and to establish the evidence base for the development of consensus on technical and policy issues. These research results are immediately made available to the wider public health community, and some also are submitted to peer-reviewed journals for publication.

Through research, USAID Missions help strengthen the capacity of ministries of health to employ evidence-based approaches and build the capacity of partner country researchers to contribute to improved health.

A listing of illustrative HSS interventions by core function (building block) is provided in Annex A.

Examples of Widely Used Best Practices Supported by USAID

Below are some notable examples of USAID's legacy of investment in developing best practices, new tools, and approaches over the last two decades:

- *National Health Accounts (NHAs)* are used by partner country policymakers to review resource allocation patterns in the public and private sectors. NHAs provide information to assess the efficiency of current resource use and provide options for health care reform. NHAs are now utilized in more than 100 countries.
- *The Demographic and Health Surveys (DHS)* is the gold standard demographic survey of the population, health, education, and nutrition of women and children in developing countries. It is used by multiple countries, donors, and United Nations agencies to track health conditions and progress in service delivery.
- *Quality Improvement Approaches* employed in advanced industrial countries have been adapted and pioneered by USAID in developing countries to improve the quality and reduce the cost of services.
- *Health Financing* has been an area of significant USAID focus to help expand access to quality care through public and private sector health care providers. Illustrative of this investment has been the development of community-based health financing schemes that provide savings and financing for essential health services. In more recent years, USAID has supported testing of other financing approaches to increase coverage and quality, such as pay for performance. USAID has also supported expanding credit to private sector health providers to improve services and access to health products.
- *Pharmaceutical Management* has been a signature area of USAID investment. Tools and approaches developed with support from USAID have set the standard for effective, cost-effective, and prudent use of antibiotics and other pharmaceutical commodities. Illustrative of this area of investment are the development of the WHO Global Strategy for the Containment of Antimicrobial Resistance and the creation of a drug and therapeutics committee approach for evidence-based and cost-effective selection and use of medicines.
- *Health Systems Impact* of donor aid programs have been studied with USAID assistance. This work led to the creation of the multi-donor-sponsored Global HIV/AIDS Initiatives Network (GHIN) that links teams in more than 20 countries. With PEPFAR support, USAID is collaborating with the U.S. Centers for Disease Control and Prevention in the design and implementation of public health evaluations of PEPFAR's impact on the delivery of other health services and health systems more broadly. The study is being carried out in Uganda, Kenya, Nigeria, Mozambique, and Haiti.

See Annex B for a summary of USAID-sponsored research and development.

Applications of New Tools and Approaches

In supporting the identification, testing, and scale-up of innovative approaches to HSS, USAID engages experts from its health systems resource center projects along with a wide array of health systems practitioners from throughout the developing world. USAID's best practices research supports new health systems tools and approaches at each stage on a continuum: from assessment, to development, to introduction, and on to field implementation. In the remainder of this section, we present the succession of developmental work for five illustrative examples of new tools supported by USAID:

1. Improvement collaborative (Service Delivery)
2. Health workforce productivity (Human Resources)
3. Monitoring and evaluation data (Information)
4. Controlling growth of drug resistance (Medical Products, Vaccines, and Technologies)
5. Health insurance and cost analyses (Financing)

Using Improvement Collaboratives to Strengthen Service Delivery

USAID expands the use in developing countries of modern quality improvement approaches that are common in the U.S. health system. With adaptation, these approaches have produced promising improvements in health care in a range of countries and across a number of health services. The most promising of these approaches is the improvement collaborative approach, pioneered by the Institute for Healthcare Improvement in Boston, which organizes teams of providers in a number of facilities to work together to improve the organization of a specific service. Using their own insights, the teams test changes in the way they deliver services and share what they learn with all the other teams.

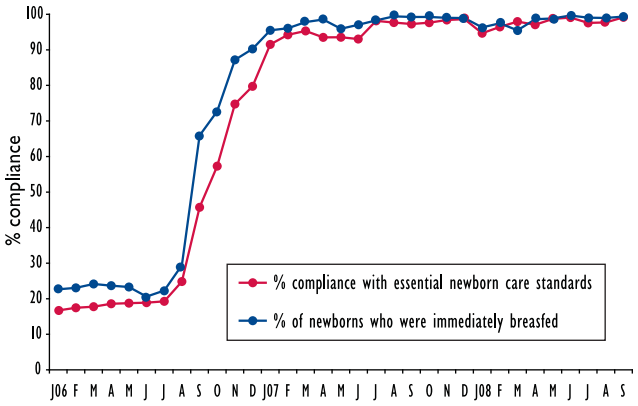
The Bolivia TB collaborative, aimed at strengthening the National TB Control Program's performance, addressed four main TB control problem areas: a) increasing detection of respiratory suspects and TB new cases; b) increasing practice of directly observed treatment, short course (DOTS); c) increasing cure rates and treatment success rates; and d) reducing abandonment rates.

After developing a tested package of program improvements, teams of providers participated in an organized effort to spread improved practices to additional facilities, reaching 217. These facilities achieved important improvements in rates of TB cures, treatment success, case detection, and treatment abandonment.

One of the oldest collaboratives is in Niger, where improved practices in obstetrical care – covering 32 percent of the countries maternities – reduced postpartum hemorrhage to less than 10 percent of baseline levels. These improvements have been sustained for more than three years, benefiting more than 100,000 deliveries. These teams have gone on to improve the care of the newborn, as compared to evidence-based quality standards (Figure 1).

Figure 1

Niger: Improving essential newborn care and practice of immediate breastfeeding in EONC Collaborative sites, January 2006-September 2008



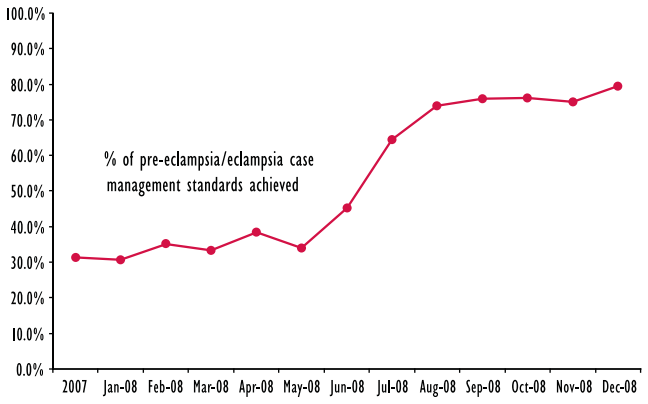
These teams also introduced pre-eclampsia and eclampsia improvements in 32 facilities as a part of a second phase (Figure 2).

Gauging and Improving Health Workforce Satisfaction and Productivity

USAID's health workforce research aims to improve tools to measure workforce satisfaction and productivity. A study on workforce retention in Uganda showed that, contrary to popular perception, average annual attrition rates are low (1.2 percent) in the public sector, but much higher (13 percent) in the private, not-for-profit sector. Findings from these studies showed major causes are leaving assigned posts and retirement, with the underlying causes being difficult working conditions,

Figure 2

Niger: Improving quality of case management for pre-eclampsia/eclampsia, 31 MOH facilities, 2007 (Baseline) and January-December 2008



inadequate equipment, poor on-job communications. Rates varied among different categories of health workers, indicating the need for different motivation mechanisms for each, which are now being identified. Based on this experience, USAID is refining tools for measuring retention and is sharing the Uganda case study for use in other countries.

Additional workforce productivity studies were conducted by USAID in Zanzibar and by the National Institute for Medical Research in mainland Tanzania to determine productivity levels and correlates of increased productivity as a basis for global guidance. An emphasis was placed on implementation at the facility level.

Applying findings from these studies, the Ministry of Health worked with facility stakeholders to select and implement interventions that are feasible, evidence-based, and inexpensive. An early assessment indicated increases in job satisfaction and in worker intentions to remain in these positions. From this work, USAID is continuing to develop a model for analyzing workforce satisfaction and productivity that can be used in other countries, including a package of measures and tools to improve productivity by identifying and resolving the sources of worker dissatisfaction and low motivation.

Gender-based inequality and violence in the workplace have a negative impact on the individual worker and his or her ability to perform effectively. The frequency with which this occurs is often not recognized or acted upon due to its socially sensitive nature. To address this, Rwanda's Ministries of Labor, Health and Gender and the Health Workers Union, with support from USAID, are using findings from a health facility worker survey to create policies and programs to protect workers from interpersonal violence and gender discrimination. The study found that female health workers face negative stereotypes and discrimination in hiring and promotion due to pregnancy and family responsibilities, and that a culture of respect and gender equality at work lowers the risk of violence. Study results are being used to advocate for ratification of international labor codes related to maternity protection and protection for workers with family responsibilities. The work in Rwanda is serving as a model for efforts in other countries.

Introducing New Methods for Information Management

USAID develops innovative approaches to information management tools to improve public health, health promotion, and clinical services. The Monitoring and Evaluation System Strengthening Tool, developed collaboratively by USAID, the Global Fund, Office of the U.S. Global AIDS Coordinator, UNAIDS, WHO, the World Bank, the Health Metrics Network, and Roll Back Malaria, allows stakeholders to evaluate how M&E activities are linked and integrated within the national M&E system and to develop costed action plans to strengthen the system. The Global Fund mandates use of this tool as part of its grant negotiation process and has applied it in 70 countries for HIV/AIDS activities, in 53 countries for malaria activities, and in 57 countries for TB activities.

To provide the highest-quality data to inform global HIV/AIDS efforts, USAID's DHS and AIDS Indicator Surveys (AIS) are important sources for global efforts coordinated by UNAIDS to estimate HIV/AIDS prevalence among the general population. USAID partners also have created statistical models to estimate the HIV prevalence rates of non-household populations such as inmates, the homeless, and sex workers.

Understanding and Protecting the Effectiveness of Medical Products

Understanding the community and facility factors that influence antimicrobial resistance (AMR) is critical to the design and implementation of appropriate interventions. USAID supported the development of an AMR module for population-based surveys that uses the same structure as the other modules of the DHS and is accessible for country-level use through the DHS Web site. USAID also supported comprehensive baseline surveys to identify facility-related issues and factors that impact on AMR (Ethiopia) and assess Accredited Drug

Dispensing Outlet dispensers' knowledge, practices, and attitudes relating to AMR and antibiotic use (Tanzania). Information obtained from these surveys is being used to design evidence-based and locally appropriate AMR advocacy and containment interventions.

The availability of case and drug management information is critical to the success of TB programs. An electronic tool that tracks patient and drug management information, developed with USAID support, has been adopted for nationwide implementation in Brazil, and is now being implemented in the Philippines, Dominican Republic, and Ukraine. In Brazil, the tool has resulted in an increased rate of case holding, case detection among contacts, and improved availability of needed medicines.

USAID, in collaboration with WHO, supported a multi-country study on the quality of AMRs in sub-Saharan Africa. The study results will provide representative information about the proportion of substandard and counterfeit AMRs in Africa and is expected to result in evidence-based strategies and implementation plans to improve medicines quality.

USAID also established, or strengthened, post-marketing surveillance systems to sample and test the quality of medicines in Latin America, Africa, and Southeast Asia. The post-marketing surveillance data gathered in Southeast Asia were instrumental in the success of a regional anti-counterfeit operation that led to the withdrawal of $6.7 million worth of spurious medicines. Overall, these results have been instrumental in raising local stakeholder awareness on the need to improve the quality of medicines in the market. In the Latin American countries, it has also led to the initiation of regulatory system improvements, including strengthening registration and national quality control laboratory capacity.

Improving Evidence and Practice in Health Financing

Improvements in health financing in developing countries depend on better understanding of current financing practices and on better evidence about large-scale approaches that work. USAID, in collaboration with the Health Research Unit of the Ghana Health Service, analyzed the impact of Ghana's National Health Insurance that covered 6 percent of the population by the end of 2008. Implementation of the insurance scheme led to significant improvements in health care utilization for illness or injury and reduction of out-of-pocket expenditures for care, including the expenditures for hospitalization. The findings from this study, as well as the operational challenges associated with scaling up, will be essential in informing other countries considering social health insurance.

Computer-based analytic tools, developed with USAID support, have improved the availability and quality of data for policymakers in the health sector. The HIV/AIDS Program Sustainability Analysis Tool (HAPSAT) and the SPECTRUM suite of models support priority setting and resource allocation decisions by partner governments planning a national response to HIV/AIDS. These models use detailed epidemiological, demographic, and economic data to estimate the financial and human resources required to sustain and/or scale up a portfolio of HIV/AIDS programs, and facilitate broad-based policy dialogue in the formulation of sustainable national strategies. HAPSAT has been piloted in Zambia and implemented in Cote d'Ivoire, Nigeria, Tanzania, and Ethiopia, with future introductions of this tool planned in Haiti and Vietnam. SPECTRUM has been used to facilitate program dialogue in Rwanda, South Africa, Namibia, Uganda, Botswana, and Nigeria. It is also used to support UNAIDS' biannual global projections of HIV/AIDS impact and resource needs and is currently being used to assess the implications of proposed WHO revisions to their HIV/AIDS treatment guidelines. Both models are routinely updated as new knowledge becomes available.

USAID Technical Collaboration

On an international basis, USAID joins with WHO, the World Bank, regional development banks, and other agencies to address health systems problems where discussion and consensus are needed to remove barriers to progress in health programs. Through its programs of international technical collaboration, USAID encourages countries, technical agencies, and other donors to adopt and use international standards and best practice guidelines set by WHO and other relevant bodies.

USAID is a full participant in two recently formed global organizations that are focused on two health systems core functions: information and human resources. The Health Metrics Network (HMN) addresses the need for health information and provides support to countries to conduct assessments and develop strategic plans to facilitate development of systems. USAID provides technical support to the work of HMN, including development of the HMN consensus technical framework for country health information systems (WHO, 2008). The Global Health Workforce Alliance

(GHWA) was created in 2006 as a common platform for action on human resources for health.

USAID is active in the work of other global health agencies that support health systems-related investments. These include the Global Fund, GAVI, and the Reproductive Health Supplies Coalition. These organizations encourage countries to address health systems barriers to program success and have provided funding for some types of health systems development work. In 2009, the Global Fund and GAVI have been engaged in a series of joint discussions with the World Bank for the purpose of harmonizing the three agencies' funding mechanisms for health systems-related investments. USAID has been active in consultations with the three agencies during these discussions. USAID is partnering with other donors, including the Bill and Melinda Gates Foundation, German Development Bank, and UNFPA to support the Reproductive Health Supplies Coalition – an unparalleled "brain trust" for health systems research and innovation. The innovative collaboration of PEPFAR, USAID, and the WHO led to the development of a global approach to task shifting (see Annex C).

6. Funding for Health Systems Strengthening

The WHO defines a health system as "all organizations, people, and actions whose primary intent is to promote, restore, or maintain health" (WHO 2007). In order to achieve this intent, health systems rely on a myriad of cross-cutting activities. For the purpose of clearly articulating and tracking an interlocking web of activities that define the goal of the health system, the WHO framework for HSS defines six core functions of a working health system: *human resources; medical products, vaccines, and other technologies; financing; information; leadership and governance; and service delivery.* These core functions are the basic, internationally understood areas that are used to judge and evaluate health systems. Their aggregate encompasses almost all non-research and administration activities funded by USAID.

The U.S. Department of State/USAID Foreign Assistance Framework tracks activities and funding according to an established set of disease-specific and health program-specific elements that capture and operationalize congressional appropriation sub-accounts and directives. The framework provides detailed information on programs and funding for the health elements – maternal and child health (MCH), malaria, tuberculosis, family planning and reproductive health, avian influenza, water supply and sanitation, HIV/AIDS, and other public health threats. Within each of the Elements, sub-elements track more specific activities that contribute to the element. The sub-elements of the MCH element, for example, involve issues in maternal and child morbidity and mortality such as treatment of child illness, birth preparedness and maternity services, and newborn care and treatment.

Because USAID takes a development approach to all health programming, much of what is done in the health sector is designed to develop and strengthen local institutions and capabilities. The Foreign Assistance Framework used by USAID to track funds, however, was not set up to track cross-cutting health systems activities, although it is possible to categorize some health sector assistance as part of the six functions, or building blocks popularized by WHO.

Three of the six health system functions – governance, finance, and information – are captured under each element as sub-elements of the framework. Funding for anti-microbial resistance-related programming (which focuses on setting pharmaceutical useage standards and changing behaviors by provider and patients), pharmaceutical management, and medical supplies can be calculated using other tracking tools. For the purpose of this report, the remaining activities under each element are classified separately as "service delivery including human resources," as the activities consist largely of sub-elements that fall in these functions. In the case of MCH, for example, the service delivery activities include immunization; newborn care and treatment; birth preparedness and maternity services; treatment of obstetric complications and disabilities; polio; nutrition; treatment of child illness; and household water, hygiene, and sanitation. Next year, under USAID's new health systems strategy, the Agency will be able directly to track funding for HSS activities under service delivery and human resources.

Based on an analysis of funding attributed to the Elements of the Foreign Assistance Framework, USAID has identified a total of $821,952,512 of $1,728,144,477 appropriated in FY 2008 (see Table 1) that can be classified in one of the six health systems functions. This amount includes funding from all accounts for all elements except HIV/AIDS and avian and pandemic influenza. (HIV/AIDS funding is analyzed separately, below, and Avian and Pandemic Influenza funding is emergency funding meant for the immediate response to the pandemic.) In addition, another $906,191,965 is classified as service delivery and human resources (see Table 2). At this time, USAID cannot identify specific health systems activities for these funds, but this will become possible as specific health systems indicators and tracking tools are developed.

It should be noted that the funding represented in the charts is not in addition to the funds appropriated for health or disease-specific areas, but rather another way of representing this same funding in terms of the functions of the health system.

HIV/AIDS

As of the end of fiscal year (FY) 2008, USAID had implemented approximately 57 percent of the interagency U.S. President's Emergency Plan for AIDS Relief (PEPFAR) bilateral funding. In FY 2009, total bilateral enacted funds for PEPFAR amounted to $5,462 billion, to date, approximately $2.4 billion implemented by USAID. At USAID, HIV/AIDS programs engage in strengthening health systems through:

Table 1. Health Systems-related Funding
(all accounts except HIV/AIDS and Avian Influenza)
Cross-cutting Health System Functions within All Health Elements

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$336,970,287
Information	$115,730,519
Governance/Finance/Policy	$220,267,753
Other (health system-related activities)	$148,983,507
Total	**$821,952,512**

Table 2. Service Delivery/Human Resources Functions Within Each Health Element*
(The current framework cannot track the proportion of these funds that related directly to HSS activities.)

Service Delivery/Human Resources	Total FY08 Planned Funding
Tuberculosis	$79,960,819
Malaria	$123,312,981
Maternal and Child Health	$460,664,970
Other Public Health Threats	$30,413,064
Family Planning/Reproductive Health	$211,839,861
Total	**$906,191,965**

Note: Tables do not include funding for HIV/AIDS or Avian Influenza.

Separate Health Elements
(Tables 3 to 7 add up to the totals in Table 1, above)

Table 3. TUBERCULOSIS

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$48,642,423
Information	$8,240,950
Governance/Finance/Policy	$3,707,356
Other (health system-related activities)	$20,723,670
Total	$81,314,399

Table 4. MALARIA

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$164,153,551
Information	$21,730,774
Governance/Finance/Policy	$50,467,580
Other (health system-related activities)	$35,591,253
Total	$271,943,158

Table 5. MATERNAL AND CHILD HEALTH

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$72,575,029
Information	$32,508,664
Governance/Finance/Policy	$50,467,580
Other (health system-related activities)	$38,151,488
Total	**$193,702,761**

Table 6. OTHER PUBLIC HEALTH THREATS

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$0
Information	$557,161
Governance/Finance/Policy	$60,927,392
Other (health system-related activities)	$4,308,409
Total	$65,792,962

Table 7. FAMILY PLANNING AND REPRODUCTIVE HEALTH

Health Systems Functions	Total FY08 Planned Funding
AMR/Pharmaceutical Management/Medical Supplies	$51,600,000
Information	$52,692,970
Governance/Finance/Policy	$99,747,925
Other (health system-related activities)	$49,848,687
Total	**$253,889,572**

- focused investments necessary to achieve HIV/AIDS prevention, care, and treatment goals;
- investments in activities with additional non-disease-specific impacts that benefit to the overall health system; and
- targeted leveraging with other donors or U.S. Government (USG) partners.

Based on a separate analysis, OGAC has determined the following investments in HSS for FY 2009 in 31 countries where PEPFAR money is implemented by all USG agencies. Drawing on Country Operational Plans, the analysis below reflects funding for HSS across all PEPFAR implementing agencies in the Elements listed, totaling $922 million. The $922 million reflects an initial estimate calculated in February 2009. OGAC anticipates HSS investments to increase in FY 2009 once all resources have been programmed in the Country Operational Plans (COPs). Plans for data collection in the future should allow for Agency attribution.

- Logistics and commodities support: $228.5 million
- Strategic information: $138.2 million
- Human capacity development: $379.9 million
- Program activities attributable to other HSS: $175.7 million

PEPFAR also invested in infrastructure and construction in FY 2009 (see box, right).

Construction and Rehabilitation

USAID assistance can include construction and rehabilitation of health facilities where needed and where support is not available from other donors. A total of $117,823,310 in construction and rehabilitation was provided during FY 2008 from all sources and appropriation accounts, except for the PEPFAR program (see Table 1, below). Of significance, a large portion of the spending in the Middle East region is supporting the construction of essential health facilities.

TABLE 1: USAID CONSTRUCTION AND REHABILITATION IN HEALTH FUNDING BY PROGRAM LOCATION AND REGION
(USD FY 2008)

Location	Region	Total
Field Mission	Africa	$26,234,924
	Asia	$16,918,560
	Europe & Eurasia	$4,729,648
	Latin American and the Caribbean	$8,823,986
	Middle East	$59,075,192
Field Mission Subtotal		$115,782,310
Centrally-Managed Field Programs		$2,041,000
GRAND TOTAL		$117,823,310

Below is an estimate of PEPFAR investments in construction and rehabilitation, especially laboratory infrastructure, across all USG agencies, totaling $201,300,000 (see Table 2, below). OGAC anticipates FY 2009 investments to increase once all resources have been programmed in the Country Operational Plans (COPs).

TABLE 2: PEPFAR INVESTMENTS IN CONSTRUCTION AND REHABILITATION
(USD FY 2009)

Category	Total
Laboratory Infrastructure	$172,600,000
USG-managed Construction Projects	$28,700,000
GRAND TOTAL	$201,300,000

7. Measuring Progress in Health Systems Strengthening

Given the complexity of HSS interventions and the need to tailor interventions based on country situation, the global community has yet to reach a consensus on internationally approved indicators and benchmarks to measure HSS. The lack of consensus surrounding a limited set of tested and accepted indicators related to health systems hinders efforts to track progress. Many valid indicators exist for tracking health systems, but there is no standard set of indicators collected by one or more countries that could facilitate the analysis necessary to demonstrate evidence-based results of investments in health systems. USAID currently collaborates with the Health Metrics Network, WHO, and other research centers in the United States and overseas devoted to the development of better consensus health systems indicators and progress measurement tools.

USAID and its partner organizations have developed a variety of methods for measuring the individual areas of HSS. At the global level, USAID has contributed the following tools to monitor and benchmark HSS interventions:

- *The Health Systems Assessment Approach* is a key priority-setting tool that guides a rapid yet comprehensive review of the health system's six functions. Health System Assessments have been conducted to inform the development of National Health Strategies, Health Sector Reviews, and USAID Field Missions Strategic Planning and Program Design (e.g., Benin, Angola, Nigeria, Vietnam, Pakistan, Southern Sudan, and Namibia)

- *The Health Systems Database* compiles key health systems indicators from existing online data sources (e.g., DHS, WHO Statistical Information System, and World Bank World Development Indicators) to produce data-driven health system profiles and analytical tools

- *Health Systems Dashboards* are a notable feature of the Health System Database and facilitate benchmarking country health systems against their regional and income-group peers. These visual representations of health systems indicators guide users to key areas of the health systems building blocks that should be further analyzed.

USAID has also developed tools to monitor and benchmark HSS at the regional level. For example, in Latin America and the Caribbean:

- *The Guidelines to Assess the Steering Role Function of National Health Authorities* assists countries in the Americas to conduct a self assessment of their capacity to provide adequate stewardship and oversight of public and private health sectors in order to identify areas to strengthen and improve.

- *The Health Sector Analysis Methodology* outlines the country's health situation as well as the performance of the health system. The Analysis also orients the identification and selection of priority interventions for health policy formulation and health systems development. The Health Sector Analysis process results in the identification of policies and/or plans, programs, projects and interventions oriented to maximize the impact of the sector in reaching national health objectives and/or priorities.

- *Health Systems and Services Profiles* have been completed and updated in three rounds in the Americas. They provide a succinct and analytical description of the structure and dynamics of each country's health system.

As USAID continues to work with other development partners and country stakeholders to expand on existing tools and approaches and contribute to addressing the major challenges to measuring HSS actions, it will address the following considerations:

The USAID approach makes strengthening health systems a deliberate and measurable aspect of all health programs. Tools are being developed to begin tracking progress in each of the six health functions, as well as the implementation costs. This approach will help USAID monitor its investments in HSS

and draw data-based conclusions about their contribution to improving access, coverage, quality, and efficiency.

At the country level, USAID will continue support to strengthening national health information systems, institutionalizing key health systems data processes (e.g., resource tracking using National Health Accounts and Subaccounts), streamlining surveys and other data collection tools, and strengthening country capacity for management and use of data. At the global level, USAID will continue to work with other development partners and global stakeholders to build the empirical evidence on health systems indicators, to set targets and thresholds useful for programming purposes, and to participate in discussions and processes on refining the concepts and measurement tools around health systems performance.

8. Conclusion: The USAID Approach to Health Systems Strengthening

The long-term sustainability of partner country programs that address child, maternal and reproductive health; that control major diseases,[2] and that reduce abortion will depend in large measure on the capacity of partner country public and private health systems to produce high quality, accessible, and efficient services. The challenge for USAID and the partner countries with which it works is to identify and strengthen those parts of health systems whose strengthening is most critical in the local context to addressing the major local drivers of human health, collaborating with partner country, private sector, and other donors to reach a minimum standard across each core function.

While many kinds of activities can contribute to strengthening health systems, USAID uses a strategic approach that is based on extensive evidence and experience to target the most critical health systems function needs and elements. USAID helps countries move toward sustainability through continued integration of disease-specific interventions and information to promote health and prevent disease into the broader health system – increasing efficiency while protecting progress on disease-specific interventions.

USAID helps countries build functionality in six core areas: service delivery; financing; leadership and governance; human resources; information systems; and medical products, vaccines, and technologies. In countries that are more advanced in integration and basic functionality, USAID more comprehensively addresses often substantial barriers to equity and sustainability. Helping countries enhance the effectiveness of the health workforce is pivotal to making progress in all of these areas.

USAID's programs will continue to emphasize quality improvement in health care delivery, with special attention on providing highly cost-effective health promotion and disease prevention information and services, eliminating waste and inefficiency, strengthening strategic planning and management systems, strengthening monitoring and evaluation (M&E) systems, and developing partner-country capacities. USAID programs will continue to develop the tools and approaches necessary to strengthen and expand the health workforce and to sustain these improvements. They will improve the capacity of partner countries to provide information, services, essential drugs, and other health commodities in the communities where people live, and assist countries to develop and apply improved health financing strategies that mobilize adequate funds for health services, pool resources to spread costs, and efficiently allocate resources for equity and optimal health impact.

2. Especially HIV/AIDS, malaria, tuberculosis, and neglected tropical diseases.

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Population The midyear population estimate for July 1 of the given year.
Source: U.S. Census Bureau International Database 2009

Maternal mortality ratio The estimated number of women who die as a result of pregnancy or childbirth per 100,000 live births.
Source: Demographic Health Surveys (2003–08), except for Afghanistan (Bartlett 2002); Albania, Georgia, Kazakhstan, Kyrgyzstan (MICS 2005–06); Nicaragua, Southern Sudan (WHO 2005)

Under-5 mortality rate Annual number of deaths that occur in children 0–4 years old per 1,000 births (five-year period preceding survey).
Source: Demographic Health Surveys (2003–08), except for Afghanistan (Afghanistan Health Survey [AHS] 2006); Albania, Georgia, Kazakhstan, Kyrgyzstan (MICS 2005–06); Southern Sudan (Sudan Household Health Survey [SHHS] 2007); Nicaragua (RHS 2006)

Modern contraceptive prevalence rate Percent of currently married women ages 15–49 currently using a modern method of contraception. Modern methods include oral contraceptives, IUDs, injectables, female and male sterilization, all emergency contraception, and barrier methods (diaphragm, foam, jelly, male and female condom).
Source: Demographic Health Surveys (2003–08), except for Afghanistan (AHS 2006); Albania, Georgia, Kazakhstan, Kyrgyzstan (MICS 2005–06); Southern Sudan (Population Reference Bureau 2009); Nicaragua (RHS 2006)

Income per capita The gross national income per capita (PPP international $) comprises the total value of currently produced final goods and services produced by the domestic economy of a country measured within a given period of time, usually a year, and divided by its midyear population.
Source: WDI 2009, Data are for 2007

HIV prevalence Estimated number of adults and children living with HIV. Adults are 15 years and over. Children are defined as those ages 0–14 years.
Source: UNAIDS 2007

TB case detection rate The percentage of the annual new smear-positive notifications of the estimated annual new smear-positive incidence.
Source: WHO Global TB Database 2009. Data are for 2007

Malaria cases per 100,000 Number of malaria cases per 100,000 of the population during the year for which data were reported.
Source: WHO Roll Back Malaria Database 2003

Health expenditure per capita The sum of public and private health expenditures figured as a percentage of a country's gross domestic product. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health, but does not include provision of water and sanitation.
Source: WHOSIS 2009. Data are for 2006

Rural sanitation coverage (%) Percentage of the rural population with access to improved sanitation facilities. Refers to facilities that ensure hygienic separation of human excreta from human contact, including: flush or pour-flush toilet/latrine to piped sewer system, septic tank, or pit latrine; ventilated improved pit latrine; pit latrine with slab; and composting toilet.
Source: UNICEF, WHO 2008 Joint Monitoring Programme for Water Supply and Sanitation Report

Nurses/midwives per 1,000 population The number of nurses and midwives per 1,000 population.
Source: WHO Global Health Atlas 2009. Data are for various years:. Haiti (1998); Peru (1999); Honduras (2000); Kenya, Philippines (2002); Nicaragua (2003); Nepal, South Africa (2004); Egypt, Rwanda (2005); Tanzania (2006); Albania, Armenia, Ethiopia, Georgia, Kazakhstan, Kyrgyzstan (2007); Ghana, Liberia, Niger (2008)

Skilled attendance at birth Percentage of births attended by a doctor, nurse, or trained midwife
Source: Demographic Health Surveys (2003–2008), except for Afghanistan (AHS 2006); Albania, Georgia, Kazakhstan, Kyrgyzstan (MICS 2005–06); Southern Sudan (SHHS 2007); Nicaragua (RHS 2006)

Annex A. Illustrative Health Systems Interventions

USAID assists countries to strengthen health systems with targeted, cost-effective interventions to improve policies and management of one or more core functions (building blocks), below, whether to create a sustainable process in-country or to build local capacity, or both.

Core Functions	Illustrative Priority Health Systems Strengthening Interventions
Human Resources (HR)	• *To improve workforce policy and planning:* – Strengthening HR information systems – Supporting development/implementation of evidence-based HR strategies – Testing and expansion of workforce planning and management innovations – Training HR managers/developing a cadre of professional HR managers – Strengthening HR units within ministries of health/organizations – Implementing innovative worker contracting mechanisms – Modeling rational distribution of HR for health – Advocacy for policies that will increase workforce retention and productivity • *To better prepare the workforce:* – Strengthening pre- and in-service curricula, faculty/trainers, and methodologies – Developing/implementing continuous professional development programs, such as through professional associations – Training workers in critical gap areas (technical/clinical, logistics, pharmaceuticals, commodities, etc.) – Integrating a competency approach to counseling and interpersonal communication into health workers' best practices • *To support worker performance on the job:* – Implementing work climate improvement programs – Implementing worker retention schemes – Planning and implementing task shifting programs – Establishing norms of service for health workers – Strengthening supportive supervision systems
Financing	• *To improve mobilization:* – Expanding private sector credit – Improving transparency and accountability for donor funds • *To improve pooling:* – Assessing available risk groupings for use in scaling up insurance – Building management ability and actuarial soundness of community-based health insurance mechanisms – Preparing information systems and HR to support movement toward national health insurance • *To improve allocation:* – Analyzing options for optimizing targeted subsidies – Planning and implementing performance-based financing – Developing and analyzing cost-based models of service production options – Building skills of managers to develop and manage contracts – Upgrading systems for financial management – Opening investments in private provision and franchising – Creating incentives for evidence-based decisionmaking • *To improve knowledge base:* – Creating networks of National Health Accounts country teams – Facilitating community participation in insurance enrollment; adoption of equity as a norm; and advocacy for adequate financing

Core Functions	Illustrative Priority Health Systems Strengthening Interventions
Medical Products, Vaccines, and Other Technologies	• *To promote pharmaceutical sector governance:* – Developing policies, systems, and procedures to promote transparency and accountability and reduce vulnerability to corruption – Strengthening regulatory capacity to ensure the quality, safety, and efficacy of medicines – Increasing participation of civil society for pharmaceutical policy advocacy – Developing norms and standards, such as pharmaceutical management standard operating procedures, to improve delivery of pharmaceutical services – Developing public standards and pharmacopeial monographs for procurement and for the analysis of medicine quality • *To improve availability of quality medical products:* – Procuring a wide range of pharmaceuticals for USG-supported health programs – Providing technical assistance to strengthen procurement practices and supplier performance monitoring – Providing technical assistance for the design and operation of reliable, efficient, and effective pharmaceutical management systems/supply chains – Promoting integration across the supply chain and strengthening country capacity (including procurement processes, forecasting/quantification, supply planning, storage and distribution, etc.) – Developing and implementing commodity security strategies at different levels – Strengthening national quality control laboratories and pharmacovigilance systems, including post-market surveillance of the quality of medicines – Providing technical assistance to improve current compliance of Good Manufacturing Practices among manufacturers producing USAID-priority medicines – Developing strategies for the introduction and integration/dissemination of new medical products and technologies into existing systems • *To improve access to essential pharmaceutical services:* – Increasing use of the private/NGO/faith-based organization sectors to increase access to medicines in underserved areas, including the use of innovative financing schemes – Establishing and sustaining accreditation or certification approaches to improve the quality of products and services provided by local drug distribution outlets • *To promote the rational use of medicines:* – Providing technical assistance and training to develop human resource capacity to improve prescribing and dispensing practices – Promoting adherence approaches that ensure treatment effectiveness – Supporting curriculum reform in public health educational institutions to include rational use and antimicrobial resistance (AMR) issues – Developing AMR advocacy and containment programs, including institutional interventions (e.g., drug and therapeutics committees, infection control); coalition building; and communication/educational campaigns
Information	• *To enhance country capacity:* – Supporting organizational development, management leadership, and individual capacity to produce, analyze, disseminate, and use strategic health information, from national level to community level • *To mobilize and coordinate resources:* – Facilitating country-led, multi-stakeholder assessment of current Information system components and processes to inform near- and long-term coordinated strengthening strategies and costed action plans • *To harmonize indicators:* – Developing global standards for, and providing assistance in, country application of key indictors and M&E guidelines • *To generate reliable and timely data sources:* – Strengthening country processes and systems, including routine health information systems, integrated disease surveillance and response systems, nationally representative censuses and household and facility surveys, and program M&E • *To strengthen data management and quality:* – Developing and supporting implementation of tools to identify weaknesses and plan for priority strengthening actions • *To facilitate data dissemination and use:* – Facilitating the translation of data into user-friendly information and document its use for evidence-based management decisionmaking, planning, advocacy, and policy development – Building community participation in evidence-based decisionmaking for health and in advocacy for improved response to disease surveillance and crises

Core Functions	Illustrative Priority Health Systems Strengthening Interventions
Leadership and Governance	• *To rationalize ministry of health stewardship role:* – Strengthening leadership, management capacity, and systems – Strengthening systems for decentralized health sector management – Assisting ministries of health to strengthen capacity and systems for coordinating NGO, donor, and private sector engagement. – Conducting policy dialogue based on evidence • *To empower civil society:* – Benchmarking health system performance – Strengthening national and global networks – Building advocacy capacity – Monitoring impact of global initiatives • *To empower private sector:* – Facilitating enabling legal and regulatory environment – Carrying out private sector assessments – Establishing public-private partnerships and dialogue – Strengthening government stewardship for oversight of the private sector • *To strengthen leadership and management:* – Providing leadership and management training • *To build knowledge base:* – Carrying out national health system assessments – Applying health governance conceptual framework – Increasing community coalition building – Packaging and disseminating information to increase transparency
Service Delivery	• *To improve access to and quality of services:* – Developing evidence-based, integrated packages of services and guidelines – Testing innovative training strategies – Introducing modern quality improvement methodologies and the improvement collaborative – Structuring public-private partnerships for improved quality and access – Linking community-based and facility-based services to reach target audiences – Rationalizing the pattern of patient referrals – Improving interpersonal communication skills of health care providers – Ensuring availability of supplies and commodities at service delivery points • *To involve communities and individuals in healthy behaviors:* – Establishing and sustaining social marketing of health-related products or services – Establishing and sustaining community behavior change communication – Empowering health consumers in social mobilization for infrastructure development and maintenance – Introducing spousal communication services to address gender equity – Increasing the quality and quantity of health reporting in the media – Linking health information and services with local cross-sectoral programs • *To gather and use data to improve health services:* – Establishing participatory monitoring of services and increased prevention efforts – Supporting knowledge management for health care improvement

Annex B. Summary of USAID-sponsored Health Systems Research and Development

Human Resources

- *Human Resources for Health (HRH) Action Framework.* First published in the 2006 World Health Report, this Web-based framework and tools provide a comprehensive approach to addressing HRH challenges at the country level. The result of collaboration among multilateral and bilateral agencies, donors, partner countries, NGOs, and the academic community, it has now been applied in at least four countries with support from USAID and the Global Health Workforce Alliance (GHWA). It also served as the basis for GHWA's Kampala Global Forum on HRH, held in March 2008.

- *Human Resource Information Systems.* This suite of three databases to 1) track worker training, certification, and licensure; 2) manage and deploy personnel; and 3) provide long-term workforce modeling and planning, has been designed using free and open source software to avoid licensing and other long-term expense and maintenance issues. The databases are being implemented in eight countries to date, supported by a constellation of activities, including forming participatory stakeholder leadership groups and training in data-driven decisionmaking for strengthening the health workforce.

Medical Products, Vaccines, and Technologies

- *Global Health (GH) Toolkit.* GH tools and approaches continue to dramatically improve supply chain management and the availability of contraceptives and essential medicines, thereby reducing stockouts and assuring continuing contraception and effective treatment for HIV/AIDS, malaria, TB, and MCH programs worldwide.

- *WHO Global Strategy for the Containment of Antimicrobial Resistance.* USAID provided technical and financial support to develop this landmark WHO document, which provides a comprehensive set of evidence-based, consensus recommendations for AMR containment. USAID has also supported the development of successful country-specific AMR intervention packages based on the strategy, involving health providers, patients, education reform, the media, governments, and health systems.

- *Quality Assurance (QA) of Medicines.* GH continuing advocacy regarding the critical importance of medicines quality has moved USG regional and country programs and other international initiatives to focus specifically on QA system issues. For example, USAID-supported post-marketing surveillance data and training were instrumental in facilitating the successful Interpol-led "Operation Storm" in the Greater Mekong Region. About $6.7 million of counterfeit medicines were confiscated in Cambodia, China, Laos, Thailand, Indonesia, Vietnam, and Singapore. Government actions also led to the banning of selected products, manufacturers, and distributors.

- *Drug and Therapeutics Committees (DTCs).* USAID-supported training and follow-up programs have capacitated hospitals to implement evidence-based and cost-effective selection and use of medicines. Nineteen courses have trained 861 participants from 71 countries, resulting in the establishment or restructuring of more than 92 DTCs worldwide and implementation of hundreds of DTC-related interventions.

- *Improving Supply Systems.* An innovative collaboration between USAID and the U.K. Department for International Development led to the design and nationwide rollout of a new distribution system for condoms and contraceptives in Zimbabwe. The system adapts commercial sector best practices and has dramatically improved product availability at service facilities. HIV commodities have since been added to the system with similar results, and USAID is now conducting research to add more health supplies.

- *Mobilizing Resources.* USAID technical assistance supported a Global Fund decision to fund more than $2.4 million for contraceptives in Rwanda for 2008–10. For Rwanda, and globally, this was the first-ever such decision, and a major breakthrough for leveraging new funding sources for contraceptives.

Information

- *USAID's Demographic and Health Survey (DHS).* For the past 25 years, DHS has been the gold standard in household

survey methodology, innovating in data collection, analysis, and dissemination, including the use of biomarkers, the application of geographic information systems, and offering of the Web-based STATcompiler for access to datasets.

- *Global Standards for Health Information Systems and M&E.* USAID has provided leadership for HMN, Routine Health Information Network (RHINO), and toolset for Performance of Routine Information System Management (PRISM), as well as technical leadership in M&E of health, population, and nutrition programs, including M&E manuals and indicator guides.

- *Support of the "Third One."* USAID has also provided technical leadership and collaborative/coordinated efforts in support of the "Third One" to strengthen country capacity and HR in M&E for effective and efficient use of resources and results-based management.

Financing

- *Performance-based Financing (PBF).* USAID experience contributed to Norway's decision to grant $105 million to the World Bank for PBF in developing countries. USAID's manual, Paying for Performance in Health: Guide to Developing the Blueprint is used widely, including by the World Bank for global training.

- *Private Sector Loans.* USAID leveraged $206 million in commercial lending (which was 24 times the amount of obligated funds) for private providers of reproductive health, family planning, and other health services in Nicaragua, Zambia, Nigeria, Peru, the Philippines, Romania, and Uganda.

- *National Health Accounts (NHA).* More than 100 developing countries have applied NHA. Developing countries, rather than donor agencies, planned the 6th global NHA symposium in China in 2009. USAID work has attracted substantial grant funding from the Bill & Melinda Gates Foundation to this area of work. Countries such as Malawi and Rwanda have used NHA results to improve health policy.

Leadership and Governance

- *Health System Assessment Approach.* Assessments are being conducted increasingly as country-driven applications of the methodology. In 2008–2009, the West Bank, Namibia, Vietnam, Nigeria, and Senegal have adopted the approach.

- *Private Sector Assessment Approach.* Country application creates awareness of enabling or constraining environments for private sector participation in health, while providing information for expanding policy dialogue and identifying options for private sector market entry and growth.

- *Health System Action Network (HSAN).* HSAN is a global HSS peer network that is now routinely sought out by global initiatives for advice and input.

- *Virtual Leadership Development Program.* Teams from the public sector, NGOs, faith- and community-based organizations, and Cooperating Agencies from 53 countries in Latin America and the Caribbean, Africa, Asia, and the Near East have participated in the program since 2002.

Service Delivery

- *Making Improvement Part of Service Delivery.* Using the results of pioneering adaptations of modern Quality Improvement (QI) approaches in developing countries, local health providers are now carrying out the method.

- *Quality Improvement Approaches.* Using modern QI approaches, it is possible to demonstrate that health service delivery can improve even with no new resources by better organizing the process of care.

- *Using market forces.* USAID developed social marketing, partnered with commercial corporations on profitable models that reach the underserved, and brokered public-private partnerships to improve the efficiency of the health system in increasing access to and quality of health products and services.

Annex C. Implementing the WHO/PEPFAR Task-shifting Recommendations and Guidelines

Background

The World Health Organization (WHO) and the Office of the U.S. Global AIDS Coordinator (OGAC) established a strategic partnership to provide a framework for PEPFAR countries to strengthen and expand the existing workforce to scale up HIV services through the use of "task shifting." Task shifting involves the rational redistribution of tasks among health workforce teams. Specific tasks are moved or shifted, where appropriate, from highly qualified health care workers such as doctors and nurses to health workers with shorter training and fewer qualifications in order to make more efficient use of the available human resources for health.

In January 2008, Task Shifting Global Recommendations and Guidelines were released by the WHO. Soon after, implementation and national scale-up of the guidelines was begun in PEPFAR countries that expressed an interest in implementing task shifting on a national level. At the end of FY 2009, 14 of the 18 countries submitting a full country operating plan indicated that they had implemented the task shifting guidelines in order to expand their health workforce capacity to deliver HIV services.

Policy change to allow for task shifting from more specialized to less specialized health workers is the one human resources for health strategy that will have the most significant and most immediate effect on increasing the pool of health workers to deliver HIV services.

The adoption of task shifting has the potential to rapidly strengthen and expand the existing workforce to deliver HIV services. The WHO task shifting global recommendations and guidelines were developed in collaboration with PEPFAR, and with PEPFAR support, to assist countries to address the clinical, policy, regulatory, and financial frameworks needed to implement task shifting on a national level.

Implementation

The recommendations and guidelines were widely disseminated at a global consultation and made available through the WHO Web site and through PEPFAR technical considerations, which promote their adaptation and implementation in PEPFAR countries. National scale-up is coordinated and carried out by a national Task Shifting Working Group, with technical assistance provided by WHO and relevant PEPFAR staff and implementers.

Successful implementation of task shifting requires a multi-sectoral approach, with all stakeholders involved in the national implementation. The guidelines recommend that, in each country where implementation or scale-up of task shifting is occurring, a National Task Shifting Working Group should be established with participation from ministries of health, education, and labor; USG teams; national academic institutions; professional associations; regulatory bodies; and civil society.

The priority components of country implementation include:

- Country adaptation of the global guidelines into the national context,
- Technical support for implementation of national training and credentialing activities,
- Development of supervision and mentoring systems to ensure quality of service,
- Support for the development of enabling financial conditions at the local level,
- Development of a monitoring and evaluation framework including an economic analysis, and
- Early evaluation of the implementation of the task shifting approach.

PEPFAR is assisting countries to implement task shifting through technical assistance by regional and in-country human resources for health (HRH) advisors, country and headquarters HRH technical working groups, implementing partners, and collaboration with WHO regional and country teams.

Evaluation

In 2009, PEPFAR provided support for a multi-country public health evaluation (PHE) to assess the impact of task shifting for the provision of antiretroviral therapy (ART) on patient outcomes. Three countries – Nigeria, Uganda and Tanzania – are participating in the evaluation, which, in addition to evaluating patient care and treatment outcomes, is expected to assist countries to identify best practices for training and supportive supervision necessary to safely implement task shifting. This is a three-year PHE. Site selection and preparation has begun, and countries are waiting for institutional review board approval when nurse training and patient enrollment will occur.

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