USAID/KENYA: ASSESSMENT OF NATIONAL MONITORING AND EVALUATION AND HEALTH MANAGEMENT INFORMATION SYSTEMS

USAID/KENYA: ASSESSMENT OF NATIONAL MONITORING AND EVALUATION AND HEALTH MANAGEMENT INFORMATION SYSTEMS

This document (Report No. 10-01-403) is available in printed or online versions. Online documents can be located in the GH Tech website library at www.ghtechproject.com/resources. Documents are also made available through the Development Experience Clearing House (www.dec.org). Additional information can be obtained from:

ACKNOWLEDGEMENTS

CONTENTS

ANNEXES

FIGURES

TABLES

ACRONYMS

2G	Second-generation cell phone technology
3G	Third-generation cell phone technology
AIDS	Acquired immune deficiency syndrome
AIDSCAP	AIDS Control and Prevention Project
AOP	Annual Operational Plan
APHIA II	AIDS, Population, and Health Integrated Assistance, Phase II
APHIAplus	Next round of APHIA projects, to start January 1, 2011
CDC	Centers for Disease Control and Prevention
CHEW	Community health extension worker
CHW	Community health worker
COBPAR	Community-Based Program Activity Reporting
CU	Community unit
DANIDA	Danish International Development Agency
DDSR	Division of Disease Surveillance and Response
DFID	Department for International Development (U.K. Development Assistance)
DHIS 2	District Health Information System, v.2
DHMT	District Health Management Team
DHRIO	District Health Records Information Officer
DHS	Demographic and Health Surveys
DHS III	A contract that conducts Demographic and Health Surveys
DPHK	Development Partners in Health, Kenya
DoMC	Division of Malaria Control
DoRH	Division of Reproductive Health
DP	Development partners (i.e., other donors)
DQA	Data quality assurance
DSS	Demographic Surveillance System
EHR	Electronic health records
EMR	Electronic medical records
FP/RH	Family planning/reproductive health
FTP	File Transfer Protocol
GH Tech	Global Health Technical Assistance Project
GoK	Government of Kenya
HIS	Health Information System (the overall system of all data used by the MoH)

HISCC	Health Information Systems Coordination Committee
HISP	Health Information Systems Program
HIV/AIDS	Human immunodeficiency virus/acquired immune deficiency syndrome
HMIS	Health Management Information System
HMISD	Health Management Information System Division
HR	Human resources
HRIO	Health Records Information Officer
HSCC	Health Sector Coordinating Committee
HSSF	Health Sector Service Fund (a SWAp mechanism)
ICC	Inter-Agency Coordinating Committee
ICT	Information and communication technology
IDSR	Integrated disease surveillance and response
IP	Implementation partners (i.e., contractors and other implementing agencies)
JICC	Joint Interagency Coordinating Committee
KAIS	Kenya AIDS Indicator Survey
KDHS	Kenya Demographic and Health Survey
KEPH	Kenya Essential Package for Health
KHSSP	(World Bank) Kenya Health Sector Support Project
KNBS	Kenya National Bureau of Statistics
KePMS	Kenya (HIV/AIDS) Program Monitoring System
KSh	Kenya shilling (ca. 75–80 KSh/US$)
M&E	Monitoring and evaluation
MIAS	Malaria Information and Acquisition System
MIS	Malaria Indicator Survey
MoH	Ministries of Health
MoMS	Ministry of Medical Services
MoPHS	Ministry of Public Health and Sanitation
NACC	National AIDS Control Council
NASCOP	National AIDS/STD Control Program
NGO	Non-governmental organization
NIMES	National Integrated Monitoring and Evaluation System
OPH	Office of Population and Health (USAID)
PEPFAR	U.S. President's Emergency Fund for AIDS Relief
PHC	Primary health care
PHMT	Provincial Health Management Team

PHRIO	Provincial Health Records Information Officer
PMI	Presidential Malaria Initiative
SOP	Standard operating procedures
SPA	Service provision assessment
SSL/TSL	Secure socket layer/transport socket layer
SWAp	Sector-wide approach
TA	Technical assistance
TB	Tuberculosis
TCP/IP	Transmission Control Protocol/Internet Protocol
UNICEF	United Nations Children's Fund
USAID/K	USAID Kenya Mission
VR	Vital registration
WHO	World Health Organization

EXECUTIVE SUMMARY

USAID/Kenya contracted with the Global Health Technical Assistance (GH Tech) Project to (1) review and document the status of the national monitoring and evaluation (M&E) system, and national health management information system (HMIS); (2) review workplans of the existing M&E and HMIS mechanisms; (3) identify areas for improvement; and (4) use the results to inform recommendations to USAID on project development to address the areas for improvement. A four-person team was in Kenya for six weeks in July and August of 2010, to accomplish this task.

From the USAID support aspect, the objectives of the assessment were to provide: (1) a retrospective assessment of the Mission's technical support through its current mechanisms; and (2) a prospective assessment of future technical needs.

In reviewing M&E implementation, the assessment team found that the health sector currently lacks a comprehensive sector M&E framework, although there are individual M&E strategies for the various "vertical" programs. The team strongly recommends the creation of an initiative involving all stakeholders to develop and implement a sector-wide M&E framework to manage these activities at all levels.

Following extensive document reviews, site visits, and interviews with over 100 people, the team identified various weaknesses in the existing HMIS, as listed below. Grouped under four broad thematic areas, each problem must be addressed if the HMIS is to serve its ultimate purpose of providing reliable information on the accomplishments of the MoH, which can also be used for day-to-day management. (Clearly, neither the GoK nor any one donor can successfully address all of these issues.)

DATA COLLECTION, QUALITY, AND ACCESS
- Programs differ on which indicators are needed for management.
- Clinical and data entry staff are inadequate.
- Data entry tools are inadequate.
- Motivation and supervision are inadequate.
- There is no error-checking during data transfer.
- Only district-level aggregate data are available at the national and provincial levels.

TECHNOLOGY, PROCESSES, PROTOCOLS, AND THE HUMAN INTERFACE
- There is limited installation of information and communication technology (ICT) equipment below Level IV health facilities.
- Digital technology and software applications are nonexistent, weak, or nonfunctioning.
- Health interventions are single-purpose rather than multi-sector and cohort-oriented.
- Excessive time is spent in program indicator reporting forms (tools).
- There are limited patient-level recording systems that are capable of tracking patients over time.

POLICY AND ORGANIZATIONAL DEVELOPMENT AND MANAGEMENT

- The culture of data use for planning and decision-making is weak at all levels.
- Parallel data systems exist within the Government and with stakeholders.
- Technical working groups provide weak coordination mechanisms for systems development.
- Inter- and intra-departmental coordination in M&E and HMIS are weak.
- Coordination and supervision within and between levels are weak.
- Capacity in data management (in collection, data quality assurance (DQA), data use, etc.) remains weak at all levels.

INFORMATION PRODUCTS, DATA USE, AND KNOWLEDGE MANAGEMENT

- There are few real-time or structured data products and little "ready access" to data.
- There are very few knowledge management products to facilitate learning, experience-sharing, and best practices.
- There is little or no data analysis and information usage at all levels.
- There is limited use of structured databases and data warehouses at all levels.
- There is limited "E" in M&E.
- There is a dearth of technical knowledge in understanding indicators and methodologies.

Many of these weaknesses have previously been noted in several evaluations. Nonetheless, the assessment team believes that the following significant strengths can be leveraged to build a more successful HMIS model:

- Health Information System (HIS) policy and HMIS strategy frameworks have been established.
- There is stakeholder agreement on the importance of achieving a unified HIS.
- Performance contracts & a performance management system are in place with the Annual Operational Plan (AOP).
- The File Transfer Protocol (FTP) will be replaced with a web-based system.
- There is commitment to engagement with the community.
- Partners are in place at all levels.
- Experiential knowledge is not lacking.
- Organizational structures are in place.
- Exceptional and dedicated individuals exist at all levels.

USAID has provided significant support to the HMIS, particularly through the APHIA II programs, which have been implemented in all eight provinces in Kenya, and which have generally provided the material—forms, register books, calculators, computer connection time, and so on—as well as, in some cases, staff to help do the basic data entry and data transfer. There has also been support at the central level, where the Measure/DHS Project has worked closely with the Kenya National Board of Statistics (KNBS) to conduct the 2008 Kenya Demographic and Health Survey (KDHS), as well as several other population-based surveys. Moreover, Health Services 20/20 has provided direct support to the HMISD by working to establish a Master Facility List which will allow different databases to be linked through a common designator.

Unfortunately, USAID has typically worked through "vertical" projects that are disease-specific, establishing programs using their own data collection and management systems for HIV/AIDS, malaria, reproductive health, tuberculosis, and others. These parallel systems weaken the national HMIS since they draw management attention away from the structured needs of the overall health sector, and lead to competition for resources instead of cooperation.

USAID/Kenya recently issued the *Five-Year Implementation Framework for the Health Sector (2010–2015),* which shows a firm commitment to:

- Be a country-led and country-owned program committed to improved active coordination with GoK and other stakeholders in both the public and private sectors.
- Avoid the development of parallel service delivery programs and systems.
- Move from an "emergency" vertical disease orientation to one that will emphasize both service delivery and systems development.

These principles represent an "about-face" for USAID and must be followed if Kenya is to develop its own National HIS.

For its immediate next phase, the MoH have elected to replace the current system with the District Health Information System, v. 2 (DHIS 2), which is shareware developed in South Africa and augmented by work in Norway and India. From various documents, presentations, and discussions, this appears to be a reasonable choice. According to the HMISD, the new system will be functional on a pilot basis by the end of 2010. While it is optimized as a web-based application, the system will also support stand-alone/upload situations.

The assessment team evaluated the overall strengths and weaknesses of the national M&E system and HMIS, as well as the multi-faceted challenges surrounding them, and developed a comprehensive set of recommendations under four broad, thematic areas covering the entire system. These are listed in the next section and in greater detail in Annex D. In consultation with the HMISD and according to the team's understanding of the GoK's objectives, the team has also provided information on priorities. This prioritization was done in light of the AOP 6, and is shown in the matrix in Annex D. Through close consultation with various individuals and entities of the MoH, the team also prepared specific recommendations for USAID to address various immediate and long-term needs. This should be done in close consultation with the MoH. Since some of these recommendations may be the basis of procurement actions in the future, they were provided to USAID as a separate document.

The assessment team believes that in order to strengthen and unify the HIS, a holistic and sustained approach from the GoK will be necessary, along with continued and coordinated commitment from all stakeholders—including development partners. If the whole process is guided and implemented within a "government-led" and "government-owned" framework, Kenya will be able to create a HIS that will help decision makers to have effective policy dialogues, monitor and plan for health problems, promote equity, allow citizens to make informed health choices, and improve governance and accountability in the health sector. The team strongly felt that the HMISD stands ready to take on the challenges to fulfill their mission as stated in the Strategy Plan for HMIS 2009–2014.

KEY RECOMMENDATIONS

The team's list of recommendations for the HIS appears below (please see the section, "Risk Assessment and Key Success Factors," for discussion of these recommendations and Annex D for a complete matrix, along with illustrative activities). The team believes that following these recommendations will address current problems and strengthen the system as a whole. The team also feels that these problems must be addressed by the GoK with support from various DPs in many areas. The team does not believe that USAID can address all of them alone.

MANAGEMENT AND COORDINATION

1. Identify a single national "champion" who can mobilize people at all levels of the health system to implement a strengthened HIS.

2. Raise the profile of HMISD by establishing a higher-ranking department within the MoH. Provide sufficient human and financial resources so that the department can perform its function, including better coordination of all stakeholders. Strengthen the MoH by creating leadership forums that can coordinate a broad front of stakeholders. This will help achieve operational and policy reforms, especially involving human resources, which will be needed to implement these recommendations, as well as others that will come to the fore in the future.

3. Translate the HIS strategy into a series of prioritized steps to achieve the necessary objectives.

4. Strengthen existing mechanisms to review policy and strategy at annual intervals in order to ensure that implementation is on track and remains relevant to the situation on the ground.

5. Support the technical working group(s) that aims to bring all stakeholders to agree on a minimum set of indicators that will meet program management and reporting needs under the DHIS 2. This working group should be strengthened and institutionalized to ensure that there continues to be coordination between stakeholders on indicator management.

6. Support the government process that will ensure that all government programs and development partners subscribe to the agreed indicator list, and enforce adoption of the list immediately in their vertical reporting programs. Set an appropriate timeframe to merge parallel data systems into a unified HMIS. Provide support to government and partners to facilitate and manage this transition to a unified HIS.

7. Facilitate coordination with other sectors that will support roll-out of the HIS, such as providers of internet infrastructure, E-Government, and internet services, in order to facilitate access to data management systems and savings on bulk rates on data transfers and access.

8. Coordinate activities with other ministries, particularly the Ministry of Information and Communications, where services or information is needed to implement the program fully.

9. Develop and implement M&E frameworks at each level to support activity management.

10. Establish GoK sources for funding technology acquisition, supplies, and maintenance.

11. Add new hires as quickly as possible to staff the HMIS fully. The HMIS strategic plan estimates that around 5,800 staff will be needed, of which 4,000 will be Health Records Information Officers (HRIOs). The HMIS strategic plan projects that around 1,500 additional staff will be hired as a first installment over the next five years. In addition, sufficient clinical staff should be hired so that they can meet both clinical and management responsibilities.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) TECHNICAL SUPPORT AND SERVICES

1. Using the new indicator set being developed for the DHIS 2, create a facility-appropriate (provincial/district/facility) set of recording and reporting tools, and train existing staff and supervisors to use them.

2. Ensure that the DHIS 2 and all other HIS systems (commodities, financial, personnel, KNBS, Vital Registration, etc.) are open architecture so that they can communicate with each other.

3. Determine the level of infrastructure (connectivity, electricity, etc.) that will be required for program implementation at each level. Seek solutions (modems, cell phone transmission, appropriate paper transfer) for sites lacking full connectivity.

4. Negotiate bulk rates or other reduced tariffs for cell phone/modem air time.

5. Establish intranets in all facilities that have multiple computers.

6. Establish a robust technical unit within the HMIS Division that can meet ongoing programming, updating, and support needs.

7. Establish lists of equipment and software that will be required at each level, with full specifications.

8. Fully implement the DHIS 2 using the new indicator set. (Note: The new program can be pilot-tested, but should not roll out widely until the indicator set is established.)

9. Establish support networks, including but not limited to, help desks, anti-virus program implementation, and rapid equipment repair and replacement.

10. Fully implement the Master Facility List and unique identifiers for patients and providers.

11. Support and strengthen electronic health records (EHRs) so clinicians have feedback on their patients and their work.

12. Ensure that the DHIS 2 provides disaggregated facility-level data to central/provincial/county levels.

13. Establish secure, backed-up data warehouses.

14. Establish GoK sources for funding technology.

15. Establish mechanisms to fund internet connectivity, modems, cell phone, technology, and air time. Ensure that all districts and facilities have electricity.

SYSTEMS CAPACITY DEVELOPMENT

1. Establish systems to ensure that registers and reporting forms are updated and continuously available at all communities, facilities, and districts.

2. Establish and mandate a standard data quality assurance system that includes simple error-checking tools such as comparing tally sheets to registers, having a second person check data entry, and instituting automated E-validation and derivation tools to ensure improved data quality.

3. Establish mechanisms to fund travel from facility levels to the districts to ensure that reports are delivered on time for onward reporting. (Reporting may be on a weekly basis for surveillance data.)

4. Select indicators so that the individual collecting them can actively use the information he/she collects in his/her patient care.

5. Create a training and career pathway for HRIOs, including both diploma and degree programs.

6. Develop a supervision and support system with sufficient resources that will routinely provide support to each level on all key components of the data system (data collection, data management, etc.) and on data utilization.

7. Provide regular, supportive supervision and mentorship at district, facility, and community levels, give feedback, and leave a written record of action points and advice.

COMMUNICATION, LEARNING, AND KNOWLEDGE-BASED PRACTICES

1. Develop the outreach and media events needed to raise awareness of the importance of information in service provision.

2. Support and help strengthen a "public data and information access portal" that is reliable, relevant, and up-to-date. Produce regular reports from various nodes of the system and provide proper communication channels and forums to discuss them.

3. Implement opportunities for strategic dialogue with key stakeholders at all levels—including citizen membership, community units (CUs), donors, development partners (DPs), implementation partners (IPs), and media—in order to raise awareness for a culture shift and strengthen the demand for information at all levels by citizens.

4. Conduct data needs assessments; develop data utilization plans for various stakeholders at all levels to improve overall operation, planning, decision-making, and performance management; and design the necessary analytical tools, information, and knowledge management products accordingly. This process should include ordinary citizens, community units, managers/decision makers at all levels, development partners, as well as the media.

5. Develop structured team reviews at each level to strengthen individual and team commitments to managing data.

6. Introduce techniques to conduct evaluations of key programs in order to understand project dynamics and adjust implementation to improve success in achieving stated goals and/or better plan for effectiveness toward health outcomes. Evaluation techniques should be closely linked to actual management decisions that need to be made.

7. Launch outreach and workshops at all levels to raise awareness and appreciation of the importance of information products and their use as essential components of everyday tasks.

8. Establish a one-month pre-assignment training program for all clinicians, including physicians, on the management tools they need to do their jobs, including health information, pharmacy management and logistics, etc.

9. Establish on-the-job training and periodic retraining for all managerial, clinical, and HRIO staff.

10. Establish supervision training and refresher training specifically for managing health information systems and their staff.

11. Establish forums where people can exchange experience and perspectives and share tools, practices, and concepts for success.

12. Build and implement formal and informal learning and knowledge components relevant to job responsibilities, provide ways and means to facilitate self-learning, and establish an incentive system for it.

I.   INTRODUCTION

Since gaining its independence in 1963, Kenya, an eastern African nation stretching between Lake Victoria and the Indian Ocean, has become the leading economic power in the region. Kenya is bordered to the north by Ethiopia and Somalia, and to the west and south by Uganda and Tanzania, putting it adjacent to many of the conflicts that riddle the Horn of Africa. Kenya has a population of about 40 million, of whom half are under the age of 19.

In 2008, the GoK issued its National Health Sector Strategic Plan II, which included the following goals: (1) reducing under-five mortality to 33 per 1,000 live births; (2) reducing the maternal mortality ratio to 147 per 100,000 live births; (3) increasing the proportion of deliveries by skilled personnel to 90%; (4) increasing the proportion of immunized children below one year to 95%; (5) reducing the number of cases of TB to 444 per 100,000 persons; (6) reducing the proportion of in-patient malaria fatality to 3%; and (7) reducing the national HIV prevalence to less than 2%. The overall Country Development Plan, Kenya Vision 2030, adds revitalization of the health care infrastructure; restructuring of the health system with a shift in focus to interventions that prevent disease and promote health; strengthened health care service delivery with devolution to community-level health units; and development of equitable health care financing mechanisms.

Under Kenya's current political structure, the country is divided into eight provinces and roughly 286 districts. The newly approved constitution will replace the provinces with 47 counties. (Many of the districts were created recently—at least a dozen while the team was in-country.) The MoH counts 149 "mother districts," which have fully established services and health information reporting. These 149 districts geographically contain all 286 newly created districts. The basic structure of the various levels of care under the Kenya Essential Package for Health (KEPH) is shown in Figure 1. In addition, there are 210 "constituencies" with different boundaries, each of which sends one Member of Parliament (MP) to Nairobi. These constituencies are to be expanded to 290 in the next few months. They are not germane to the MoH structure, except insofar as MPs try to add hospitals and dispensaries to benefit their constituents. Clearly, a massive effort will be needed as the numbers of facilities increase to meet these changes. The changing administrative structure will have an impact on the implementation of any long-term project, in that the numbers of political units and facilities are likely to increase over the course of the activity.

Figure 1: Levels of Care under the Kenya Essential Package for Health

Complicating matters, there are currently two Ministries of Health—the Ministry of Public Health and Sanitation (MoPHS), which deals with Levels 1, 2, and 3 on the pyramid in Figure 1, and a Ministry of Medical Services (MoMS), which deals with primary, secondary, and tertiary hospitals, i.e., Levels 4, 5, and 6. The HMIS is supposed to sit between and serve both ministries, but there are political pressures that make the task difficult. Under the new constitution, the number of ministries will be reduced from the current number of 40 down to 22 or fewer. It is not yet clear whether the two ministries will be merged.

One of the results of the massive donor funding of different health priorities is that a series of vertical programs has been established within, or even outside, the MoH. For example, there are three separate programs dealing with HIV/AIDS, and separate programs dealing with vaccinations, malaria, tuberculosis and other diseases—each with its own central staff and data collecting enterprises, and each resting on the shoulders of the individual health facilities that offer services. The team found at least 18 such vertical programs. As a first step to integrating services across the sector, the MoH have decided to integrate the health services part of the HIS. The ultimate goal is to establish and operationalize a unified and integrated National HIS that would efficiently support evidence-based planning and decision-making.

II.   BACKGROUND AND OBJECTIVE

An effective and integrated HIS is essential to upgrade the quality of health service delivery and to improve health outcomes. The HIS is the principal entry point to provide timely data and channels for information and knowledge exchange that are critical in facilitating evidence-based planning and decision-making. As such, the GoK, along with all other key stakeholders including DPs, clearly recognize the urgent need to have a stronger, unified, and integrated HIS. In this regard, the GoK has shown increasing commitment to these changes by formulating and approving both a HMIS Strategy and a HIS Policy. In support of this move, one of the key strategic goals of both the USAID/Kenya Five-Year Implementation Framework for the Health Sector 2010–2015 and the Global Health Initiative is to institutionalize country-owned processes and management of operations essential to health systems strengthening, including the HIS. This is also consistent with the GoK's HIS Policy and HMIS Strategy.

Even before final approval of the new policy and strategy, the GoK, with support from DPs, was already working to strengthen components of the HIS, guided by this policy framework. Previous assessments have found that a key challenge has been that both the Government and development partners, faced with a weak HIS, have created parallel systems to address their information needs, which has weakened the information system. The GoK's move toward a unified and integrated HIS is critical to strengthening the HIS. If developed correctly, the single system will have sufficient capacity to serve all health stakeholders' health information needs for evidence-based decision-making. This move has been supported by all stakeholders.

Over the past year, the GoK has requested that USAID support the development of a nationwide HIS to replace the ineffectual one that currently exists. Preparatory to providing the necessary support, USAID/K arranged for an evaluation team to come to Kenya to assess the existing HIS. The key objective of the assessment was to review and document the status of the current national M&E system and national HMISs, identify areas for improvement, and recommend the types of support needed to establish a strong, unified, and integrated HIS. The second objective of the assessment was to use the assessment results to develop USAID/K project descriptions for the national M&E and HMIS programs and recommend the structure of support for the next five years.

III. ASSESSMENT METHODOLOGY

The assessment methodology consisted of a thorough analysis of Kenya's entire HIS, and was carried out through review of available documents and statistics, various key informant interviews, group meetings, and field visits.

THE TEAM

USAID requested that GH Tech send a team to Kenya to conduct an assessment of the current status of the National M&E and HMIS, and to make recommendations for support to the sector, more specifically to strengthen the HMIS in the future. The team consisted of four members: Dan Blumhagen, who acted as Team Leader; and Tariqul Khan, Muhoro Ndungu, and Stephen Settimi, who represented the USAID Global Health Bureau. The team (except Mr. Settimi) worked in Kenya from July 19 to September 1, 2010.

DOCUMENT REVIEW

In the initial phase of the assessment and consistently after that, the team reviewed a large number of background documents provided by USAID/K. During the process of various meetings and interviews, the team requested a number of additional relevant documents from various individuals and entities. These documents were also reviewed in detail. (A complete list of all documents reviewed is listed in Annex C to this report.)

The team benefited from previous assessments which had already identified many of the challenges faced by the HIS. In conducting its own assessment, the team used as its entry point the support provided by USAID/K at the national and regional levels to the HIS. This report in many ways validates previous findings, while extending previous efforts by developing a set of recommendations to strengthen the HIS's capacity to improve implementation of the new policy framework and ongoing initiatives to improve the system.

MEETINGS AND KEY INFORMANT INTERVIEWS

Over the course of six weeks, the team held many group meetings and interviewed a large number of informants. While the team attended some key discussions together, it often split into two sub-teams to meet various organizations, groups and individuals. All together, the team met with over 100 individuals. The group meetings and key informants consisted of professionals from various levels of both Ministries of Health, development partners, implementation partners, and research entities. Information from all group discussions and individual interviews was recorded and later reviewed and analyzed by the team. (A complete list of all individuals who met with the team is listed in Annex B.)

FIELD VISITS

During the course of the assessment, the team visited Nyanza, Western, and Nairobi Provinces. In most instances the team split into sub-teams in order to expand its capacity to visit various groups and facilities throughout these three provinces. The team—both together and in sub-teams—visited APHIA II implementation partners, NGOs, Provincial Health Management Teams (PHMTs), District Health Management Teams (DHMTs), provincial hospitals, district hospitals, health centers, and dispensaries. The team members met with various people at the management levels as well as service providers and HRIOs. All together, the team visited about 40 facilities in the three provinces. Individual members of the team took detailed notes on discussions and findings, which were later discussed and analyzed.

REPORT PREPARATION AND FINALIZATION

This report presents the findings, analysis, and recommendations compiled by the team. Individual team members wrote the various sections of the report, which were then reviewed by the entire team. Many sections of the report or their highlights were prepared during the course of the study and presented for discussion with different stakeholders, in particular with the HMISD and with USAID/K.

IV. CURRENT NATIONAL HEALTH SECTOR M&E SYSTEM

The health sector has not developed a comprehensive health sector monitoring and evaluation framework. Instead, the strategy adopted has been to develop M&E strategies for each of the different vertical health program areas. There is, therefore, no single unifying reference point for the information needed to track the health sector's objectives for tracking and decision-making at each level.

Without a comprehensive M&E system, many of the current discussions on indicators and information needs are seen as negotiations between competing interests. These interests are informed by the M&E strategies that different programs are developing. The stronger and better-funded programs have then driven the indicator and information system development, with HIV/AIDS in particular driving the process. The malaria program meets many of its information needs through the system (but still conducts prevalence surveys), while other programs often feel left out. In addition, there is competition between the overall sector information needs versus the program management information needs. The indicator set for the sector is therefore seen as being more complete than the program management information needs.

These challenges reflect the lack of a national M&E system to guide the system at each level and determine the balance between program and sector information needs, and the information used at each level.

In the absence of central guidance, negotiations on the HIS are dominated by the relative strength of the stakeholders. Indicator harmonization was seen by stakeholders to have been driven by the need to accommodate each of the sector's stakeholder information needs. Each stakeholder brings its indicators and data needs to the table, and, to the extent possible, all indicators will be included, and duplicates removed. The better-prepared programs, those with better-defined information needs, and those with relatively more resources in their parallel systems occupy a relatively larger space in the HIS system, such as the HIV/AIDS stakeholders. Even the second round is seen as negotiations between programs, rather than working on meeting the needs of the health system. Many of the program areas, especially those under family health, feel they are coming into the negotiations disadvantaged.

V. CURRENT NATIONAL HIS

OVERVIEW

The HIS has several sub-systems and components. The official Health Information Strategy diagrams are shown in the figure below. The MoH view their vital information in three categories: health service information, management information, and population-based statistics. This assessment focused on the health service information, while taking into account the need for communication between the three components. The MoH are very interested in ensuring that information technology be developed for the left lower quadrant systems—specifically, logistics (pharmaceuticals, equipment, and supplies), finance, physical assets, and human resources—but these are even less developed than the health services section. The right side of the diagram shows the vital statistics registration system and a variety of special studies, many of which are under the KNBS. Briefly, the MoH have done yeoman service in developing a "Master Facility List," which will be the primary means of linking the different databases. The MoH, and specifically the HMISD, intend to develop an overall HIS which will allow linking of all of these systems.

Figure 2: Overall View of Health Information System
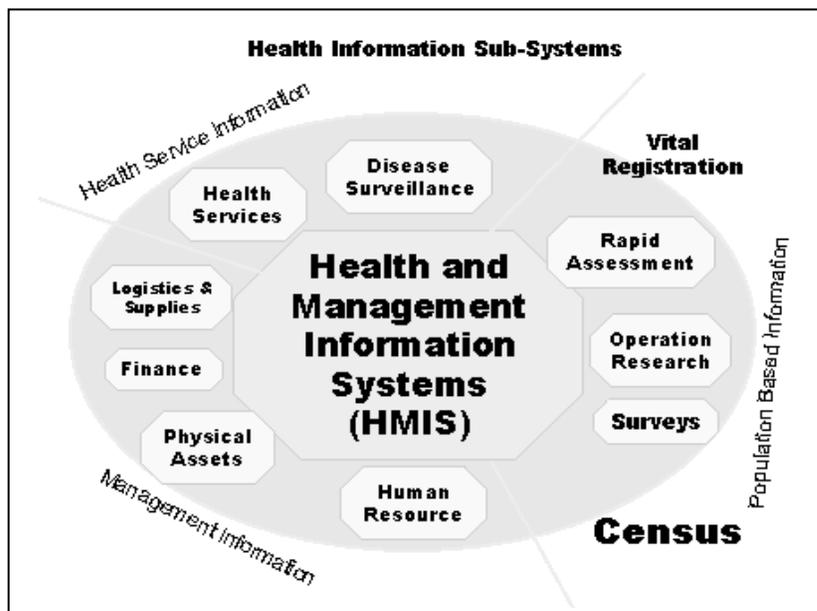
In the HIS policy area, the GoK has had two major recent accomplishments in formulating and approving the HIS Policy and the Strategic Plan for HMIS 2009–2014. Together, these documents lay a necessary and critical foundation for the parameters of any such system.

Currently, there are relatively few automated systems in the HIS. Vital registration statistics are typically kept in paper form until they are recorded in a central database, and the census and other studies are contained in individual data files. None of these data sets "communicates" with any others. Human Resources has an automated payroll system, but not personnel management. There are no automated physical inventory or real property records, and the commodities and pharmaceutical distribution systems are just beginning to be designed and to build data systems. Disease surveillance works fairly well, using cell phone texting to transmit data from facilities to the center, but this is not yet linked to health services data collection. Overall, data systems are fragmented and rudimentary. There has been an effort to incorporate data from private health facilities, but this has not been very successful, apparently because private providers do not see the need or have the time to submit reports.

ORGANIZATIONAL STRUCTURE

At the national level, the main coordinating body of the HIS is the HMISD (under the Technical Planning and Performance Monitoring Department of the MoH (MoPHS and MoMS). The division is currently headed by Dr. Charles M. Nzioka and has roughly 16 professional staff and four functional units.

Figure 3: HIS Administrative Organizational Structure
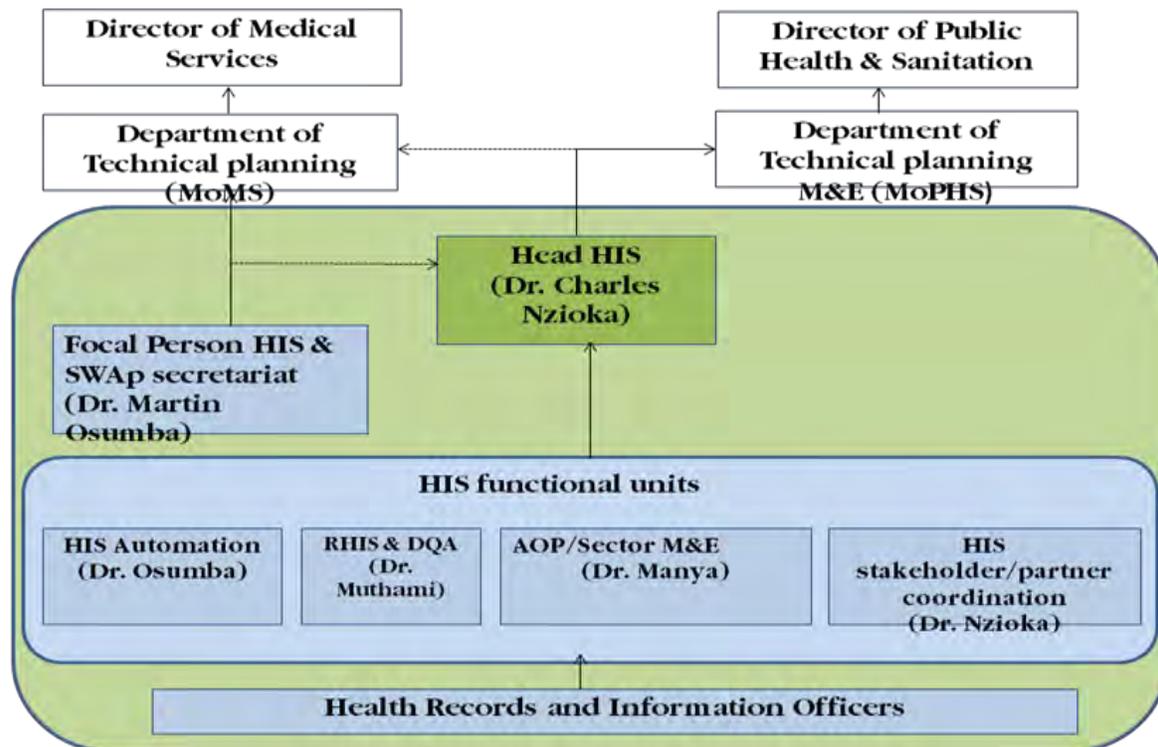
(Source: Kenya Ministries of Health, HMIS Division)

At the provincial and district levels, there are Provincial Health Records Information Officers (PHRIOs) and District Health Records Information Officers (DHRIOs) who are primarily responsible for the management and supply of the routine service data. At the facility level, a data clerk is responsible for routine data collection and monthly submission of summary sheets. Under the new community strategy, at the community level there are community health workers[1] (CHWs) and community health extension workers (CHEWs) who are responsible for collection and supply of data to the nearest facility.

---

[1] As in other African countries, CHEWs are the lowest level of paid employees of the MoPHS, while the CHWs are "volunteers" who are provided with recognition in lieu of salaries. As elsewhere, there are questions as to how sustainable this system really is.

Figure 4: HIS Functional Organizational Chart
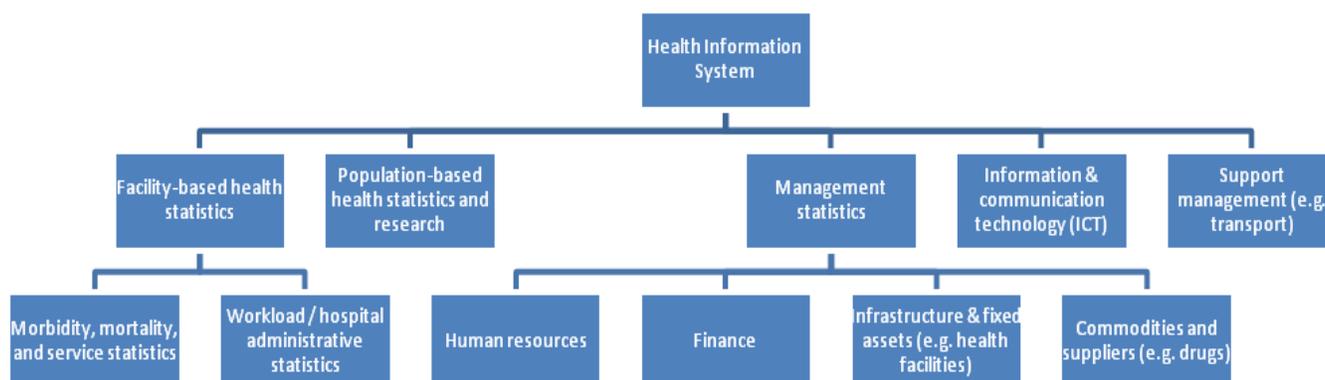
(Source: Kenya Ministries of Health, *Strategic Plan for Health Management Information System 2009–2014*)

RESOURCES

Financial and Material Resources

The HIS lacks the financial and material resources to carry out its functions fully, especially regarding the collection and transmission of data, supervision, and learning and training. Adequate funds are urgently needed for investment and scale-up expenditures. Although there is a good possibility of increased government funding through the next budget process, a significant part of the funding still must come from the DPs. While the expected source of funding and the credibility of the budget itself is currently being reviewed, the HMIS Strategy states a total figure of US$27 million required to implement it over the next five years.

	TABLE 1: BUDGET SUMMARIES BY STRATEGIC OBJECTIVES CHART	
	Strategic Objectives	**Amount of US$ (KSHS. 75)**
1	To improve data management	11,841,093
2	To improve the national vital registration system	3,082,097
3	To enhance the capacity of HMIS	3,362,667
4	To improve financial resources	201,387
5	To strengthen use and application of Information and Communication Technology in data management	961,160
6	To improve monitoring, feedback, reporting, supervision, and data audits	5,327,707
7	To enhance governance, partnerships, collaboration, and coordination	211,933
	Grand Totals	**27,032,527**

(Source: Kenya Ministries of Health, *Strategic Plan for Health Management Information System 2009–2014*).

Human Resources

There is both a severe shortfall and an unequal distribution of human resources (HR) throughout the system. HR gaps are in fact a critical threat to the realization of a successful and strengthened unified HIS. According to the HMIS Strategy 2009–2014, only about 11% of required personnel are in place for the HIS. The deficiency is highest for HRIOs (over 88%) and ICT Officers (over 96%). It is noteworthy that the strategy has paid less attention to the possibility of increasing the number of clinicians able to enter medical records at the actual service delivery stage. Since clinicians are the individuals who first categorize client contacts, they are a key part of the HMIS. In addition, existing human resources are not optimally effective due to lack of training and equipment, and weak infrastructure. While the team feels that these figures may be too high, it was unable to conduct a second exercise to recommend more appropriate levels. The goal to add 1,579 staff over the next five years, and then reassess the situation, appears reasonable.

TABLE 2: HIS STAFFING LEVEL AND GAPS				
CADRE	**Total HR Requirements as Per Staffing Norms and Standards**	**Existing Staff Currently**	**Gap**	**Staff to be Recruited as per the Strategic Plan (2009–2014)**
Health Records and Information Personnel	4882	572	4310 (88.3%)	1550
ICT Officers	235	8	227 (96.6%)	20
Statisticians	221	0	221 (100%)	4
Epidemiologists	12	2	10 (83%)	3
Public Health Specialists	4	0	4 (100%)	1
Health Economists	2	0	2 (100%)	1
Total	**5356**	**582 (11%)**	**4774 (99%)**	**1579**

(Source: Kenya Ministries of Health, *Strategic Plan for Health Management Information System 2009–2014*).

POLICY ENVIRONMENT

There have been significant accomplishments on the policy front. The first of these is the formulation and adoption of the *Health Information Policy*, and the corresponding *Strategic Plan for Health Management Information Systems 2009–2014*. As the policy document states:

> The HMIS policy is an expression of the goals, priorities and strategies for improving performance in the health sector. It underscores the importance the two Ministries of Health place on performance measurement as a means of gaining insight into making judgment on effectiveness and efficiency of delivery of health services. The application of the HMIS principles is also expected to enhance accountability and provide a forum for learning from previous experiences.

> Careful, thoughtful long-term strategic planning within the Health sector can be possible only when there is an appropriately developed HMIS policy. Strategic planning, based on a rational and agreed policy framework is the only way to ensure that health information

systems and applications that are being put into place throughout Kenya will be able to exchange data easily and export data in meaningful and useful forms. The Government of Kenya must devote resources to generating consensus around meaningful plans and goals that thoughtfully support commitment to the right personnel in well-defined positions at central and district levels, and at facilities which have the capacity and support to handle coordination, dissemination, training and management of ongoing demand for quality data and utilization of the data. The GoK must maintain that commitment over time. (p. 4–5)

The significance of these documents is that they have been approved by the GoK, and, at least in principle, have the support of the Ministry of Finance to make adequate funding available; of the Ministry of Planning, National Development and Vision 2030 to include these elements in the National AOPs; and of the Department of Personnel Management to make sufficient personnel available. With regard to the current strategic plan, this means that an additional 1,579 people are to be added to the overall system over the next five years. This is the first time that there has been high-level commitment to building a HMIS.

The most significant document for GoK management is the AOP, currently version 6, running from July 2010 to June 2011. The AOP sets out detailed objectives for each ministry to accomplish during the Kenyan fiscal year, and the principal secretaries are judged on how well their ministries have performed. Pay increases, employment benefits, and status in the cabinet are all based on this performance. The AOP trickles down to every government employee at every level: DHRIOs, for example, have their performance judged in part on whether they submit their reports on time. The performance against the AOP for each sector is also captured at the national level through the National Integrated Monitoring and Evaluation System (NIMES).

Each activity is budgeted, as well. Thus, in AOP 6, in Western Province, KSh 59,260,000 is budgeted for "data collection tools," i.e., registers and reporting forms. Unfortunately, the MoH are not able to spend their entire budget, and this line item, in particular, remains unused. Currently, the team was told, the MoH are able to spend about 36% of the funds made available to it. A great deal of systems strengthening must be done.

The AOP is important in gaining USAID support in the future because the AOP outlines the GoK's priorities, and donors are requested to provide support in each of the relevant lines. For the HMIS, for example, AOP 6 has the following outputs:

• Second edition health sector indicators and data tools

• Data Quality Analysis strategy developed

• DHIS 2 software developed and rolled out

• Deployment of the Master Facility List–web application

• Capacity-building

• Improved reporting rates from 70% to 80%

• Conduct service availability mapping.

However, even though these are GoK priorities, the first two and last items have no attached budgets to use to accomplish their goals. While the current AOP establishes the budget lines, it remains to be seen how they will be augmented in the next AOP.

INTRA/INTER-SECTORAL COORDINATION

Sector Coordination

The sector has developed a coordination framework. The Joint Interagency Coordinating Committee (JICC) organizes policy development for the health sector, chaired by government with participation of all stakeholders. The Health Sector Coordinating Committee (HSCC), with representation from all implementing stakeholders, coordinates the implementation process. The structure includes stakeholder forums at the provincial, district, facility, and village levels. The JICC and HSCC are functional at the national level, but at the lower levels coordination is less effective, in that different provinces apply different approaches. A uniform approach to coordinating stakeholders at the provincial, district, and lower levels is required.

At the national level the coordination framework has been credited with the development of various policies and systems, including the HIS Policy and HMIS Strategic Plan, and in the development of standards and components of the HIS through various technical working groups. However, there remains a sense of lack of direction and enforcement of policies and strategies by the Government, and that therefore many of the decisions and recommendations agreed to and passed by the coordination forum are not being implemented. There is therefore a need to strengthen the coordination system with more effective leadership and decision-making if a decisive impact on the health sector is to be achieved.

With respect to the HIS, the Government and DPs stated that the HIS would benefit from better representation in the coordination framework, which could include the development of an Interagency Coordinating Committee (ICC) for the HIS, and by keeping the technical working groups in place long enough to enable them to oversee the coordination of implementation of the systems they help develop.

Intra-sector Coordination

Intra-sector coordination has been a challenge in the health sector—primarily due to the distribution of functions between two ministries, but also because of ineffective coordination between the different program areas. The HIS, which is common to both ministries, has been an example of intra-sector coordination, with the decision to create only one HIS based in the MoPHS to serve the sector. Although coordination between the two ministries has affected the operations of the HIS, especially in decision-making on key policy areas, there is commitment to develop the HIS through a common organizational structure under the HMISD, and a common policy framework on the HIS to service both. At the program level there has been less success in coordination to harmonize the HIS needs and interests of the different vertical programs, with the HMISD experiencing problems in coordinating the different needs of the program areas. The HMIS has begun to facilitate negotiations between the programs, but this has not been an easy task because there is no forum or modality for coordinating across departments.

DATA FLOW, MANAGEMENT, AND USE

HIS Data Sources

Routine Service Data

This includes data collection based on patient service records and reporting from community health workers and various health facilities. Routine health data collection is conducted through a network of community units, in addition to the 6,034 health facilities (government, faith-based, non-governmental organization, and private) that are distributed throughout the country. The service delivery points complete the applicable paper summary form(s) and submit them to the district level on a monthly basis. Data are then transmitted from the district to the national level

through the File Transfer Protocol (FTP) system. According to the Division of HIS, the overall rate of reporting from facilities to the districts is just over 80%.

Census and Vital Statistics

Two key components of the population-based data are census and vital registration. The last census was organized and carried out by the KNBS in 2009, and official results are expected to be made public in August 2010. The capacity of Kenya's vital registration system is very weak. According to the HMIS Strategy document, the system captures only about half of the births and deaths within the country. Vital Registration actually had not compiled a report in the last ten years. Currently, HMIS is not receiving any data from VR. The linkages between the HIS Division and the KNBS and the Department of Civil Registration are very weak.

Surveys

The third component of the population-based data is the various surveys. The most recent KDHS was carried out by the KNBS in 2008–2009, and the results were released in May 2010. Three surveys were conducted in 2007—the Malaria Indicator Survey (MIS), the AIDS Indicators Survey (KAIS), and the Kenya Household Health Expenditure and Utilization Survey. The results of the first two were published in March and September 2009, respectively. All the surveys in Kenya, in general, are heavily funded by the donors.

Surveillance

There are primarily three types of surveillance taking place: (1) Integrated Disease Surveillance and Response (IDSR), which is managed by the Division of Disease Surveillance and Response (DDSR) of the MoPHS Department of Disease Control; (2) the Kenya Demographic Surveillance System (DSS), consisting of five sites, one each in Kibera, Kilifi, Kisumu, Nairobi, and Rusinga, and heavily supported by USAID/K; and (3) various program-specific surveillance sites such as NASCOP's HIV/AIDS surveillance system, with approximately 44 sites across the country and supported by PEPFAR and the Division of Malaria Control's (DoMC) surveillance system in epidemic-prone areas.

Program-Specific M&E

There is a significant amount of program-specific monitoring taking place in Kenya. Key examples include: (1) the Malaria Information and Acquisition System (MIAS), maintained by the DoMC; (2) Community-Based Program Activity Reporting (COBPAR), maintained by the National AIDS Control Council (NACC); (3) the Kenya HIV/AIDS Program Monitoring System (KePMS), maintained by PEPFAR; and (4) various programs by the Department of Family Health.

Administrative Records

Administrative record is a key component of the management information part, and consists of finance/budget, physical assets information, HR, and logistics and supply system information. Currently, there is no interoperability between the HMIS and these systems. Moreover, there is very little communication between them, which means that many decisions are being made in silos without key information from the other systems, resulting in significant waste of resources.

HMIS Structure and Data Flow

The figure below provides an image of the current HMIS structure. Data are generated at the facilities and passed up the chain, typically in paper format, to the district level. Data are also passed laterally to the different vertical programs, such as malaria and family planning/reproductive health (FP/RH), bypassing all intermediate steps, to be collected and analyzed by the parent unit at the national level. Data collected at the district level are passed in

Figure 5: Data flow to the HMIS
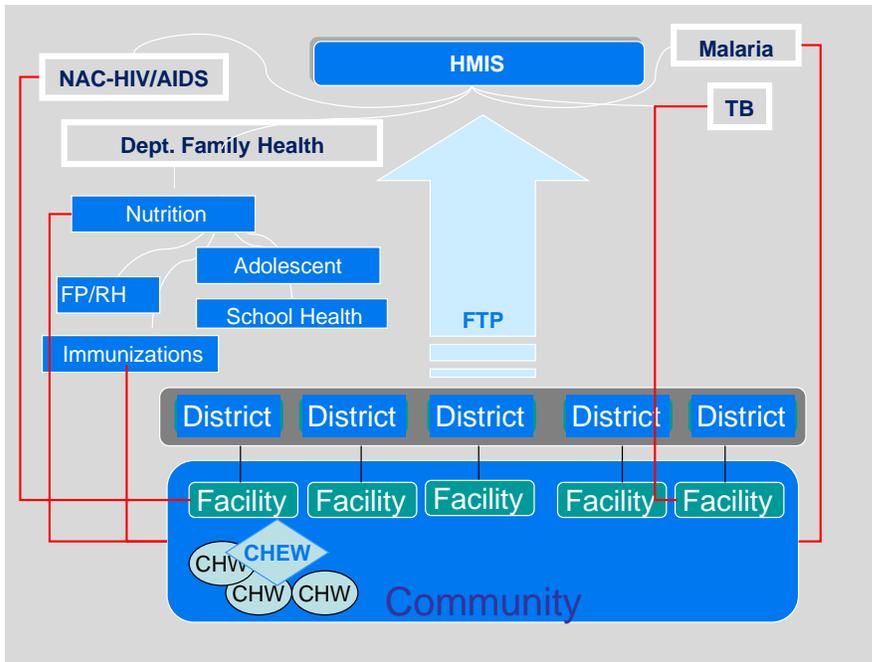
an Excel spreadsheet to the national level, where the data are incorporated into the national HMIS. Comparing this figure with Figure 1, one can see that all facilities, Levels 1–6, report to their respective districts. In addition, while this figure shows a relationship between communities (defined as the catchment areas of individual facilities) and the facility, this is just beginning to be implemented. Acquisition of data typically begins with an encounter between a client and a provider in a health facility, upon which the data are recorded in one or more registers. Typically, when a clinician meets with a patient, the clinician is supposed to mark a tally sheet indicating this, disaggregating the data by diagnostic categories. By the fifth of each month, all facilities, from Levels 2–6 (see Figure 1), are supposed to report the previous month's service statistics to the DHRIO on a series of eighteen forms. Typically, tally sheets are used for the preparation of reports rather than registers. By the fifteenth of each month, the DHRIOs are supposed to aggregate all the facility data onto monthly summary forms as a series of Excel spreadsheets that are usually transmitted using the FTP system, with a wireless modem linked to a 3G cell network directly into the national file server, or by sending the document as an e-mail attachment. If the FTP2 is successful, the spreadsheet is automatically added to a master Excel spreadsheet at the national level. E-mail transmission must be added by manually transferring the files. There are three structural issues with this: (1) community data are not included; (2) the data are aggregated across all facilities, so service statistics from districts and referral hospitals are lumped into a single figure; and (3) the provinces are bypassed and must get their data from the national database. At the time of the team's visit, the national database was only current to December 2009, and the time lag makes the data less useful for their intended purposes of supervision of lower levels.

---

[2] Although FTP is traditionally just a file transfer protocol, for the purposes of the HMIS, the acronym refers to the whole system that facilitates data collection and transfer from the facility and district levels, and storage and analysis at the national level.

Data Issues

Of the 149 "mother" districts reporting to the national level, typically about 80% report on time. There are varying estimates of the completeness and accuracy of the data, but, to the team's knowledge, there have been no studies that have tried to trace the data trail backwards to determine how reliable the data actually are. There have been studies of subsets of the data, including a study of the AIDSCAP reporting system, which suggested that around 32% of the data were accurate. A second study, comparing clinic registers to tally sheets, found that there are 80% more patients in the registers than show up on the tally sheets. This is particularly problematic since reports are typically generated from tally sheets, and not from registers.[3] Adding a comparison between the daily tally sheets and the register would be a simple way to improve data quality significantly.

> **Key Data Weaknesses**
>
> 1. Programs differ on what indicators are needed for management
> 2. Inadequate clinical and data entry staff
> 3. Inadequate data entry tools
> 4. Inadequate motivation and supervision
> 5. No error checking during data transfer
> 6. Only aggregated data available at National and Provincial levels

One major source of error is that if the FTP files are infected by a virus, the national server rejects them, but does not automatically notify either the sender or the recipient that the transmission has failed. The only way for this error to be detected is to check whether all reports have been submitted, and then individually ask whether the districts without recent data have actually submitted reports.

There are many more data quality weaknesses. Most of these are typical for systems that are dependent on paper transmission and manual aggregation and analysis of data. The team sees three major problems: (1) the initial data entry and reporting are dependent on overworked clinicians who see this work as an unwarranted intrusion on their real responsibilities to clients (the team was frequently told, for example, of clinicians who took their registers home on the weekend to fill them out on Sunday afternoon); (2) because calculators are frequently unavailable, data contain errors in addition; and (3) no system has been developed to ensure a reliable supply of current registers and forms to outlying sites.

Data entry into the registers and tally sheets, and accurate transcription of the data into reports and then into computer files, are the two single most important steps in any information system. Failure at this point will mean that all information in the system, no matter how technologically sophisticated, is suspect.

In this program, as with any information system, an enormous amount of effort is required to ensure that good-quality data are entered into the system, and that support systems (tools, supervision, and personnel) remain in place to maintain such quality. In the current situation, the poor quality of the data entered into the system make the entire structure non-functional. Registers are incomplete and often not even filled out at the time of service, and tally sheets are not filled out correctly. There are other issues across the board.

As in many parts of the system, there are exceptional individuals who have gone beyond their training to try to develop error-checking methods. Typically, these are out-of-range techniques, or are anomalous changes in the month-to-month data. For example, the team did not find

---

[3] The team was told of the existence of the work but was unable to see the reports themselves. Therefore, the team has no way to determine the reliability of these important studies.

cross-checking between registers and tally sheets, nor did the team find a second review to ensure correct transcription.

Infrastructure and Technical Issues

Three protocols are used to transmit data within the Kenya HMIS framework; two are electronic, the third is paper-based. The two electronic protocols used are:

- TCP/IP (Transmission Control Protocol/Internet Protocol)

- FTP

Both electronic protocols require telecommunications infrastructure to transmit data via modem (wired or wireless). Cellular networks (2G or 3G) can be used for FTP as well; 3G is preferred because it provides more robust data transfer. Regardless of the electronic protocol used, essentially none of the districts—and few of the PHMTs—are connected by high-speed connections. They depend on the cellular network for all electronic communications. Plans exist to extend fiber-optic cable throughout the country, but the team has not seen the proposed schedule. At any rate, the current transmission of data by wireless modem is very slow, and often must be made at times of low bandwidth demand, in the early morning or late evening. As described below, the HMISD is planning to move to a system that transmits much more data— conceivably as much as a hundred-fold—thus studies must be done to ensure that current installed technology provides sufficient bandwidth. The team is not convinced that the existing wireless modem transfer technology is sufficiently robust to carry large amounts of data, although this may be mitigated by using automated off-peak transmission.

A second drawback of FTP is that it is not secure. File content can easily be hacked at any point in transmission. The team does not believe that this has been an issue with the type of data being transmitted in the current DHIS, but can foresee problems in the future. TCP/IP data transmission through online forms is readily encrypted through SSL/TSL (secure socket layer or transport socket layer), but transmission can be hindered if files are infected with viruses.

Most of the computer systems encountered by the team are plagued by viruses. Firstly, systems have not been established to update the anti-virus software data files, assuming that anti-virus systems have been installed in the first place. Probably one reason for the lack of updates is the cost of connection through the FTP. Secondly, the HRIOs lack the authority to prevent other, higher-ranking individuals in a facility from bringing an infected USB drive to their computers to download files. Thirdly, there are no structures in place to clean up infected, disabled computers. Thus the team found a substantial amount of information hardware that was sitting disabled on a shelf.

The third protocol, which is most prevalent in Kenya, is paper transfer of data. This involves a host of data collection tools. These include multiple registers—sometimes two or three for each clinic—and at least 18 reporting forms, some of which are listed in Annex C. Summary data collected on various forms are transferred to the next level in the system using a combination of both paper transfer, FTP, and, in some cases, TCP/IP.

Most facilities Level 3 and above appear to have electricity, and some have computing equipment that would allow for data collection and transmission using either FTP or TCP/IP transfer. A lack of functional equipment, viral corruption, and the cost of connectivity appear to be the principal barriers inhibiting the use of ICT for the transmission of data. COBPAR is a good example. "System maintenance" has kept the data entry system offline since October 2009. Facilities below Level 3 usually have no equipment and many have no electricity. In the case of one dispensary visited outside of Kakamega in Western Province, the community clinic is literally within arm's reach of the nearest electrical line and yet has not been connected to power.

There are over 60 electronic data collection systems being used throughout Kenya, many with private care providers while others are used in public health facilities. It is not clear whether mobile devices for health are included in this estimate.

Electronic database applications that transmit data require access to a network connection to do so. Most of them have to rely on an internet connection but can use a simple phone line or cell phone network with a modem connection using FTP, as is the case with the current system. Web-based applications such as the DHIS 2 (in development) can access a web server (computer) at one or more remote locations (sometimes referred to as co-location or "cloud computing") over the internet using TCP/IP. Stand-alone computers in a facility can use the same TCP/IP internally if the web server is installed on a local machine and users connect over an internal network or Intranet by a router or cables.

The current state of the HMIS suggests that most data are transferred from the community level, to the district level, and then to the central level in paper form. Exceptions to paper-based systems are certain parallel systems which operate outside of the established HMIS framework.

Data Reporting, Monitoring, and Evaluation

The official definition of "monitoring" in the HMIS strategic plan is: "A systematic process covering routine collection, analysis and use of information about how well a project/programme is going on. It involves a continuous review of the performance of all the components in the project to ensure that input deliveries, work schedules, targeted outputs and other required actions are proceeding as per work plans." (HMIS Strategy, p. v)

While this is the official goal, currently the principal use of the data collected in the HMIS is for reporting. DHRIO performance is judged by whether the officer submits his/her reports on time, not on the accuracy or completeness of the data. Data at each level—facility, district, province—is supposed to be used as the basis for supervision at the level below, but this rarely happens. There are significant exceptions when motivated individuals use their data to intervene actively to improve care. For example, in one district in Western Province, the DHMT noted that one division was lagging behind, and discovered that that division had a dispersed population. They pooled resources from the other two divisions and developed means to reach the scattered people. In another instance, unpaid CHWs discovered that, as the result of their intervention, the incidence of diarrhea had been cut in half. But these examples are the exceptions to the rule. In part, the districts cannot monitor the divisions and facilities because they lack the organizational status to do so, but the DHRIOs are rarely trained to spot trends and to take action.

In the current HMIS framework, data travels unidirectionally and synchronously from facilities to districts to central storage. Notwithstanding the use of chalk boards at the community committee level where CHEWs discuss community data with CHWs, little value-added data or information travel back to their originating sources, suggesting one-way or "synchronous" communication. In a knowledge-based health care delivery system, two-way or "asynchronous" communication is the preferred modality, implying communication through-put and feedback loops where data are gathered, transformed, and communicated in a two-way communication network.

There may be more use of the data in donor-supported vertical programs. Significant use of data for management purposes awaits a "culture of data use," a phrase that the team heard many times from both the GoK and donors.

"Evaluations" are defined as "Periodic assessment of the relevance, performance, efficiency, effectiveness and impact of the projects' activities" (HMIS strategy, p. iv). In fact, evaluations play

a minor role in program management. The definition of an evaluation in the current program appears to be "a special study to determine the outcome of an intervention." This is a very narrow definition of an evaluation, which USAID uses to address a variety of management issues and not merely outcomes. Donor-supported evaluations occur sporadically at various levels in the system, but it is unclear whether these are used for management purposes.

HMIS INDICATOR FRAMEWORK AND COVERAGE

There are currently around 84 indicators that are reported through the HMIS system. These indicators are insufficient to permit individual program management. However, if all the indicators used by each vertical program (including three separate ones dealing with HIV/AIDS) are taken into account, there are somewhere between 200 and 500 indicators in use. All four divisions (the Division of Vaccinations, the Division of Child Health, the Division of Reproductive Health (DoRH), and the Division of Nutrition) of the Department of Family Health are collecting programmatic indicators that are only partially being covered by the HMIS. Because of this, and the poor quality of the HMIS data, there are many program-specific vertical reporting systems running. The basic indicator set must be winnowed down so that the data collected are useful both at the bottom where they are collected, and at the highest program and political levels. To illustrate, the DoRH has 36 indicators: Eight are included in the HMIS, and three are in the permanent secretary's performance contract. The DoRH feels that they need an additional 25 to be able to manage their programs successfully.

PARALLEL SYSTEMS

The national system's capacity is weak in many areas, including the shortcomings with the FTP system in data collection, reporting, analysis, and dissemination, and the lack of indicator coverage. This has had serious implications for DPs data needs and reporting requirements, resulting in many development partners investing in stopgap measures and establishing various parallel systems. Thus, instead of strengthening the national system, investment made it even weaker and more fragmented. Key examples of parallel systems include but are not limited to: (1) the MIAS, maintained by the DoMC; (2) COBPAR, maintained by the NACC; (3) the KePMS, maintained by PEPFAR; and (4) various programs by the four divisions of the Department of Family Health. Interestingly, all these parallel systems are in one way or other supported by the development partners. Moreover, while these parallel systems are required in most cases to report to their corresponding/controlling units or DPs, they are only encouraged to report to the national system. In some cases, some of these parallel systems have their own version of dysfunctions. For example, the NACC reported that very few community-based programs supported by the U.S. Government are actually regularly reporting to COBPAR. According to another report, USAID estimates that the COBPAR reporting rates for the USAID-supported community programs is currently only around 60%.

The vertical programs often get their data from the various facilities, and sometimes from districts, typically with their own forms and data transmission procedures. Not only does this result in a massive increase in workload, but none of the programs produces consistent data that can be used for management decisions. It is clear that by having invested in various stopgap measures and associated parallel systems, development partners actually share a great deal of responsibility for the current weak and fragmented state of the national HIS.

USAID SUPPORT TO THE HIS

Currently, USAID has around 44 health programs in Kenya, each of which collects data. Because of congressional earmarks and Administration priorities, the Mission portfolio is heavily weighted toward HIV/AIDS, malaria, tuberculosis, and maternal and child health. The emphasis on stand-alone programs, which was reinforced by other programs and other donors, is a principal reason why there are so many different health information systems. In the case of HIV/AIDS, different parts of the U.S. Government, including USAID, have helped create and maintain three separate reporting channels for HIV/AIDS alone. While this is likely to continue, even the managers of these categorical programs have come to realize that they need to support some central health mechanisms. In 1989, USAID made a major effort to establish a ministry-wide HIS, but, as was common for major software systems at the time, it failed, partially because it was not user-friendly. USAID then retreated from providing this type of assistance for the next two decades.

APHIA II Support

The APHIA II program has provided direct support to the GoK HMIS at the district level and below over the life of the project. There are eight implementing sub-agreements, corresponding to the eight provinces. Some of the support activities are shown in the box at right. Not all eight programs provide the same level of support; however, they are largely similar. There is a bewildering array of partners in the eight consortia, which are best referenced on the USAID/Kenya/Health website[4] and need not be repeated here.

> **Illustrative APHIA II Support**
>
> - Train health workers on M&E and reporting
> - Support supervision visits
> - Fund air time to submit data
> - Train and support DQA within the region
> - Transmit data from the districts
> - Train on M&E
> - Develop tools to bridge gaps (RH/FP/HIV integration, facility TB summary, PITC, EID, HT)
> - Provide equipment (e.g., computers, printers)
> - Support Annual Operation planning and Quarterly review meetings.

The assessment team's impression is that data collection and transmission would be far weaker at the district level and below in the absence of APHIA II support. In fact, the gaps in government support, including provision of registers and reporting forms and the lack of support for air time to submit reports by modem, would not have happened as easily had APHIA not made its resources available. The biggest problem that the APHIA program introduced to the HIS is that each implementing partner developed its own data processing and internal management systems, which do not correspond to the GoK system. While some of this support will continue under the upcoming APHIAplus projects, they will need to follow guidance from the central HMIS.

Despite several years of effort, the team does not believe that the APHIA projects have left any sustainable results in terms of the HMIS.[5] The only way that facility and district-level data collection and reporting can continue is if donor support continues, or if there is a sudden mobilization of GoK effort. To date, the GoK has not made arrangements for this. As shown in Table 2 above, only 18% of required HMIS staff are on the ground. In another example, heavy-duty photocopiers were purchased for the provinces so they could print and distribute report forms. However, no provision was made to purchase paper, cartridges, maintenance and repair,

---

[4] http://kenya.usaid.gov/programs/health/projects
[5] This is not true for the separate APHIA Evaluation project.

or means of distribution to the districts, despite funds being budgeted for this purpose. In the districts visited by the team, much of the system will grind to a halt when APHIA leaves. To avoid this, the recommendations stemming from this assessment urge the GoK to use its own mechanisms to ensure that adequate supplies and other support are available.

APHIA Evaluation

- Supported, coordinated, and managed annual and semi-annual PEFPAR reporting among U.S. Government implementing partners.
- Provided substantive input and feedback on the national HIV/AIDS results framework and M&E Plan for the Kenya AIDS Strategic Plan III.
- Developed capacity-building tools and materials and provided technical and financial support to the provincial roll-out of COBPAR. (The team notes, however, that the COBPAR system has not been functioning since 2009 because of "systems maintenance.")

Other USAID Support

Measure/DHS

- Conducted the 2009 Demographic and Health Survey.
- Conducted the 2009–2010 Kenya Service Provision Assessment (SPA).
- Is working on the Health Sector Database Enhancement, which will link health information to a geographical database.

In general, Measure/DHS is highly valued by the MoH in providing a wide variety of support to the KNBS, going beyond the population-based surveys covered here.

Health Systems 20/20

- Performed the Health Systems Assessment 2010 (still in draft).
- Designed HMIS programs for a limited number of districts.
- Attempted to reconstruct data for the past decade.

iTech

iTech has been working with the MoMS to develop electronic medical record (EMR) standards and programs using the best international standards available. These, however, seem to be oriented to internal hospital patient management, and not to providing additional information through the HMIS. The team notes that, on their website (http://www.DHIS2.org/), the HMIP DHIS 2 states that the DHIS 2 is not capable of supporting EMRs. Presumably, future releases of the software will be able to support this type of data. iTech has also pioneered the use of SMS messaging to transmit data.

NASCOP

JHPIEGO's ACCESS Uzima project has provided a great deal of support to NASCOP. However, most of this has been used to develop standards and training programs for a host of providers. While the team certainly recognizes JHPIEGO's world renown in these areas, the support to improved record-keeping and transmission of data has been within the context of this vertical program.

NACC

The council is based at the cabinet level, rather than being under the MoH, as are NASCOP and PEPFAR. For the most part, the NACC does not appear to be funded by USAID and it has its own reporting system. None of the three HIV/AIDS programs produces data that are consistent with the others, and none of them seems to be motivated to address this discrepancy.

Sentinel Surveillance

There are five ongoing sentinel surveillance sites in Kenya, with varying degrees of support from the CDC. The team visited the most active site, in Kisumu, and discussed the work of two other sites with the Kisumu directors. It is clear that the purpose of these sites is to collect research information and publish papers. There is no collaboration between the sites, and, more importantly, the individuals the team spoke with expressed no interest in such collaboration. In one instance (not supported by the CDC), ten rounds of surveys had been completed and the data entered into computer files, but no analysis or publications have resulted. These surveillance systems are unlikely to play a significant role in Kenya's HIS.

DoRH

JHPIEGO's ACCESS Uzima project has provided a great deal of support to the DoRH, particularly in the domain of information-sharing. A review of one of the workplans indicates that the information is to be shared within the program and its stakeholders, the public, and other clinical providers. There is no mention of developing links to the HMIS.

Division of Child and Adolescent Health and Division of Nutrition

The team was unable to determine the precise USAID inputs to these two MoH divisions. If anything, the team believes that they have stand-alone systems, since the existing indicators for the HMIS do not provide sufficient specific information to manage these programs.

DoMC

Like many of these programs, the DoMC has many donors. The bulk of malaria funding comes from the Global Fund (78%), with smaller amounts from other donors, including the Presidential Malaria Initiative (PMI) and DFID. The PMI portion of funding is generally directed at prevention by distributing impregnated bed nets, procuring drugs and patient treatment, and providing much less support to management information systems, although some funds are being used to link the DoMC's interim tracking system to a more robust logistics management information system that also successfully serves the needs of the other seven MoH divisions. Measure/DHS III are also fully funding a 2010 Malaria Indicator Survey to measure coverage of malaria interventions and malaria case management on the national level. This effort represents $1.2 million out of a $40 million budget. This, of course, is the type of vertical management program that the HIS is supposed to replace.

The team notes, however, that, since malaria is so widespread, this division cannot support the facility-level data queries that so many other programs have. The malaria situation is further complicated by the fact that, in most of Kenya, malaria is treated on the basis of a clinical (i.e., presence of fever without other obvious source) examination and not on the basis of a laboratory diagnosis. No one knows what the true incidence and prevalence of malaria is in Kenya. JHPIEGO's ACCESS Uzima project has also provided support to the DoMC, but none of this appears to have gone toward information management.

Division of Vaccines and Immunizations

This project provided the team with monitoring reports from district visits. They seem to be well planned and quantified. This is unlikely to have occurred without USAID support.

Division of Lung, TB and Leprosy Diseases

This division tracks some 200 indicators to work toward seven objectives, and has focused on building internal, vertical programs of monitoring and evaluation. Patient data are captured at the facility level and then reentered into a TB register. Analysts also track laboratory records to ensure that they have complete diagnostic data. This division has received substantial assistance from USAID as part of the initiatives to combat tuberculosis and HIV/AIDS. Quality assurance techniques only apply to the quality of laboratory examinations, not the quality of the data in their system.

KNBS

The KNBS has received help from a variety of programs already listed above, in particular from the Measure/DHS project. It has received support to conduct a series of national population-based surveys that have provided needed information to the ministries about the disease situation and living environment on the ground.

Overall, at the country level, the current USAID program has not been responsive to Kenya's technical and organizational M&E/HMIS health sector needs. The current programs do not have the appropriate skills mix to help build a single HIS reaching from the central to the peripheral levels. In the upcoming projects, USAID must require its implementing partners to abandon their vertical programs and use standard GoK reporting systems.

OTHER DEVELOPMENT PARTNERS

According to the HMIS Strategy 2009–2014, major support to HMIS comes from various development partners, namely DANIDA, UNICEF, WHO, the World Bank, DFID, USAID, the CDC, the European Union, PEPFAR, and the Clinton Foundation. Regarding the HIS, this report will briefly discuss the support aspects from three other DPs, namely the World Bank, DANIDA, and DFID.

World Bank

In June 2010, the World Bank signed a $100 million credit for the Kenya Health Sector Support Project (KHSSP). The project will provide funds to support a variety of HIS services. The highest level of M&E responsibility will be placed in the SWAp Secretariat. The role of the SWAp Secretariat is to maintain the indicator performance table and analyze progress and effects periodically in the context of the AOP. Feeding into the SWAp Secretariat's M&E function are four supportive and more detailed nodes: (1) the HMIS unit; (2) the Division of Technical Services (including PHC); (3) the Orphans and Vulnerable Children Project MIS; and (4) the Kenya Medical Supplies Agency.

The project will provide resources for the recruitment of some staff, including HRIOs, ICT officers, and statisticians. Once those staff are recruited and trained, supportive supervision will be further strengthened under the Health Sector Service Fund (HSSF) and will be made more structured using "standardized facility score cards" which allow quantification of achievement. There will be separate score cards for dispensaries and health centers. In addition, there will be efforts to support a data quality strategy and specific data quality measures in selected districts.

DANIDA/DFID

DANIDA and DFID work together to manage the HSSF. While there are many aspects of this activity, as far as the HMIS is concerned the main objective is to strengthen data collection and analysis for monitoring and evaluation of the KEPH to improve planning and budgeting. The main strategies are to support the roll-out of a national M&E system to all health facilities, and to strengthen health workers' and health managers' use of data to inform decision-making.

DANIDA has managed much of the work that has gone into the selection of the DHIS software package and the customization process. They finance meetings, workshops, study visits, and technical assistance.

The M&E Strategy Plan and Policy have provided these products: An "indicator manual" that includes standard operating procedures (SOPs), family planning registers, and a local firm's audit of the overall system. (The team did not have access to the audit.)

Technical assistance was provided to support the selection of a new nationwide HIS program, and "District Health Information System v.2" freeware from the Health Management Information Programme was selected. Planned TA for the roll-out of the HMIS software was delayed until the HMIS unit completes its review of the software based on current information needs of the sector (taking into account the revised integrated HMIS tools with registers, tally sheets, and summary forms). An up-to-date Master HF list, including codes, has been finalized and was rolled out just before the team arrived in-country. HMIS will thereafter require TA support for design and development of the HMIS integrated system, and train and deploy appropriate staff in the use of the software and maintenance of the database.

A total of 99 computers were procured for districts and provinces to support data management in addition to earlier procurements during Phase 1 of the roll-out of the District HMIS (Kwale model). A total of 149 districts have been provided with computers. This leaves a gap of 35 new districts to be supplied with computers: 12 computers are planned for a model hospital, and one computer for one district yet to be selected for data management. The HMIS is therefore requesting an additional 48 computers to support the relevant districts and model hospital in data management, and also 48 CDMA mobile phones to support them in communication and data transfer. Additionally, four computers are required for the older four districts in NEP to replace malfunctioning computers.

OTHER MINISTRY AND UNIT FUNCTIONS

Ministry of Planning, National Development and Vision 2030

This is the department responsible for developing the annual plans for each ministry and then combining them all into the AOPs. The main subsection that USAID has supported, principally through the Health Systems 20/20 project, is the NIMES. Since one of their principal roles is to generate and authorize the indicator lists, they have received support to accomplish the task—although more work will be needed as the indicator list expands to meet central program management needs but the indicators required for assessment of ministry accomplishments become more concise.

KNBS

This bureau is responsible for vital registration, the national census, and conducting a variety of population-based surveys. It has received a great deal of support from Measure/DHS in conducting the 2008 DHS and in conducting at least one additional survey annually.

MOH PLAN FOR NEXT PHASE: DHIS 2

Even though the current HMIS system is only three years old, its weaknesses have become apparent to all. Because of the degree of aggregation, lack of coverage, and the inaccuracy of its data, it cannot be used for program management purposes, even if it does meet the needs of the highest levels of the MoH. With support from DANIDA, the ministry has elected to replace the current system with the DHIS 2, which is shareware developed in South Africa and augmented by workers in Norway and India. It was developed by the HMIS program and is described as being a "solution cover(ing) aggregated routine data, semi-permanent data (staffing, equipment,

infrastructure, population estimates), survey/audit data, and certain types of case-based on patient-based data (for instance disease notification or patient satisfaction surveys)." The system supports the capture of data linked to any level in an organizational hierarchy, any data collection frequency, a high degree of customization on both the input and output side (http://www.DHIS2.org/). The team did not review the product itself, but from various documents, presentations, and discussions, it appears to be a reasonable choice. The team received contradictory information about its state of adoption, with HMIS staff stating that it will be functional on a pilot basis by the end of 2010, but others stating that the decision on which version (i.e., 1.4 or 2.0) to use is still pending. While the system is optimized as a web-based application, it also supports stand-alone/upload situations.

VI. KEY FINDINGS AND CONCLUSIONS OF ASSESSMENT

As stated in the methodology section in this report, the team conducted many group meetings and interviews, visited various facilities, reviewed large numbers of documents, and questioned a broad section of HIS producers and users of information regarding the following seven overarching strategic areas:

1. Data quality (accuracy, currency, integrity, timeliness)

2. Human resource and human capital

3. Institutional capacity

4. Health knowledge economy and culture

5. Infrastructure and technology

6. Intra/inter-sector coordination

7. Policy environment and management

Given the crosscutting nature of the above areas, the team collapsed these seven areas into four key thematic areas as the basis of the detailed assessment while maintaining a seven-point lens. Based on the findings and the team's understanding from the assessment, these areas stand out as pillars of possible interventions that would have a holistic and systematic impact in strengthening the HMIS. As such, the team identifies them as "key strategic future direction thematic areas":

1. Data collection, quality, and access

2. Technology, processes, protocols, and the human interface

3. Policy and organizational development, and management

4. Information products, data use, and knowledge management

DATA COLLECTION, QUALITY, AND ACCESS

In theory, there should be a demand for data to support decision-making coming from the AOP and the National Health Strategic Plan. In fact, the demand does not really exist because the data are incomplete and inconsistent, even from the vertical programs, as discussed above. The demand for data to support informed planning and management decision-making at different levels is being driven by the National Health Strategic Plan and its AOPs, and the performance management system at the national level. This demand for data at the sector level is in line with the data needed to manage the health function—health statistics, management, and population surveys—as well as data needed by NIMES, managed by the Ministry of Planning, National Development and Vision 2030, which prepares national annual progress reports. The detailed data collection and quality findings and issues are discussed above in the sections "HMIS Structure and Data Flow" and "Data Issues."

As with any information system, this program requires an enormous amount of effort to ensure that good-quality data are entered into the system, and that support systems (tools, supervision, and personnel) remain in place to maintain high quality. In the current situation, the poor quality of the data entered into the system make the entire structure non-functional. Registers are

incomplete and often not even filled out at the time of service, tally sheets are not filled out correctly, and there are other issues across the board.

Key Weaknesses

- Programs differ on what indicators are needed for management.
- Clinical and data entry staff are inadequate.
- Data entry tools are inadequate.
- There is inadequate motivation and supervision.
- There is no error-checking during data transfer.
- Only aggregated data are available at the national and provincial levels.

Barriers to Address Weaknesses

- There is a lack of coordination across programs.
- Material and human resources are inadequate.
- There is a weak culture of "supportive supervision" and feedback.
- There are ICT limitations.

TECHNOLOGY, PROCESSES, PROTOCOLS, AND THE HUMAN INTERFACE

Accurate data for decision-making are essential for effective monitoring and evaluation, and the most critical elements for M&E are the health information systems that are used to collect and record data. These systems include many information and communication technology components, some of which are used to tabulate and summarize indicators for M&E reporting purposes. Detailed infrastructure and technical findings and issues have been discussed in the section, "Infrastructure and Technical Issues."

Vertical program funding characteristically includes support for information systems designed to capture performance data linked to specific disease and health accounting codes. Whereas these data satisfy accounting and program reporting requirements for policy and program planning where disassociated aggregate data suffice for resource capitalization, these same data have little relevance for, and do little to impact, health outcomes. Health outcomes are improved when the care provider understands the patient holistically and treats the whole person. Aggregating these data can then inform reporting. In theory, this is what should be happening. In practice, the health care provider has little time to engage with the patient and record the encounter or health event as presented.

Lack of available human resources, especially at points of care and service provision, is unanimously understood to be the central issue. HR not only impacts M&E and the HMIS but service delivery. Because the health care provider is also responsible for capturing patient data, and tabulating, tallying, summarizing, and collating them on a daily, weekly, and monthly basis for submission to the DHIS, the provider's time is split between essential client care and the necessity of reporting program output. In many instances these data summaries are not completed the same day or week that the services were provided; instead, the data are recollected from memory.

Key Weaknesses

- There is limited installation of ICT equipment below Level 4 health facilities.
- Digital technology and software applications are non-existent, weak, or non-working.
- Health interventions are single-purpose rather than multi-sector and cohort-oriented.
- Excessive time is spent in program indicator reporting forms (tools).
- There are limited patient-level recording systems that are capable of tracking patients over time.

Barriers to Address Weaknesses

- ICT procurement is not capitalized and does not appear as a budget line item.
- There is limited appreciation of the value and cost savings from ICT investments.
- There is no "help-desk" support for facilities when equipment or protocols fail.
- There is overt emphasis on program indicator reporting over immediate data use.

POLICY AND ORGANIZATIONAL DEVELOPMENT AND MANAGEMENT

The GoK and stakeholders are working toward a single policy and strategic framework to coordinate the HIS. The health sector has established a coordination mechanism to guide stakeholders who are supporting the ongoing development of standards to help develop various aspects of the M&E and HMIS systems, such as indicator development, standards for different components like electronic records, and the district health information system. An organizational structure is in place to support the management of the HIS in the health sector, coordinated through the department with responsibility for technical planning and evaluation, under which the division responsible for the HMIS falls. The HMISD has structures at lower levels up to facility levels. As explained in the section entitled "Policy Environment," the structure is understaffed, data use is through the health strategic plans, and their associated AOPs and the performance contract system are driving data use. This fits within the NIMES managed by the Ministry of Planning, National Development and Vision 2030, which prepares national annual progress reports.

Although the policies, strategies, and organizational structure needed to guide the HIS have been determined, or are already in place, there remain many parallel systems which affect the capacity of the HIS. While the AOP and performance contract management have begun to promote the use of data for decision-making, the institutionalization of data use has not yet occurred, and the competition and mandate overlap in health information management between the two ministries of health continue to burden an already complex management structure.

Without strong leadership from government to ensure compliance and adherence, both within Government and by stakeholders, to the policies and strategies being developed, parallel systems and agendas will continue to undermine coordination and resource use, and weaken the HIS. Furthermore, without adequate resourcing of HIS operations—in particular the provision of adequate human resources with requisite skills, especially at the data generation level—implementation of these policies and strategies will be negatively affected.

Key Weaknesses

- The culture of data use for planning and decision-making is weak at all levels.
- Parallel data systems exist within government and with stakeholders.
- Technical working groups provide weak coordination mechanisms for system development.

- Inter and intra-department coordination in M&E and HMIS are weak.
- Coordination and supervision between and within levels are weak.
- Capacity in data management (collection, DQA, data use, etc.) remains weak at all levels.

Barriers to Address Weaknesses

- Strong leadership toward a unified HIS is lacking.
- Turf issues between the two ministries make it difficult to address coordination.
- The culture of data use is not institutionalized due to unreliability of the data and competing reporting requirements.
- Capacity at each level, in particular the number of staff and their skill levels—especially at the data generation level—will be a key challenge.

INFORMATION PRODUCTS, DATA USE, AND KNOWLEDGE MANAGEMENT

Production of quality data that lead to useful health information and knowledge products, and their access, analysis, and use, are at the heart of evidence-based planning, policy formulation, decision-making, and action. Reliable information needs to be made available in the right format at the right time. As such, in the ultimate quest of impacting health outcomes in Kenya, the HIS is the principal entry point to provide such crucial information and knowledge. However, after careful and detailed review, the team discovered that demand for information and knowledge products in Kenya for analysis, learning, planning, and decision-making is significantly low at all levels of the health system.

Data dissemination and use seem to be the most weak, especially for the routine data collected by the HMIS. The FTP system lacks features to facilitate analysis and use of information for decision-making. The one annual flagship publication of the HMISD, *Annual Health Sector Statistics Report*, is often out of date. While many of the clusters had periodic individual organizational reports, Vital Registration had not prepared any report for the last ten years. Respondents reported that in most cases plans cannot be translated into effective actions as they are typically not linked to the underlying information from the HIS. There is very little allocation of resources for publication and dissemination of periodic reports, let alone investment in information generation, analysis, and creation of knowledge management products that would facilitate learning and sharing of experiences and best practices. On the evaluation and research side, currently, there is very little being done on having any sort of evaluation. While "impact evaluations" are critical for long-term purposes, the practice of having evaluations done at interim or "midpoint," along with "end point" at the completion of a program, is critical in order to determine if a program has achieved its stated goals, and to document lessons learned.

The culture of information generation, knowledge-capturing, and knowledge use at all levels remains extremely weak and underdeveloped. In order to trigger a culture shift and strengthen the demand for information at all levels, serious efforts must be made to promote information use, and in turn build and strengthen capacity at all levels to respond to this demand. If the goal of a healthy Kenyan population is to be realized, there must be readily available and accessible HMIS data, both to empower the targeted beneficiaries and for planning, management, and decision-making. Reliable digital and paper-based information products and other knowledge-based goods need to be readily available and accessible across the board.

Key Weaknesses

- There are few real-time or structured data products or ready access to data.

- Very few knowledge management products are used to facilitate learning and sharing of experiences and best practices.
- There is little or no data analysis and information use at each level.
- There is limited use of a structured database or data warehouse at each level.
- There is limited "E" in M&E.
- Technical knowledge on understanding of indicators and methodologies is lacking.

Barriers to Address Weaknesses

- The culture of information generation and use is underdeveloped and weak.
- Implementation of HIS policies is slow and inadequate.
- There is a lack of awareness and advocacy of learning and knowledge management.
- There are insufficient resources, including weak human capital.
- The quality of data is poor and standards are unreliable.

STRENGTHS AND OPPORTUNITIES

Many aspects of capacity, including capacity in data management (collection, DQA, data use, etc.) remain very weak at all levels. Despite this, the assessment team believes that there are real strengths to build on. These include:

- The HIS Policy and HMIS Strategy frameworks have been established.
- Stakeholders agree on the importance of achieving a unified HIS.
- Performance contracts and performance management systems are in place with the AOP.
- The FTP is to be replaced with a web-based system.
- There is commitment to community engagement.
- Partners are in place at all levels.
- There is a wealth of experiential knowledge.
- Organizational structures are in place.
- Exceptional and dedicated individuals exist at all levels.

The issue is how to build on the strengths while mitigating the weaknesses, which will be addressed in the next section.

VII. DISCUSSION OF RECOMMENDATIONS

In this section, the team draws on all findings and conclusions developed throughout the assessment and summarized in the preceding section to present an overall set of recommendations for strengthening the HIS in Kenya. It is the team's firm belief that in order to have an integrated and unified HIS, the GoK and stakeholders must take a well-coordinated approach, and not the piecemeal approach which has typically been the case so far. As such, the team has laid out a detailed matrix of recommendations in the following four broad thematic areas covering the whole HIS. An overview of each of the four areas, along with associated components, appears below (a detailed list of recommendations and associated illustrative activities can be found in Annex D).

MANAGEMENT AND COORDINATION

The team believes that the recommendations listed below in the three components address all the management and coordination issues discussed earlier. These recommendations should trigger actions that will address the specific weaknesses and move the HMIS and HMISD toward their broader goals.

Component 1–Leadership and Advocacy

The recommendations under this component will help the HMISD provide the necessary coordination and direction to the health sector in developing the HIS. Some key intended outputs of this component are the following:

• A national HIS Champion in place.
• The profile of HMISD elevated by establishing it as a department within the MoH and providing sufficient human and financial resources for the department to be able to perform its functions.
• The overall profile of the HIS heightened, as demonstrated through its inclusion in resource allocation and other management decisions.
• Effective implementation of the HIS supported by all sectors—a culture shift to the point where the HIS is not seen as external to non-HIS departments.

Component 2–Policy and Coordination

The recommendations under this component will help make the HIS Policy and the HMIS strategic plans and other attendant HIS policies and standards operational. This will help translate the policies into prioritized and budgeted implementation plans that are integrated into health sector AOPs and the performance contracts of departments and their managers. Some key intended outputs of this component are the following:

• Policies translated into prioritized and budgeted implementation plans which are part of the sector AOP.
• New policy areas developed, particularly of the health sector monitoring and evaluation system.
• Policies and standards developed on an ongoing and as-needed basis.
• Agreed-upon policies enforced, especially support toward one unified and integrated HIS.

Component 3–Resource Management

The recommendations under this component will address the grossly underfunded nature of the HIS in the areas of financial, material, and human resources, which will help ensure that activities in the AOP are funded as required for success. Some key intended outputs of this component are the following:

- Long-term government funding for the HIS function.
- Greater human resource capacity, and an improved understanding of all health sector staff of their contribution to the HIS functions, along with their enhanced skills.

ICT TECHNICAL SUPPORT AND SERVICES

This area concentrates on establishing policies and protocols to support the development, launch, and operation of ICT-based systems in the HIS. The team has grouped its recommendations in the following four components, in which each recommendation should trigger different action(s) toward fulfillment of the broader goals in the area.

Component 1–Hardware, Software, and User Services and Infrastructure

The recommendations under this component will address weaknesses in the development and operation of new systems and databases, interoperability, and routine infrastructure issues. Some key intended outputs of this component are the following:

- Support to development and implementation of various systems, such as the DHIS 2, electronic health records, etc.
- Support to implementation of ongoing systems, such as COBPAR and other systems as they come online.
- Policies and protocols that support interoperability, such as unique identifiers for facilities, patients, personnel, and services.
- Development of subsystems to facilitate data sharing, such as intranets, web-based data access systems, and data transfer systems.

Component 2–Systems Implementation and Support

The recommendations under this component will help establish the standards and lists needed for adequate inventory, as well as finalize specifications for hardware, software, and other supporting equipment at all levels. Some key intended outputs of this component are the following:

- Support for developing specifications for software and hardware and other supporting equipment.
- Support for implementing hardware and software components of systems, such as the DHIS 2.
- Establishment of help desks and other technical support services to support implementation.
- Negotiations with service providers on cost-effective bulk rates.

Component 3–Databases

The recommendations under this component will help enable the HIS to develop data storage capacity at different levels and the appropriate systems to facilitate data-sharing. Some key intended outputs of this component are the following:

- Establishment of secure data warehouses with appropriate backup systems.
- Protocols to support access to data from databases for different users.

Component 4–Resource Management

The recommendations under this component will help identify funding sources, especially through the government budget, for all aspects of ICT. Some key intended outputs of this component are the following:

- Support for the costing and inclusion of ICT (equipment, support, development) in the health sector's AOP budget.
- Mechanisms established for funding ICT activities at each level, using resources available at the different levels, such as resources available at the community, facility, district, provincial, and national levels.

SYSTEMS CAPACITY DEVELOPMENT

This area concentrates on supporting and strengthening the implementation and operational-level capacity of the HIS function at all levels—national, provincial, district, facility, and community. Details and related issues were discussed previously, along with key weaknesses and the barriers to addressing them. The team has grouped its recommendations in the following three components, in which each recommendation should trigger different action(s) toward fulfillment of the broader goals in the area.

Component 1–Data Collection and Quality

The recommendations under this component will allow the system to supply adequate data collection tools and improve within facilities the data collection processes both for quality and institutionalization. Some key intended outputs of this component are the following:

- Systems capacity strengthened with better supply of data tools, without stock-outs, at all the appropriate levels.
- Systems established for better data quality management, and its implementation at all appropriate levels.
- Greater comprehensiveness of data collected, and improved data quality.

Component 2–Human Resource Development

The recommendations under this component will help the GoK implement its policies to increase the number and the mix of personnel for the HIS function at various levels. Some key intended outputs of this component are the following:

- A human resources management plan implemented that will meet the HIS's HR needs, including the recruitment and training of new health information workers, as well as training of other health care workers on their roles.
- Appropriate trainings developed for health information workers, as well as other health care workers, in order to facilitate skills development for different functions from the community to the national level.

Component 3–Supervision

The recommendations under this component will help strengthen supervision within the HIS, and will include the development and implementation of supervision standards that support the effectiveness of the HIS. Some key intended outputs of this component are the following:

- Tools and trainings on supervision developed.
- Resources allocated to facilitate implementation of supervision system.
- Feedback mechanisms established between different levels on data collection and use.
- Communications established on expectations and requirements between and within each level.
- A feedback mechanism established and operational between the HIS and health data users.
- Improved data collection and data use.

COMMUNICATION, LEARNING, AND KNOWLEDGE-BASED PRACTICES

Demand in Kenya's health system for information and knowledge products to use in public awareness, analysis, learning, planning, and decision-making is exceptionally weak. Details regarding this have been previously discussed, along with key weaknesses and the barriers to addressing them. In order to improve this area, the team believes that the HMIS needs to: (1) strengthen information demand, supply, and use; (2) build human capacity through learning and knowledge management; and (3) raise public awareness by disseminating information products aimed at different audiences. The team has grouped its recommendations in the following three components, in which each recommendation should trigger different action(s) toward fulfillment of the broader goals in the area.

Component 1–Information Demand, Supply, and Use

The recommendations under this component will help develop and implement triggers and facilitate a culture shift to strengthen demand for information at all levels, devise and supply various information products to meet the demand, and increase use of information. A key objective is to break the vicious cycle of poor data quality, limited data availability, and lack of data use in planning and decision-making. Some key intended outputs of this component are the following:

- Wide-spread workshops and forums launched to hold strategic and consultative dialogues with various stakeholders at all levels in order to strengthen information demand.
- Data needs assessments completed at all levels, and various analytical tools and knowledge management products designed accordingly.
- Data utilization plans developed for various stakeholders at all levels to improve operation, planning, decision-making, and performance management.
- Team workshops held at all levels to teach staff how to "manage with data," i.e., to use knowledge and information products in carrying out everyday tasks, including decision-making.
- Evaluation mechanisms established in key project and program design.

Component 2–Human Capacity Development

The recommendations under this component will help strengthen the learning and knowledge management aspects of human capacity development in order to address the issues of

information and knowledge generation and their use. Some key intended outputs of this component are the following:

- Both on-the-job training and periodic retraining programs established, and all clinical and HRIO staff trained.
- A one-month pre-assignment training program established and mandated for all clinicians (including physicians) on the various management tools they need to do their jobs.
- Supervision training and refresher training established and mandated specifically for managing health information systems and their staff.
- Best practices captured, institutionalized, and distributed through quarterly newsletters and/or information briefs.
- Workshops held at all levels for people to exchange experiences and perspectives on their roles and issues.
- Participation by every HRIO and clinician in two "learning missions" per year across geographic and administrative boundaries in order to facilitate hands-on learning, sharing, and documenting best practices.
- The "Mobile Health Knowledge Express" program launched and taken to each facility, especially the ones in remote areas and without internet access.
- An incentive system established for self-learning.

Component 3–Public Awareness and Dissemination

The recommendations under this component will help raise public awareness on both the availability of information and the importance of its use, especially in making health choices. Some key intended outputs of this component are the following:

- Public-awareness and outreach programs created at all levels, including but not limited to community dialogue, academic and radio discussion forums, house visits, and billboards.
- Quarterly print and electronic materials on health information and its usefulness prepared and distributed at all levels.
- A reliable and up-to-date web-based "Public Health Information Database," along with Master Facility List, established and accessible.
- Free access ensured to essential health-related information via mobile phone devices.

VIII. RISK ASSESSMENT AND KEY SUCCESS FACTORS

On the road toward strengthening and establishing a unified HIS, the GoK, with support from various development partners, has undertaken various initiatives and shown serious commitment. However, this has resulted in a number of risks, outlined below along with possible mitigation steps. A risk assessment and mitigation strategy should be created and reviewed on an annual basis.

OWNERSHIP AND LEADERSHIP

Strong ownership and effective leadership go hand in hand and are the heart of a strengthened and unified HIS. Government has shown increased commitment to the health sector, and in particular to the HIS, by formulating and approving both a HMIS Strategy and a HIS Policy. However, no one operational unit has sufficient authority or capacity to stand out as the lead. As such, ownership and leadership remain weak factors and pose critical risks as observed by the many unfunded activities for the HIS in AOP 6. This is also illustrated by a lack of advocacy and support for information, as apparent in the weak status of the HMISD. It is most important that there be sufficient political ownership at levels above the MoH, specifically the Ministry of Planning, National Development and Vision 2030, the Ministry of Finance, and the Department of Personnel Management—which must be willing to make the necessary investments if the overall program is to succeed.

Mitigation Steps

1. Take concrete steps at the leadership and planning level to establish better links between strategy, policy, and priority setting. This should also establish better links between planning and budgeting, which in turn should ensure that all HIS activities in the AOP are fully funded.

2. Implement HIS policies at a faster pace and in an effective manner.

3. Identify a strong "national champion" who can advocate for the HIS, and mobilize people and resources at all levels of the system.

4. Consider raising the profile of the HMIS by elevating it to department status with the authority to coordinate and enforce policy. Provide the necessary resources for its effective functioning.

HIS COORDINATION, MOMS, AND MOPHS

While the HMISD seems to have a core set of very dedicated and capable people, effective collaboration and coordination between the two split ministries remain a serious concern and thus poses a significant risk to the proper functioning of the HMIS and the unified HIS. While the establishment of the HSCC Secretariat, new ICCs, and the HISCC have improved collaboration considerably, significant weaknesses remain both at the leadership and implementation levels, including the HMIS.

Mitigation Steps

1. Increase the number of consultations and improve coordination and alignment at the leadership level to provide unified and strong support and guidance to the HMIS.

2. Fully implement the agreed-upon arrangements between the two ministries.

3. Encourage regular, active, and heightened participation and coordination among the HSCC, ICCs and the HISCC.

4. Focus on the patient by ensuring that all units can coordinate patient flow and the provision of services with clear trace routes from the lowest facility to the highest.

HUMAN RESOURCES

There is a severe shortfall and unequal distribution of human resources. This is a critical threat to the realization of a successful and strengthened unified HIS. According to the HMIS strategy, only about 20% of required personnel are in place for the HIS. The deficiency is highest for HRIOs, according to the HMIS strategy. However, little attention has been paid to the possibility of increasing the number of clinicians so they will be able to meet both their clinical and data entry responsibilities at the point of service delivery. In addition, existing human resources are not optimally effective thanks to lack of training, equipment, and weak infrastructure. While the Government has committed itself to providing line items for both equipment and an additional 1,500 HMIS staff at all levels over the next five years, it is unclear whether this support will become available.

Mitigation Steps

1. Identify and mobilize support, form partnerships, and develop mechanisms to address staffing needs in an expedited manner.

2. Plan and distribute staff more evenly across various geographic areas and facilities, especially at the community and village levels for maximum health impacts.

3. Review the employment policy for new staff and provide financial incentives for working in remote areas.

4. Build and strengthen human capacity through various formal and informal learning and knowledge management initiatives as outlined in the assessment recommendations.

5. Evaluate and plan for a proper and balanced blend of staffs, especially for the ratio of HRIOs and clinicians.

6. Track actual expenditures and personnel procurement, and work with the GoK to ensure that these commitments are met.

COMMITMENT AND SUPPORT FOR A UNIFIED HIS

There appears to be an agreement among stakeholders on the importance of a unified HIS. However, the path to achieving this is both daunting and complex, and has winners and losers in the process. Anything short of genuine strong commitment and unified support from all stakeholders will pose a serious risk toward the success of the HIS.

Mitigation Steps

1. Encourage a continued leadership dialogue led by the MoH and coordination with all stakeholders, including government, development partners, the private sector, and NGOs.

2. Establish stronger, effective, and transparent communications on the various HIS challenges, including parallel systems among all stakeholders through the MoH discussion forums.

3. Promote more open and honest dialogue about the positions of various stakeholders and discuss ways to support the government-led and government-owned strategy.

4. Urge increased participation and more effective coordination between DPs and the DPHK to support the goal of a unified HIS.

INFRASTRUCTURE AND CAPACITY AT LOWER LEVELS

The usefulness of the HIS depends on the accuracy and timeliness of the information that it provides. Key to this is the accuracy of information at its point of entry (i.e., at the community, household, and facility levels) and its subsequent timely transformation and transmission. Weak capacity and infrastructure at the lower-level facilities act as a major impediment to a strengthened and unified HIS. In addition, the current system depends on wireless modems for transmission of nearly all data from the district to the central level. This assessment reveals that, given the experiences of the DHRIOs and a Japanese consultant to the HMIS, insufficient bandwidth exists to transmit the increased data demands of the new system.

Mitigation Steps

Follow the recommendations made in this report, specifically:

1. Ensure that staff receive adequate training on all job functions, including data quality management and M&E;

2. Supply staff with adequate electronic and paper tools in a timely manner;

3. Provide staff with all necessary equipment, along with internet/FTP connectivity, maintenance, and support, by budgeting and financing provision of these products and services;

4. Track implementation of the DHIS in the pilot district to determine what bandwidth is required and whether sufficient transmission capacity is present;

5. Develop alternative means for those districts without sufficient bandwidth; and

6. Set routine supervision schedules and support their implementation through both government funding and partners' support, and ensure there is written record of action points, advice, and understandings.

CORRUPTION

As in many other places, corruption is a frequent challenge in Kenya. Public systems have been strengthened considerably to detect irregularities, and the Government has shown heightened commitment to acting on corruption. However, governance and corruption remain a risk for any investment in Kenya. The Government's Public Expenditure Tracking Surveys (including the one in 2010) demonstrate that there are governance risks at all levels. The risk of corruption and fraud in the use of funds and other resources, both among implementing partners and at various Government levels, poses a serious threat to the overall success of the HIS.

Mitigation Steps

1. Launch programs to raise awareness of corruption, and build leadership to combat corruption within organizations.

2. Establish robust regular audit arrangements.

3. Form partnerships to combat corruption, and institute strong and transparent public communications.

4. Use a non-commingled, carefully monitored account to fund inputs to the activity.

IX.   CONCLUSION

A strong, unified, and integrated HIS is a very important element in improving the quality of health service delivery and improving health outcomes in Kenya. To demonstrate this connection, a full results chain showing the impact of the implementation of a functional HMIS is shown in Annex E. The HIS is the principal entry point to providing timely data and channels for the information and knowledge exchange that is essential to evidence-based planning and decision-making. In seeking a strengthened and unified HIS, the GoK has taken some commendable steps, including but not limited to: (1) the formulation and adoption of the HIS Policy and the HMIS Strategic Plan 2009–2014; (2) Performance Contracts & a Performance Management System in place with the AOP; (3) a web-based DHIS to replace the current FTP system; and (4) implementation of a very ambitious community strategy. In addition, there seems to be clear agreement among stakeholders on the importance of achieving a unified HIS.

Despite these achievements, significant weaknesses and various barriers to addressing those weaknesses remain. The GoK needs to take bold steps toward a holistic systems-strengthening approach in order to realize its vision of a strong, unified, and integrated HIS. The assessment team has laid out a detailed list of recommendations that will help take this approach across the four broad areas covering the whole HIS (see Annex D). The team strongly believes that while the GoK must take the lead and be responsible for making this happen, development partners also need to step up by coordinating and channeling their support through the national systems. With the commitment of all stakeholders to a "government-led" and "government-owned" HIS, Kenya can soon have a health information system that will allow decision makers to have more effective policy dialogues, monitor data, and plan for health problems, as well as promote equity, empower citizens to make informed health choices, and improve governance and accountability in the health sector.

ANNEX A. SCOPE OF WORK

Global Health Technical Assistance Project
GH Tech
Contract No. GHS-I-00-05-00005-00

Scope of Work
(Revised: 07-07-10)

I.   TITLE

Activity: USAID/Kenya: Assessment of National M&E and HMIS Systems and Development of Program Descriptions for:

1. National HMIS Program

2. National Health Sector M&E Program

Contract: Global Health Technical Assistance Project (GH Tech), Task Order No. 01

II.   PERFORMANCE PERIOD

The in-country portion of the work is expected to take place from approximately <u>Mid-July through August 2010</u> (depending on availability of consultants).

III.   FUNDING SOURCE

USAID/Kenya

IV.   PURPOSE

The purpose of this assessment is to review and document the status of the current national monitoring and evaluation (M&E) system and national health management information systems (HMIS); review workplans of the existing M&E and HMIS mechanisms, and identify areas for improvement. Consequently, assessment results will be used to inform development of project descriptions for the national M&E and HMIS programs.

The assessment team will identify priority technical assistance needs for the host country's national monitoring and evaluation system and national health information and management system, and determine key high-impact areas for support that fit with the Mission's Implementation Framework for the Health Sector, i.e., for intermediate result 2.1. Greater use of strategic information for program management, policy-making and decision. The assessment will review the scope of works of the current USAID partners (APHIA II Evaluation, MEASURE DHS III, MEASURE Evaluation III and Health Systems 2020) that support the host country government in strengthening M&E and HMIS systems. The team will be expected to determine if the current mechanisms are well placed to fulfill the objectives of Result 2.1 of the Mission's implementation framework. Consequently, the assessment team will develop succinct recommendations that will effectively address the desired future priorities to strengthen USAID/Kenya's strategic position in supporting the Government of Kenya to have well-functioning national M&E and HMIS systems and their decentralized sub-systems.

V.   OBJECTIVES

USAID/Kenya's new health sector strategic objective (SO3) is "Improved health outcomes and impacts through sustainable country-led programs and partnerships." It directly supports the Government of Kenya's efforts toward reducing unintended and mistimed pregnancies, improving infant and child health, reducing HIV/AIDS transmission, and reducing the threat of infectious diseases. In recognition of the critical role that health systems play in delivery of sustainable country-led programs, USAID/K aims to have Health Systems Strengthened for Sustainable Delivery of Quality Services. USAID/K's approach will be to support the GOK's *Health Information System Policy*[6] and *Strategic Plan for Health Information System (2009–2014)*[7] in coordination with the GOK and other development partners to ensure greater use of strategic information for program management, policy-making and decision-making.

VI.   BACKGROUND

For many years, and particularly since 1995, USAID/Kenya has supported Kenya's health sector at the national level and in selected districts. Support at the national level contributed to health sector reform, family planning, HIV/AIDS prevention and care activities, and child survival. Support was provided for policy development and advocacy, development of national standards and guidelines for provision of key services such as voluntary counseling and testing (VCT), ART, RH/HIV integration, PMTCT and family planning (FP); national monitoring and assessment such as Demographic and Health Surveys (DHS); cost sharing and health sector reform; and national public health laboratory systems. Program research, conducted in collaboration with national professional bodies and medical schools resulted in progressive new policies and standards aimed to make modern contraception, post-abortion care (PAC), and other interventions more widely and safely available. USAID technical assistance also helped improve systems that make service delivery possible, through assistance to the Ministry of Health (MoH), Ministry of Special Programs, Ministry of Gender and Children Services to strengthen monitoring and evaluation systems, health management information system, national M&E and HMIS technical working groups. USAID and its cooperating agencies worked closely with Kenya's MoH, the Ministry of Planning, National Development and Vision 2030's National Coordinating Agency for Population and Development (NCAPD), KNBS, the Ministry of Special Programs' NACC, and other bodies in planning and implementing national population and health facility surveys.

Organization of the National Monitoring and Evaluation System:

In order to guide the management and accountability to the national and global reporting obligations such as Millennium Development Goals (MDGs), the Government of Kenya developed a NIMES, through which it monitors all its strategic plans including Kenya Vision 2030 Strategy. The goal of NIMES is to provide the Government with reliable mechanisms to measure the efficiency of Government programs and the effectiveness of public policy…provide the Government with the needed policy implementation feedback to efficiently reallocate its resources over time…also set the basis for a transparent process by which the Government and the international donor community can undertake a shared appraisal of results and create smooth release of external support, including budgetary support.[8] The Government established

---

[6] Kenya Ministry of Medical Services and Ministry of Public Health and Sanitation. *Health Information System Policy*. 2009.

[7] Kenya Ministry of Medical Services and Ministry of Public Health and Sanitation. *Strategic Plan for Health Information System 2009–2014.*

[8] Kenya Ministry of Planning, National Development and Vision 2030. *Master Plan for National Integrated Monitoring and Evaluation System.*

a Monitoring and Evaluation Department (MED) within the Ministry of Planning, National Development and Vision 2030 to coordinate the functions of NIMES system. MED receives information from line Ministries, parastatals, reform programs, civil society, the private sector and donor partners and provide feedback-monitoring reports. Some of the key outputs of the NIMES include:

- The National M&E Policy, that sets an enabling environment and legal framework for information gathering.
- Set of regularly monitored sector indicators and a core set of indicators for national monitoring.
- Report on the Millennium Development Goals (MDGs).
- In-depth analysis of census and survey data.

While there are a number of sector-specific M&E sub-systems that operate under NIMES in Kenya, the following are the key divisions within the health sector whose M&E sub-systems are required to feed NIMES with data on key health sector indicators:

- Division of Reproductive Health
- Division of Child and Adolescent Health
- Division of Malaria
- Division of Lungs TB and Leprosy Diseases
- National AIDS Control Council/National AIDS/STI Control Program
- Division of Vaccines & Immunization
- Division of Nutrition
- Kenya Medical Supplies Agency & other commodities management agencies

APHIA II regional health system strengthening activities: APHIA II projects are implemented in eight provinces by different implementing organizations providing integrated service delivery. In every region, the lead implementing partner works with Ministry of Health, and other regional M&E/HMIS coordination structures to strengthen M&E and HMIS functions at provincial, district and lower level facilities. Support is also provided in strengthening M&E activities for the community-based programs especially on OVC, and HIV care and support.

National level health system strengthening activities: Technical support is provided for national monitoring and evaluation system, health management information system and impact/outcome evaluations such as Demographic and Health Surveys (DHS); and Service Provision Assessment (SPA). More directly and through its own staff USAID/Kenya also supports the various technical working groups in Ministry of Medical Services and Ministry of Public Health and Sanitation, Ministry of Gender that are aimed at improving oversight of health and OVC programs.

Existing National M&E/HMIS Mechanisms: Currently the Mission supports national M&E and HMIS systems through four mechanisms:

1. *APHIA II Evaluation*

APHIA II Evaluation project is a 5-year cost-plus fixed fee completion contract between ICF Macro International Inc. and U.S. Agency for International Development (USAID). The APHIA II Evaluation project was designed to contribute to the strengthening of one national monitoring and evaluation framework. The specific objective of the project is to strengthen capacity of Ministry of Health's National Health Management Information System and U.S. Government

(CDC, USAID, DOD and Peace Corps) implementing partners' Monitoring and Evaluation Systems to collect and use HIV/AIDS, FP/RH and MCH data.

Specifically, APHIA II Evaluation has engaged in the following technical assistance areas:

- Technical assistance to National AIDS Control Council to strengthen the COBPAR system
- Support to KePMS
- Support to HMIS division on the development of national DQA Strategy
- Support to DRH to develop and disseminate monitoring and evaluation framework
- Capacity building of local institutions on the M&E of HIV/AIDS, FP/RH, MCH, Malaria
- Technical support on the strengthening of cause-specific mortality through SAVVY in 5 Demographic Surveillance Systems
- Organizational capacity building to collect and use mortality statistics

2. *MEASURE DHS III*

USAID/Kenya has supported the host country government through MEASURE DHS III project in planning, implementing and reporting results in Demographic and Health Surveys, Service Provision Assessment, Malaria Indicator Surveys, and AIDS Indicator Surveys. The project has developed long-term partnerships with KNBS, National Coordinating Agency for Population and Development (NCAPD) and the University of Nairobi in capacity building to plan, implement and produce reports for national household surveys. The project has also been actively working with the GOK institutions including public universities on human resources capacity building focusing on further data analysis. The project has provided technical assistance to GOK and USAID implementing partners in the use of GIS technology in analysis and presentation of program level data.

Specifically, MEASURE DHS III has engaged in the following technical assistance areas:

- Planning and implementation of DHS, SPA, AIS
- Capacity building of local institutions on further data analysis and use (further analysis of DHS, SPA datasets
- Geographic Information Systems component of Master Facility List technical support to the two Health Ministries (build the geo-coded database of health facilities)

3. *MEASURE Evaluation III*

MEASURE Evaluation is a Leader with Associates cooperative agreement; and provides technical leadership through collaboration at local, national, and global levels to build the sustainable capacity of individuals and organizations to identify data needs, collect and analyze technically sound data, and use those data for health decision-making. The project develops implements and facilitates state of the art methods for and approaches to improving health information systems, monitoring and evaluation (M&E), and data use; and we collect, share, and disseminate information, knowledge, and best practices in order to increase the use of data and advance the field of health monitoring and evaluation in many countries. In Kenya the project has provided technical assistance in strengthening data collection and use through Child Status Index assessment tool, review and development of models for improving facility and community referral systems, and development of Routine Data Quality Assessment Tool.

Specifically, MEASUIRE Evaluation II–III has engaged in the following technical assistance areas:

- Support to DLTLD and DRH in development of M&E framework
- Development and piloting of Child Status Index, an assessment tool for use OVC program

- Review of facility–community referral systems and development of monitoring system for facility-community referral system
- Vital Events Surveillance–SAVVY
- Annual/Biennial Monitoring of Outcomes
- Mapping and spatial data work for OVC program

4. Health Systems 20/20

Health Systems 20/20, a five-year (2006–2011) cooperative agreement, funded by the U.S. Agency for International Development (USAID), offers USAID supported countries help in solving problems in health governance, finance, operations, and capacity building. By working on these dimensions of strengthening health systems, the project will help people in developing countries gain access to and1use priority population, health, and nutrition (PHN) services. Health Systems 20/20 integrates health financing with governance, and operations initiatives. This integrated approach focuses on building capacity for long-term sustainability of system strengthening efforts. The project acts through global leadership, technical assistance, brokering and grant making, research, professional networking, and information dissemination

Specifically, Health Systems 20/20 has engaged in the following technical assistance areas:

- Support the Kenya 2006 NHA Activity and the Household Health care Utilization and Expenditure Study
- Technical support to NASCOP to develop and implement an electronic medical records system (EMRS)
- Technical support to NASCOP and HMIS division in the harmonization of PEPFAR II's Next Generation Indicators (NGI) in the national HIV/AIDS M&E Framework

Some of the high level expected results from the multiple USAID's technical assistance to the Government of Kenya (GOK) include:

- Effective National HMIS that provides timely and reliable program and health sector-wide data for decision-making
- Improved capacity of GOK/institutions for using data for program management, policy-making, and quality improvement
- Improved national and sub-national systems and structures for quality program and health commodities data capture and reporting at all levels
- Strengthened and well-coordinated national TWG and program-level TWG for that support a unified M&E system for the country
- Strengthened process and outcome evaluations of priority health sector programs
- Coordinated national and sub-national systems for ensuring data quality across health sector programs including data on health commodities
- Increased capacity of GOK's national and sub-national institutions to collect, analyze and disseminate key national health statistics

VII.   SCOPE OF WORK

The assessment will focus on two objectives:

1. A retrospective assessment on the impact of Mission's technical support through the current mechanisms and

2. A prospective assessment of future technical assistance needs.

For the retrospective component, the assessment team will assess the scope of work of the current existing mechanisms and the progress made so far in strengthening the national monitoring and evaluation (M&E) and health management information system (HMIS). The team will also focus on priority technical assistance needs for the host country's national M&E and its decentralized structures and the national HMIS and its decentralized structures for both facility and community based programs, in order to inform future technical, management and organizational development directions. The team will consider linkages to other related U.S. Government national level programs as well as other national M&E/HMIS initiatives by the other development partners (DANIDA, DFID, WB, WHO).

For the prospective component, the assessment team will consider future needs to implement intermediate result 2.1 of USAID/Kenya's new Implementation Plan for the Health Sector, "Greater use of strategic information for program management, policy-making and decision-making." Informed by the Implementation Framework, the team will detail future technical assistance areas based on expressed needs of the host country institutions. Details of priority technical assistance will include TA needs for all the critical divisions within the health sector that contributes to the collection, reporting and use of data critical for the measurement and management of results to support the new implementation framework. As much as possible duplication of TA will be minimized especially in areas where support is expected from other donors during the implementation framework period.

The external team will address three areas (approximate distribution of level of effort, LOE, for the team is indicated in parentheses):

Technical Results and Host Government Satisfaction (25%):
- Progress toward achieving USAID/Kenya's mandated objectives as reflected in the new implementation framework.

Implementation and Management (25%):
- To what extent has the current support focusing on the M&E/HMIS technical and organizational development are appropriate to achieve USAID/Kenya objectives?
- How coordination and collaboration of the existing mechanism at national and regional levels have helped/hindered the achievement of USAID/K's objectives.

Future Directions for USAID/Kenya health sector support (50%):
- Guided by the USAID/Kenya's Implementation Framework for the Health Sector, identify current and emerging technical and organizational development needs in monitoring and evaluation and health management information system.
- Identify expected technical and organizational development supports for the decentralized M&E and HMIS systems and structures in line with USAID/Kenya implementation framework.
- Provide succinct recommendations that can be feasibly incorporated in the design, management and implementation of 1) M&E and 2) HMIS follow on projects.
- Develop program descriptions 1) Health sector M&E follow on program and 2) HMIS follow on program.

Key questions to be addressed by the external team are listed below. The following list is not meant to be comprehensive, but serves as a guide for interview questionnaires and other data gathering tools in the evaluation.

Technical Results and Client Satisfaction

1. What technical and organizational development support has the Ministries of Health programs (NASCOP, NACC, Division of Health Information System, Division of Reproductive Health, Division of Child and Adolescent Health, DoMC, Division of Nutrition, Division of Vaccines and Immunization, Division of Lung, TB and Leprosy Diseases) received? Which other ministries if any, have benefited from the USAID support in program level M&E/HMIS?

2. What technical and organizational development support has the Ministry of Planning, National Development and Vision 2030 programs (KNBS, NCAPD) received? What level of USAID funding has been allocated and expended on the organizational development of these programs aimed at strengthening M&E/HMIS functions?

3. What has been the overall impact of USAID/Kenya's assistance on the national M&E/HMIS and the decentralized systems/structures, especially the programs described under (a/b)? To what extent can improvements if any, in national and decentralized M&E/HMIS management, coordination and overall functionality be attributed to USAID/Kenya's support?

4. How effectively has USAID/Kenya mechanisms:

    – strengthened and institutionalized local capacities for M&E/HMIS management (country ownership, GOK stakeholder involvement and managing for results)?

    – strengthened and institutionalized local capacities for national and regional coordination structures for reliable and timely reporting at all levels, increased use of data for decision-making including planning and resources allocation, and use of data for quality improvement in service delivery

    – strengthened capacity of local institutions to collect, analyze and disseminate key national health statistics through population and health facility surveys. How effective has regional dissemination of national survey findings been?

    – strengthened functions and operations of Community Based Program Activity Reporting System. What other organizational development interventions should support to NACC focus on that would strengthen national and regional COBPAR structures for reliable and timely reporting of community data?

5. Overall, at the country level, has USAID/Kenya support been responsive to Kenya's technical and organizational M&E/HMIS health sector needs? Do the current USAID/Kenya mechanisms supporting HMIS work have the appropriate skills mix to respond to thee needs of Division of Health Information System? In what areas can the current mechanisms improve its response/skills mix to adequately meet the objectives USAID/Kenya's implementation framework?

6. To what extent are the current USAID/Kenya mechanisms recognized as technical resources for the national M&E/HMIS systems in Kenya?

Implementation and Management of M&E/HMIS Activities

1. Is the current mix of USAID/Kenya supported activities—technical assistance, HR capacity building, IT infrastructure support, M&E/HMIS systems development, organizational development, etc.—adequate to achieve objectives of the new implementation framework? Are there other types of assistance that should be undertaken?

2. To what extent is USAID/Kenya support in M&E/HMIS aligned with the host country priorities? To what extent do the host country institutions and other development partners view USAID/Kenya support as critical and reliable partner for strengthening national and decentralized structures of M&E/HMIS in the country?

3. What technical, managerial, coordination and contractual support have the current mechanisms received from USAID Kenya? Have these been adequate? To what extent has the Mission's management and technical oversight of APHIA II Evaluation, MEASURE DHS III, MEASURE Evaluation and Health Systems 20/20—been beneficial or constraining to their work? Are there ways to make the USAID/Kenya—current mechanisms interface more efficient and effective?

4. Do the information products that the current mechanisms produce meet the requirements of USAID/Kenya/host country institutions? What areas require improvement? To what extent are these information products disseminated for wider use by program managers, and policymakers? How well should the projects disseminate these products for wider reach and increased use for improving program implementation?

Future Directions

1. What do key informants and other health sector development partners see as priority areas for:

   – HMIS (data management systems, data use and Geographic Information Systems),

   – M&E (routine program monitoring for facility and community, data quality assessments for routine program monitoring systems, data use for evidence-based program planning and improvement, HR capacity in M&E, data systems harmonization, integration and sustainability, mortality data and surveillance, and surveys) that USAID/Kenya should consider supporting in Kenya in the next five years? Do these priority areas align well with the new USAID/Kenya Implementation Framework for the Health Sector?

2. What strategic approaches should USAID/Kenya undertake in order to achieve the "greater use of strategic information for program management, policy-making and decision-making" intermediate result in the new Implementation Framework for the Health Sector? How should USAID/Kenya support be designed to ensure that this intermediate result is achieved at national, regional, facility and community levels in a well-coordinated way? What are other donors planning to support in national/regional M&E/HMIS and how should USAID coordinate and align with them to reduce duplication?

3. What are the key high impact M&E/HMIS functions that USAID/Kenya should undertake jointly with the host country institutions to strengthen health systems in the new Implementation Framework for the Health Sector?

4. What are some of the cost-effective and efficient strategies that USAID/Kenya should use that would ensure country-led and country-owned support to national M&E/HMIS? To what extent can supported M&E/HMIS functions be transferred to host country institutions? How should the transition plan be structured to ensure that both benefits and risks are well managed?

5. In your considered opinion having reviewed SOWs, existing M&E/HMIS technical and organizational gaps, and determined the future directions, what would be the best management and implementation mechanism for the follow on projects?

VIII. METHODOLOGY

The assessment team will jointly plan their program and schedules; finalize data collection tools; conduct interviews, meetings, and field visits to collect information; analyze data; and present findings, develop succinct recommendations on strategic areas of focus on 1) M&E and 2) HMIS and finally develop project descriptions on 1) M&E and 2) HMIS new national projects. Additional activities may be proposed by the Mission but would need to be jointly agreed upon with GH Tech prior to agreement on the cost estimate (and Technical Directive Memo concurrence) so that appropriate adjustments are made to consultants' level of effort and other necessary costs prior to the start of the assignment work.

A five-person team, consisting of three consultants (a team leader, an HMIS expert and an M&E expert) and two USAID headquarters staff, will conduct the assessment. Activity Manager for this assessment will be Washington Omwomo, who will be the main USAID point of contact for the team and will offer both technical and general direction. The assessment team will use a variety of methods for collecting, analyzing, and synthesizing data and information.

1. Two weeks in advance of the start of the assessment exercise on the ground, the Activity Manager will share pertinent <u>documents, reports and other materials with the evaluators for their individual review</u>. These will include, but are not necessarily limited to:

    National Documents:

    – Health Sector: Strategic Plan for Health Management Information System. 2009–2013

    – National HIV and AIDS M&E and Research Framework. 2009/2010–2012/2013

    – National Integrated Monitoring and Evaluation System plan

    – Division of Reproductive Health M&E Framework. February 2007

    – DLTLD M&E Framework. 2008

    – DoMC, M&E Plan. 2009–2017.

    – Division of Nutrition, M&E Plan

    – Division of Vaccines and Immunization, M&E plan

    – Kenya National AIDS Strategic Plan (KNASP),

    – National Health Sector Strategic Plan II (NHSSP),

    – Demographic Surveillance Systems Reports (Kilifi, Kisumu, Kibera, Nairobi Urban and Rusinga)

    – KEMSA, M&E plan

    Internal Documents:

    – USAID/Kenya New Implementation framework

    – Global Health Initiative Documents

    – Workplans and SOW for current mechanisms

    – Quarterly Progress Reports for the current mechanisms

The assessment team will hold an initial planning meeting(s) -a two-day <u>Team Planning Meeting (TPM)</u> - upon the start of the assessment exercise on the ground. As part of this meeting, the

team will meet with the OPH management team and Activity Manager in order to review the purpose and scope of the evaluation, and finalize the assessment questions, methods, deliverables, and time line. The outcome of the team-planning meeting will be a detailed workplan for the assessment and development of project descriptions on M&E and HMIS.

1. It is anticipated that the assessment team leader will facilitate and conduct a two-day team-planning meeting at the beginning of the assessment process in Kenya, and before starting the 1st phase of regional field visits and meetings. USAID/Kenya Activity Manager may participate in selected activities of the two-day team-planning meeting. The agenda may include the following items:

   – Clarify team members' roles and responsibilities;

   – Establish a team atmosphere, share individual working styles, and agree on procedures for resolving differences of opinion;

   – Finalize a the assessment _workplan_;

   – Review and develop _final assessment questions_;

   – Review and finalize the _assignment time line_ and share with USAID;

   – Finalize _data collection plans and tools_;

   – Review and clarify any logistical and administrative procedures for the assignment;

   – Develop a _preliminary draft outline_ of the team's report; and

   – Assign drafting responsibilities for the final report.

USAID/Kenya will review and approve the documents noted above before further work on the assessment.

1. In addition to formal briefing and debriefing meetings, there will be scheduled "check-in" meetings between the assessment team and the activity manager, Washington Omwomo. The assessment team will provide updates on their progress and, as necessary, obtain additional guidance, data and information. The assessment team may also contact the activity manager as necessary, outside of scheduled meetings.

2. The assessment team will conduct qualitative, in-depth interviews with key stakeholders and partners. Wherever possible, the assessment team should conduct in-person interviews with key informants. When it is not possible to meet face-to-face with stakeholders, telephone interviews should be conducted. Office of Population and Health in the USAID Kenya Mission will assist in arranging interviews. The assessment team will develop appropriate assessment methods and tools, tailored for different stakeholders. The methods and tools, and list of stakeholders to be interviewed, will be finalized in consultation with OPH and SPS, prior to the start of the assessment. Key informants will include, but not be limited, to:

   – USAID/Kenya staff

   – Other U.S. Government/Kenya agency–CDC, DOD

   – USAID/Washington staff

   – APHIA II Evaluation staff

   – MEASURE Evaluation, DHS III staff (telcon preferred)

- – Representatives of APHIA II projects

- – Representatives of development partners in health

- – Ministry of Planning, National Development and Vision 2030–National Integrated M&E System directorate

- – Representatives from key Government of Kenya Institutions (e.g., NASCOP, NACC, DRH, DOMC, DCAH, NLTLD, DON, DVI, Division of Health Information System, etc.)

- – Demographic Surveillance Systems (Kisumu, Kilifi, Kibera, Nairobi Urban, and Rusinga)

- – Children's Department

3. The team will also conduct <u>site visits and meetings at provincial and district levels</u> to assess the current state of HMIS and M&E, existing gaps and document host country priorities at the decentralized levels. While the actual schedule will be finalized during the team planning meeting, it is anticipated that the team will visit the following locations (3 provinces in total):

- – Nyanza/Western provinces

- – Central/Eastern provinces

- – Coast/Nairobi provinces

Work Organization

The contractor-procured consultants will start work on country situational analysis prior to the arrival of two USAID/Washington staff. This will involve a team planning meeting, initial briefing with USAID/Kenya, development of the workplan and methodology, and site visits and meetings at provincial and district level to assess the current state of HMIS and M&E. The site visits will focus on assessing existing gaps and documenting host country priorities at the decentralized levels. Upon arrival in country of the USAID/Washington team, the contractor-procured consultants will hold briefing meetings for USAID/Washington staff and the OPH team. Following these meetings, the assessment team will hold national level meetings and key informant discussions with various stakeholders. Once the national level meetings have been completed, the assessment team will meet and discuss the information collected to date, hold a briefing with the OPH team to present key findings and the recommendations for M&E/HMIS PD development, and begin analysis and drafting of the assessment report. The draft report will include a 2–3 page of key strategic direction issues that will inform the development of program description(s). The team will then make revisions to the draft report based upon feedback from the debriefing with the Mission and national M&E/HMIS stakeholders and begin drafting the program descriptions. Once the team finishes drafting the PDs, they will present them to USAID/Kenya at a final debriefing before departing Kenya. The USAID/Washington staff will be in Kenya for two weeks but will continue to contribute to the development of the two PDs through email/telcon communications until the two PDs are delivered to USAID/Kenya Activity Manager.

IX.   TEAM COMPOSITION, SKILLS, AND LEVEL OF EFFORT

The team will consist of 5 team members: team leader, two local consultants, and two USAID/Washington team members. The necessary skills, qualifications, and anticipated roles for these team members are as follows:

Team Leader: The Team Leader (TL) will be responsible for overseeing the team and ultimately responsible for the submission of the final draft deliverables to the Mission. S/he will provide

team leadership and plan and coordinate meetings. S/he will lead the preparation and presentation of the deliverables to USAID/Kenya. Ideally, the TL will have a broad monitoring and evaluation background including experience with health systems—monitoring and evaluation systems, health information systems, organizational development and writing program descriptions. Estimated LOE—50 days

M&E Expert: M&E expert strongly grounded in national health sector M&E and sub-national systems, some background on development of national M&E guidelines, systems development, and organizational development skills. Estimated LOE—45 days

HMIS Expert: HMIS expert strongly grounded in functions of host country public health sector HMIS at national, sub-national and at service delivery points. Estimated LOE—48 days

USAID/Washington Team Member: Stephen J. Settimi, Sr Advisor, Health Information Systems. His role will be bring in his global expertise and perspective in support host country governments build sustainable health information systems

USAID/Washington Team Member: Senior Advisor, M&E to provide global expertise and perspective in host country national and decentralized health sector M&E system.

A six-day workweek will be authorized for the assessment and PD development work when the team is working in country. The Team Leader will coordinate preparation of the final schedule of meetings and field trips. The Team leader will ensure that the schedule, as agreed with USAID and assessment team is adhered to.

The assessment and program description design will take place over approximately 8 weeks beginning mid to end July and will include (illustrative):

ACTIVITIES	DURATION
Desk review of materials	4 days
Travel to Nairobi	3 days
Team Planning Meetings in Nairobi (2 days for initial TPM, 1 day for second TPM when USAID/Washington staff join)	3 days
Phase I Regional Field Visits & Meetings	6 days
Phase II Nairobi Meetings	4 days
Team meetings, discussions, information gap fillings—analysis and writing	4 days
Presentation of assessment findings, recommendations on future directions to Mission	1 day
Revision of draft report based on feedback from debriefing; Consolidation of key strategic future direction thematic areas into 2–3 page "Key Strategic Future Direction Thematic Areas Report."	2 days
Program Description Development (PDs)—writing, discussion w/Mission and revisions (4 days per PD)	8 days

Submission of 1st draft PD(s) to USAID
  –debriefing w/Mission
  –debriefing national stakeholders ½ day meeting
	2 days

Program Description(s) revisions (second draft), based on Mission and national stakeholders' comments	3 days
Submission of 1) "final draft PD(s) version" to the Mission 2) draft assessment report	4 days

USAID/KENYA: ASSESSMENT OF M&E/HMIS

ACTIVITIES	DURATION
Team departs country	2 days
Mission provides written comments on draft assessment report (10 days)	0 days
Final revision of Consolidated Assessment Report	4 days
Total For Local M&E Expert	45
Total For International HMIS Expert	48
Total Level of Effort for TL	50
Total team LOE for assessment + PD development	143 days

A six day work week is approved when consultants are working in country.

X. LOGISTICS

USAID/Kenya will be responsible for all in-country logistical arrangements.

USAID/Kenya will provide electronic copies of key documents and background materials and will assist in finalizing key informant lists with contact information. USAID/Kenya will arrange in-briefing and debriefing and assist in making interview appointments when necessary. USAID participation will be determined at the team-planning meeting in Nairobi. The Team Leader, in collaboration with the assigned USAID representative will be responsible for determining when/where USAID staff may/may not participate.

XI. DELIVERABLES

The assessment team will report to the activity manager while in-country. Pertinent technical staff will provide technical directions during performance of this assignment.

The Deliverables are:

1. Briefings: At a minimum an in briefing and two out briefings (for the PDs and for the assessment findings/recommendations) are required. The assessment team will provide regular in-country briefs to USAID/Kenya on progress and discuss problems and issues as based on the agreed workplan or when deemed necessary. Additional debriefings will be convened as required by either party. The team will make an in-country presentation to USAID on the main findings and succinct recommendations at the end of the in-country reviews and analysis.

2. Workplan: The assessment team will provide a detailed workplan to USAID at the conclusion of the TPM and before commencing phase I field visits. The workplan will outline how the assessment will be undertaken and the methods to be used. It will be approved by USAID before assessment kicks off.

3. Methodology: The methodology for collecting and analyzing the data will be prepared during the TPM and reviewed/approved by USAID before commencing the interviews.

4. Program Description (PDs): The final draft PD(s) that incorporates comments from the Mission and national The final PD(s) will be submitted by the TL after the exit meeting with Mission team. The Program Descriptions will be internal documents and will not require professional editing or formatting. Each PD should be no more than 25 pages.

5. Final Assessment Report: The team will leave a draft of the report with the Mission prior to the Team Leader's departure. The Mission will have 10 business days to review the draft report. The final assessment report will be due at USAID/Kenya within 5 working days after the team receives written comments from USAID/Kenya. The report (not including

attachments) will be no longer than 30 pages with an Executive Summary, Introduction, Methodology, Findings, working technical assistance models that needs to be scaled up, Conclusions and Recommendations in English (not including Appendices).

The document shall be reviewed by the following list of people and organizations. The comments by COTRs/AOTRs and Directors should focus primarily on the accuracy and validity of the findings in the draft report and are to be shared with and considered by the evaluation team before they complete their work.

– USAID/Washington COTRs/AOTRs for Measure/Evaluation, DHS and HS 20/20 Projects

Upon final approval of the content by USAID/Kenya, GH Tech will have the report edited and formatted. This process takes approximately 3–4 weeks. The final report will be submitted electronically. Four hard copies of the report will be provided to USAID/Kenya. The final assessment report with be an external document for publication on the GH Tech website and Development Experience Clearinghouse. Any procurement sensitive content related to possible future project designs will be removed (if such are produced) and submitted to the Mission as a separate document for internal use only.

XII.   RELATIONSHIPS AND RESPONSIBILITIES

Client Roles and Responsibilities

Before In-Country Work

1. Consultant Conflict of Interest. To avoid conflicts of interest or the appearance of a COI, review previous employers listed on the CV's for proposed consultants and provide additional information regarding potential COI with the project contractors or NGOs evaluated/assessed and information regarding their affiliates.

2. Documents. Identify and prioritize background materials for the consultants and provide them, preferably in electronic form.

3. Local Consultants. Assist with identification of potential local consultants and provide contact information.

4. Site Visit Preparations. Provide a list of site visit locations, key contacts, and suggested length of visit for use in planning in-country travel and accurate estimation of country travel line items costs. Missions can protect scarce budgets by using their in-country knowledge to suggest the travel calendar (i.e. number of in-country travel days required to reach each destination, and number of days allocated to interviews at each site).

5. Lodgings and Travel. Provide guidance on recommended secure hotels and methods of in-country travel (i.e., car rental companies and other means of transportation) and identify a person to assist with logistics (i.e., visa letters of invitation etc.)

6. USAID-Supplied Participants. Provide guidance regarding participation in the assignment by Mission and USAID/Washington staff (i.e., who will participate, how long, source of funding for their participation).

7. Locally-Established Ceilings and Rates. Provide information as early as possible on ceilings for pay to in-country hires, allowable lodging and per diem rates for Government officials, stakeholders and MoH staff that will travel/participate in activities with the team (i.e. what is per diem amount? is TL responsible to pay this? length of time? etc.).

During In-Country Work

1. <u>Mission Point of Contact</u>. Throughout the in-country work, ensure constant availability of the Mission Point of Contact person(s) and provide technical leadership and direction for the team's work.

2. <u>Meeting Space</u>. The Mission will be responsible for team's selection of a meeting space for interviews and/or focus group discussions (i.e. USAID space if available, or other known office/hotel meeting space).

3. <u>Meeting Arrangements</u>. While local consultants typically will arrange meetings for contacts outside the Mission, support local consultant(s) in coordinating meetings with stakeholders.

4. <u>Formal and Official Meetings</u>. The Mission will arrange key appointments with national and local government officials and accompany the team on these introductory interviews (especially important in high-level meetings).

5. <u>Other Meetings</u>. If appropriate, the Mission will assist in identifying and helping to set up meetings with local professionals relevant to the assignment.

6. <u>Facilitate Contacts with Partners</u>. Introduce the team to project partners, local government officials and other stakeholders, and where applicable and appropriate, prepare and send out an introduction letter for team's arrival and/or anticipated meetings.

After In-Country Work

1. <u>Timely Reviews</u>. Provide timely review of draft/final reports and approval of the deliverables

XIII.   MISSION CONTACT PEOPLE/PERSON

1. Washington Omwomo
   Tel: + 254 20 862 2212
   Email: womwomo@usaid.gov

   Washington Omwomo will be the primary point of contact for this project. He will represent the Mission in approving the scope of work, budget documents, report drafts, consultant staff selections, among other items.

2. Lize Ojow
   Tel: + 254 20 862 2369
   Email: lojowi@usaid.gov

3. Bedan Gichanga
   Tel: + 254 20 862 2817
   Email: bgichanga@usaid.gov

4. Lynn Adrian
   Director-Office of Population & Health
   Tel: + 254 20 862 2000
   Email: ladrian@usaid.gov

XIV.   COST ESTIMATE—TBD

XV.   REFERENCES (BACKGROUND DOCUMENTS)

National Documents

- Health Sector: Strategic Plan for Health Management Information System. 2009–2013

- National HIV and AIDS M&E and Research Framework. 2009/2010–2012/2013
- National Integrated Monitoring and Evaluation System Plan
- Division of Reproductive Health M&E Framework. February 2007
- DLTLD M&E Framework. 2008
- DoMC, M&E Plan. 2009–2017.
- Division of Nutrition, M&E Plan
- Division of Vaccines and Immunization, M&E plan
- Kenya National AIDS Strategic Plan (KNASP),
- National Health Sector Strategic Plan II (NHSSP),
- Demographic Surveillance Systems reports (Kilifi, Nairobi Urban, Kibera, KEMRI/Kisumu and Rusinga DSS site reports)

Internal Documents

- USAID/Kenya New Implementation framework
- Global Health Initiative Reports
- Workplans and SOW for current mechanisms
- Quarterly Progress Reports for the current mechanisms

ANNEX B. LIST OF PEOPLE MET AND/OR INTERVIEWED

AFRICAN POPULATION AND HEALTH RESEARCH CENTER
Samuel Oti

APHIA II
Ambrose Misore	APHIA II Western
Margaret Waithaka	APHIA II Western
Charles Sigei	APHIA II Central
Maryinez Lyons	APHIA II Nairobi
Christopher Komen	APHIA II Central
Marystella Barasa	APHIA II Coast
Ruth Odiambo	APHIA II Rift Valley
Kenneth Chebet	APHIA II Eastern
John Kere	APHIA II North Eastern
Peter Mwarogo	APHIA II Coast/Rift Valley
Michael Ochieng	APHIA II Nyanza
Linda Muyumbu	APHIA II Rift Valley
Feddis Mumba	APHIA II Nyanza
Melinda Pavin	APHIA II Nyanza
Eugene King'ori	APHIA II Western
Michael Maithya	APHIA II Western
Michael Audo	APHIA II Western
Moses Lukhando	APHIA II Western
Daniel Karenga	APHIA II M&E

AMREF
Vitalis Akora	M&E Technical Officer

CENTERS FOR DISEASE CONTROL
Dr Frank O. Odhiambo	Branch Chief, Health and Demographic Surveillance
Nancy Knight	
Tom Oluoch	

DANIDA
Rhodah Njuguna

DEPARTMENT OF PHARMACY
Dr. Elizabeth Ogaja	Director

GTZ/GERMAN TECHNICAL COOPERATION

Dr. Klaus Hornetz — Programme Leader

HEALTH INFORMATION SYSTEMS DIVISION

Dr. Charles Nzioka — Head, Health Information Services

Pepela Wanjala — Senior Health Records Information Officer

Dr. Martha Muthami — ADMS

Jeremiah M. Mumo

Dr. Ayub Manya

Dr. Martin Osumba

Paul Krystall — Consultant

HS 20/20

Paul Chishimtoa — M&E Specialist

Saade Abdallah — M&E Advisor

ICF/MACRO

Svetlana Negroustoneva — Senior Associate

Edward Kunyanga — Chief of Party

ITECH

Jan Flowers — Technical Program Manager

Steven Wanyee — Technical Advisor

JHPIEGO

Walter P. Mukhwana — M&E Advisor

JOHN SNOW, INC.

Chet Chaulagai — Health Information System Advisor

MANAGEMENT SCIENCES FOR HEALTH/SPS

Cecelia Muiva — Senior Program Advisor

Josephine Kanuri — Program Associate

MBAGATHI DISTRICT HOSPITAL

Dr. Andrew Suleh — Medical Superintendent

Dr. Josephine — Comprehensive Care Clinic in charge

Ms. Damaris Kinara — Health Records & Information Officer

Dr. Sarah Gathu — Pharmacist

Mr. Joseph Ng'ang'a — Health Records & Information Officer

Ms. Joy Watima — Nursing Officer

Ms. Beatrice Ntogira — Nurse Counselor

Dr. Angela Kerubo   Pharmacist

Mr. Kennedy Echesa   IT Manager

MINISTRY OF MEDICAL SERVICES

Micah K. Kisoo   Chief Clinical Officer

Dr. B. M. Osumba   Health Information Service

Nusa Mwamniz APILT

Bill Martin Osumba   HIS

MINISTRY OF PUBLIC HEALTH AND SANITATION

D. M. Waititu   Program Manager, RHP II

Dr. Were Samuel

Dr. Elizabeth Juma   Program Manager, DoMC

Zipporah Momanyi   Ag-CHAO

James Njiru   H/ICT

Dr. Sharif   Director, Medical Services

Dr. P.S. Migiro

B.M. Wambu

Terrie Wefwafnd

Diane Kamas

Peter Ademba   Data Manager, Div. of Vaccines, Dept. of FH

MONITORING AND EVALUATION DIRECTORATE (NIMES)

James Mwanzia   Chief Economist

Welime Mabuto   Economist

Viviene Simwa   Senior Public Information & Communications

Baridi Manyasi   M&E Specialist

Samson M. Machuka   Director of Planning

NAIROBI PROVINCE

Susan Ndirangu   District Health Records Information Officer (DHRIO)

Samuel Waweru   DHRIO

Musembi Wycliffe   DHRIO

Milka Kubai   DHRIO

Tecla J. Koho   HRIO

Ibrahim K. Chirchir   DHRIO

Gaudenzia Wesonga   DHRIO

Alice Kimani   DHRIO

Albert Gitau   DHRIO

| Joyce Onyango | Provincial HRIO |

NASCOP
| Naomi Shinyanga | M&E Officer |

NATIONAL AIDS COORDINATION COMMITTEE
Patrick Muriithi

Christopher Msando

John Kieti

NYAHERA SUBDISTRICT HOSPITAL
| John Mangare | Records Clerk |
| Esther Nyamusi | Facility In-Charge |

UNICEF
Susan Kiragu

Chet Chaulagai

Eunice Ndung'u

Ruth Situma

UNIVERSITY OF NAIROBI
| Ben Jarabi | Population Studies & Research Institute |
| Murungaru Kimani | Population Studies & Research Institute |

USAID/KENYA
Alex Kinoti	HIV
Bedan Gichanga	Health Management Systems Specialist
Daniel G. Wacira	Presidential Malaria Initiative
John Wasonga	HIV/AIDS Treatment
Kate Vorley	HIV
Lynn Adrian	Director, Office of Population and Health (OPH)
Mark Meassick	Program Officer
Maurice Maina	HIV
Ruth Tiampati	HIV
Sheila N. Macharia	Senior Health Manager
Stanley Bii	HIV
Washington Omwomo	Information Technology
Steve Ndele	Program Office
Emma Mwamburi	

Walter Mukhwana   MCHIP

Karen Klimowski   Deputy Director, OPH

WESTERN DISTRICT

Vincent Kiptoo   DHRIO

Stella Alusiola   PHRIO

Richard Wanyonyi   DHRIO

James Kuya   DHRIO

Andeka Otuthia   D/DHRIO

Innocent Onno Kaalar   DHRIO

Milcah Adhuti   DHRIO

Helen Kololi   DHRIO

WORLD BANK

Michael Mills   Lead Economist

WORLD HEALTH ORGANIZATION

Humphrey Karamagi   Health Economist and Systems Advisor

USAID/KENYA: ASSESSMENT OF M&E/HMIS

ANNEX C. REFERENCES

AIDS, Population, and Health Integrated Assistance, Phase II (APHIA II) Monitoring and Evaluation. *Assessment of USAID/Kenya's Health Portfolio (APHIA II): Monitoring and Evaluation Assessment Report.* November 2009.

Campbell, B., S. Adjei, and A. Heywood. *From Data to Decision Making in Health: The Evolution of a Health Management Information System.* Amsterdam: Royal Tropical Institute, 1996.

"Global Fund Round 10 Proposal Form." (Undated) Global Fund to Fight AIDS, Tuberculosis and Malaria, Sixth Board Meeting. "Monitoring and Evaluation Strategy." October 2003.

Global Health Initiative. Consultation Document. July 30, 2010.

Gorgens, Marelize, and Jody Kusek. *Making Monitoring and Evaluation System Work: A Capacity Development Toolkit.* Washington, DC: The World Bank, 2009.

Government of Kenya. Community Health Workers Monthly Summary. (Reporting form). Government of Kenya. *HIV and AIDS Monitoring and Evaluation Report, Quarters 1 and 2.* 2007.

Government of Kenya. *National Reporting Framework of Indicators: The Vision 2030 First Medium-Term Plan. 2009.*

Health Systems 20/20 Project. *Health Systems 2020 Workplan FY 2008 NHA and Electronic Medical Records.* 2008.

Health Systems 20/20 Project. "Kenya Health System Assessment 2010." 2010. (Draft)

Kenya Health Sector. "Draft Health Management Information Systems Policy." (Undated)

Kenya Health Sector. *Strategic Plan for Health Management Information System 2009–2014.* 2010.

Kenya Ministry of Health. *Annual Health Sector Status Report 2005–2007. 2007 Kenya Ministry of Health. Health Sector Indicator and Standard Operating Procedures Manual for Health Workers. May 2008.*

Kenya Ministry of Health. *Kenya's Health Policy Framework. November* 1994.

Kenya Ministry of Health. MoH 257–Comprehensive Care Clinic Patient Card. (Reporting form)

Kenya Ministry of Health. *Report of the Assessment of the Health Information System of Kenya.* July 2010.

Kenya Ministry of Health. *Review of Software in the Health Sector, Final Report.* March 2009.

Kenya Ministry of Health, Division of Reproductive Health. *National Reproductive Health Monitoring and Evaluation Plan.* February 2007.

Kenya Ministry of Medical Services and Ministry of Public Health and Sanitation. *Standards and Guidelines for Electronic Medical Record Systems in Kenya.* 2010.

Kenya Ministry of Public Health and Sanitation. *National Monitoring and Evaluation Plan for Division of Leprosy, Tuberculosis and Other Lung Diseases.* 2008.

Kenya Ministry of Public Health and Sanitation. *National Monitoring and Evaluation Plan for Division of Leprosy, Tuberculosis and Other Lung Diseases.* 2007.

Kenya Ministry of Public Health and Sanitation and Ministry of Medical Services. *Health Sector Health Information Policy 2010–2030.* 2010.

Kenya Ministry of Public Health and Sanitation and Ministry of Medical Services. *Reversing the Trends: The Second National Health Sector Strategic Plan of Kenya—Annual Operational Plan 6, July 2010–June 2011.* July 2010.

Kenya Ministry of Public Health and Sanitation, Division of Malaria Control. *Kenya Malaria Monitoring and Evaluation Plan, 2009–2017.* June 2009.

Kenya Ministry of Public Health and Sanitation, National AIDS/STI Control Program. "Report on NASCOP's Monitoring and Evaluation (M&E) Meeting Held at the Panafric Hotel." June 2010.

Kenya Ministry of State for Planning, National Development and Vision 2030. *Kenya Vision 2030 First Annual Progress Report on the Implementation of the First Medium Term Plan (2008–2012).* May 2010.

Kenya Ministry of State for Planning, National Development and Vision 2030. *National Reporting Framework of Indicators: The Vision 2030 First Medium Term Plan.* 2009.

Kenya Ministry of State for Planning, National Development and Vision 2030. *Public Expenditure Review: Policy for Prosperity 2010.*

Kenya Sector-Wide Approach Code of Contact. 2007.

Kyobutungi, Catherine, Abdhalah Kasiira Ziraba, Alex Ezeh, and Yazoume Ye. "The Burden of Disease Profile of Residents of Nairobi's Slums: *Results from a Demographic Surv*eillance System." *Population Health Metrics* 6:1, 2008.

Malonza, Isaac. *Access UZIMA Year One Workplan.* 2009

Mbagathi District Hospital (Nairobi). *Guidelines for System Software and Other Requirements Quotation to be Installed at Mbagathi District Hospital.* April 2010.

National AIDS Control Council. *Annual HIV and AIDS Monitoring and Evaluation Report 2008.* November 2009.

National AIDS Control Council. *Kenya HIV and AIDS Monitoring and Evaluation Annual Report 2006.* (Undated)

National AIDS Control Council. *National HIV and AIDS Monitoring, Evaluation and Research Framework (2009–2012).* October 2009.

National AIDS Control Council. Quarterly Program Report Form for NGOs/CBOs/FBOs. (Reporting form)

National AIDS Control Council. Quarterly Program Report Form, version 2.1. (Undated) (Reporting form)

National AIDS/STD Control Program (NASCOP). CCC Patient Card. (Reporting form)

National AIDS/STD Control Program (NASCOP). NASCOP-UNICEF *Joint National and Regional Level Assessment on Monitoring and Evaluation in HIV Prevention, Care and Treatment (October–December 2009).* February 2010.

National Institute for Monitoring and Evaluation Systems. *Rationale for the National Integrated Monitoring and Evaluation System.* (Undated)

Partnership Framework Agreement to Support Implementation of the Kenya National HIV Response as Articulated in the Kenya National AIDS Strategic Plan, 2009–2012. November 2009.

Tan, Joseph K.H. *Health Management Information Systems: Methods and Practical Application* (2nd ed.) Frederick, MD: Aspen Publishers, 2001.

USAID/Kenya. Five-Year Implementation Framework for the Health Sector (2010–2015). January 2010.

USAID/Kenya. *President's Malaria Initiative: Malaria Operational Plan.* 2010.

ANNEX D. DETAILED HIS RECOMMENDATIONS AND ILLUSTRATIVE ACTIVITIES MATRIX

- Component: A smaller, self-contained part of a larger entity (thematic area).

- Thematic Area: One or more components that comprise a larger part; recommendations in four broad thematic areas cover the strengthening of whole HIS.

- Illustrative activities are examples of the types of activities that might require "tendering" from any operations unit.

Thematic Area 1: Management and Coordination				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
Leadership and Advocacy	1. Identify a single national "champion" who can mobilize people at all levels of the health system to implement a strengthened health information system.	Launch dialogue and consultation among the relevant top level management group(s) and carry on the identification process.		Capacity Building
	2. Raise the profile of HMISD by establishing a higher-ranking department within the MoH. Provide sufficient human and financial resources for the department to be able to perform its function, including better coordination of all stakeholders.	Create upper management awareness and buy-in to help raise the profile of HMIS; launch internal review process to identify personnel needs and mechanisms to put them in place.		Capacity Building

Thematic Area 1: Management and Coordination				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
	3. Strengthen the MoH by creating leadership forums that can coordinate a broad front of stakeholders. This will assist achievement of the operational and policy reforms, especially involving Human Resources, which will be needed to implement these recommendations, as well as others that will come to the fore in the future.	Better coordinate and expand active participation of existing technical working groups and other coordinating committees.	-Support and help facilitate meetings for HIS, TWG, and HISCC (IP, TP, LT)	
Policy and Coordination	4. Translate the HIS strategy into a series of actionable and prioritized steps to achieve the necessary objectives.	Develop system-wide workplan per agreed-upon recommendations to strengthen HMIS, including specific short-term targets based on AOP6 that can be achieved and the mechanisms needed to meet them.		
	5. Strengthen existing mechanisms to regularly review policy and strategy at annual intervals to ensure that implementation is on track and remains relevant to the situation on the ground.	Increase capacity of MoH/HMIS to manage effective TWGs and coordinating committees.		
	6. Support the technical working group(s) that will bring all stakeholders to agree on a minimum set of indicators that will meet all program management and reporting needs under the DHIS 2. This working group should be strengthened and institutionalized to ensure that there continues to be coordination between stakeholders on indicator management.	Identify and initiate TWG to Strengthen and coordinate multi-stakeholder HIS coordinating committee revise comprehensive set of indicators.	-Indicator coverage Consolidation Retreat (IP) -Stakeholders Meeting on indicators set (IP)	2nd Edition Health Sector Indicators and Data Tools

Thematic Area 1: Management and Coordination				
Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
	7. Support the Government process that will ensure that all Government programs and development partners subscribe to the agreed indicator list, and enforce adoption of the list (a) immediately in their vertical reporting programs and (b) define an appropriate timeframe to merge all parallel data systems into a unified HMIS. Provide support to Government and Partners to facilitate and manage this transition toward a unified HIS.	Through top leadership and strategically consultations, generate support for the adoption and have it mandated.		2nd Edition Health Sector Indicators and Data Tools
	8. Facilitate coordination with other sectors that will support roll-out of the HIS, such as providers of internet infrastructure, E-Government and internet service providers to facilitate access to data management systems and savings on bulk rates on data transfers and access.	Launch a review process for the roll-out and identify relevant sector partners, initiate coordination committee to develop partnership MOUs.		DHIS Software Developed and Rolled Out
	9. Coordinate activities with other ministries, particularly the Ministry of Information and Communications, where services or information is needed to fully implement the program.	Launch review process, identify relevant partners, and initiate coordination committee to develop MOUs.		
	10. Develop and implement M&E frameworks at each level to support activity management.	Launch and facilitate M&E TWGs to develop frameworks.		

Thematic Area 1: Management and Coordination

Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
Resource Management	11. Establish GoK sources for funding technology acquisition, supplies and maintenance.	Identify funding sources and form partnerships for additional funding from future budgets.		Capacity Building
	12. Hire additional staff as quickly as possible to fully staff the HMIS. The HMIS strategic plan estimates that around 5,800 staff will be needed; of which 4,000 will be HRIOs. The HMIS strategic plan projects that around 1,500 additional staff will be hired as a first installment over the next five years. In addition, hire sufficient clinical staff so they can meet both clinical and management responsibilities.	Identify and mobilize support, form partnerships and develop mechanisms to address staffing needs.		Capacity Building

Thematic Area 2: ICT Technical Support and Services				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
Hardware, Software and User services, Infrastructure	13. Using the new indicator set being developed for DHIS 2, create a facility-appropriate (provincial/district/facility) set of recording and reporting tools, and train existing staff and supervisors in their use.	Conduct use-case analysis at all data exchange points beginning with raw data at registry level, through facility unit management, district, provincial, and central program and administrative units; develop data validation and data reconciliation routines.		DQA Strategy Developed
	14. Ensure that the DHIS 2 and all other HIS systems (commodities, financial, personnel, KNBS, Vital Registration, etc.) are open architecture so that they can communicate with each other.	Develop standard operation protocols that define an open architecture data standard and data messaging protocols using web services or other communication protocols; establish a set of uniform unique identifiers similar to MFL for (a) all patients and (b) all health personnel; embed primary keys in databases that allow for cross database inquiries.		
	15. Determine the level of infrastructure (connectivity, electricity, etc.) that will be required for program implementation at each level. Seek solutions (modems, cell phone transmission, appropriate paper transfer) for sites that do not have full connectivity.	Develop grid-to-service level mapping to determine infrastructure resource capability at each facility and plan electronic system roll-out pegged to infrastructure development roll-out; prepare amortization schedules for all equipment installations, maintenance schedules for routine service, and standards of acceptable functionality.		DHIS Software Developed and Rolled Out
	16. Negotiate bulk rates or other reduced tariffs for cell phone/modem air time.	Develop or adopt cooperative agreements with Telco and communications commission to provision through PPP; devise schemes to incentivize the private sector to report data over ICT channels; incentivize public to access public health services using mobile technology using an M-PESA service model.		

Thematic Area 2: ICT Technical Support and Services				
Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
	17. Establish intranets in all facilities that have multiple computers.	Install and configure self-organizing mesh networks 802.11 router technology to cover small facility and surrounding areas accessible to allow public health facilities and the public to access data and information on shared services; develop a pay-as-you-can scheme to generate revenues to support maintenance and systems upgrades.		
	18. Establish a robust technical unit within the HMIS Division that can meet ongoing programming, updating, and support needs.	Provide technical training and customer service training to technical staff who interface with program units; train staff on using modern project management tools.		DHIS Software Developed and Rolled Out
System Implementation and Support	19. Establish lists of equipment and software that will be required at each level, with full specifications.	Inventory services to identify and inventory ICT devices, location (using FML), last service date, and anticipated replacement year.	Procurement of necessary hardware (IP, TP, LT).	DHIS Software Developed and Rolled Out
	20. Fully implement District Health Information System (DHIS 2) using the new indicator set. Note: The new program can be pilot-tested, but should not roll out widely until the indicator set is established.	Establish a careful roll-out plan that takes the level of infrastructure, both technical and human, into consideration. Do not attempt to roll the system out nationwide at the same time. Note: Limited number of districts will have internet connectivity to begin with.		DHIS Software Developed and Rolled Out

			HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	**AOP 6 Indicator**
Thematic Area 2: ICT Technical Support and Services				
Component	**Recommendation**	**Illustrative Activities**		
	21. Establish support networks, including but not limited to help desks, anti-virus program implementation, and rapid equipment repair and replacement.	Contract with an "on-call" technical support unit that can respond to service requests within 24 hrs.	Establishment of local support structure for DHIS (TA, local agency) (TP, LT).	2nd Edition Health Sector Indicators and Data Tools
	22. Fully implement the Master Facility List and unique identifiers for patients and providers.	Convene data recording units that have interests in the three types of indicators to develop a roll-out schedule to include all three indicators at registry level and other patient record systems (EMR), CHW family log books, and mobile health devices.	-TA for linkages of priority databases through the MFL (e.g., Finance, KEMSA, HRIS, ARP etc.) (IP, TP, LT). -Regulatory module to update MFL for new facilities (TP).	Deployment of Master Health Facility List– Web Application
	23. Support and strengthen Electronic Health Records (EHR) so clinicians have feedback on their patients and their work.	Identify and evaluate through peer review the top-performing EMR systems nationwide against a set of minimal functional requirements and data standards; promote extensive use nationwide; offer incentives to network in private sector by offering installs of free and open EMR or upgrades to current systems in exchange for reporting upgrades.		
Databases	24. Ensure that DHIS 2 provides disaggregated facility-level data to central/provincial/county levels.	Develop a rational aggregation methodology that captures the three essential primary keys: patient ID, facility ID, HW ID. Using the use-case analysis (see above), provide algorithms that extract the essential data needed by use at each level and data node.		

Thematic Area 2: ICT Technical Support and Services				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
	25. Establish secure, backed-up data warehouses.	Acquire x number of units of uninterruptible power supplies (UPS) for all facilities with functional ICT; establish protocols for storing on and offsite data; develop archiving tools; develop automation concepts to instill user discipline.		DHIS Software Developed and Rolled Out
Resource Management	26. Establish GoK sources for funding technology.	Provide advocacy and support for the costing and inclusion of ICT (equipment, support, development) in health sector's AOP budget.		
	27. Establish mechanisms to fund internet connectivity, modems, cell phone technology, and air time. Ensure that all districts and facilities have electricity.	Establish mechanisms for funding ICT activities using resources available at the different levels, such as the resources available at community, facility, and district, provincial, and national level.	Ensure internet/FTP connectivity (IP, TP, LT)	DHIS Software Developed and Rolled Out

Thematic Area 3: Systems Capacity Development				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
Data Collection and Quality	28. Establish systems to ensure that registers and reporting forms are updated and continuously available at all communities, facilities, and districts.	Identify and seek support for the printing, distribution, and resupply logistics at provincial, district, facility, and community level.	-Print Edition 2 of Manual (TP, LT). -Prepare pilot data collection tools and print them (IP, TP).	DQA Strategy Developed
	29. Establish and mandate a standard data quality assurance system, including establishing simple error-checking tools, such as comparing tally sheets to registers, having a second person check data entry, and instituting automated E-validation and derivation tools to ensure improved data quality.	-Develop DQA standards through TWG. -Develop data quality control systems, and their revision as the systems change, and the tools for quality control at each level, and the logistics to facilitate implementation of the data quality control. -Conduct baseline and annual audits.	-Launch stakeholders' workshops to prepare DQA standards and strategy (IP, TP). -Complete baseline Data Audits (TP, LT). -Annual Data Audits (national) (TP, LT).	DQA Strategy Developed
	30. Establish mechanisms to fund travel from facility levels to the districts to ensure that reports are delivered on time for onward reporting. (This may be weekly, in the case of surveillance data.)	Identify sources and ensure funding of the travel and logistics needed to ensure timely reports, through government systems, using government funding and support through partner systems.		DQA Strategy Developed
	31. Select indicators so the person collecting them can actively use the information he/she collects in their patient care.	Support the development of sector's M&E and the tools that facilitate the analysis and utilization of data at each level, especially at the point of collection, in aspects such as AOP management, service planning, commodities, among others.		Capacity Building
Human Resource Development	32. Create a training and career pathway for HRIOs, including both diploma and degree programs.	Develop steps to achieve the stated recruitment in the HMIS strategy, including the development of the proposed training and development of career path for HRIOs.		Capacity Building

Thematic Area 3: Systems Capacity Development

Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
Supervision	33. Develop a supervision and support system with sufficient resources that will routinely provide support to each level on all key components of the data system (data collection, data management, etc.) and data utilization.	Support implementation of supervision activities, setting the routine supervision schedules and supporting their implementation through both government funding and partners' support, and helping the inclusion of supervision results into improving data utilization and data quality at each level.		Capacity Building
	34. Conduct regular "supportive supervision" (and provide mentorship) at district, facility, and community levels, provide feedback, leave written record of action points, advices and understandings.	Support and strengthen operation level logistics to facilitate supervision at provincial, district, facility, and community level, and develop operational level standards to guide that support.	Encourage supportive supervision at provincial, district, and facility levels (IP, TP, LT)	Capacity Building

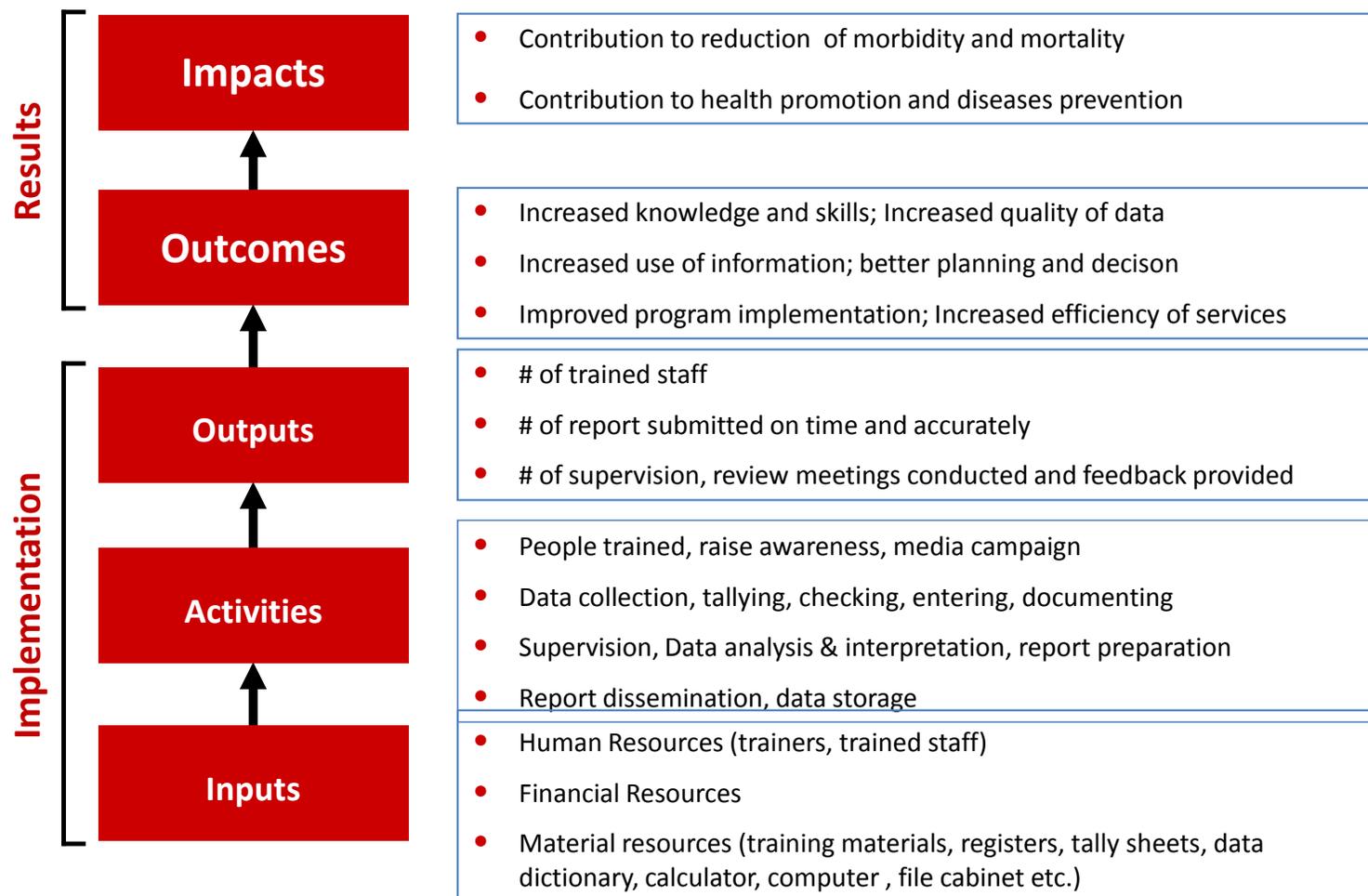| Thematic Area 4: Communication, Learning, and Knowledge-Based Practices				
Component	**Recommendation**	**Illustrative Activities**	**HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)**	**AOP 6 Indicator**
Public Awareness and Dissemination	35. Develop the outreach and media events needed to raise awareness of the importance of information in service provision.	Form partnerships with private sector and civil societies to launch public awareness and outreach programs, including but not limited to community dialogue, academic and radio discussion forums, house visits, and billboard messages for target groups at all levels.		
	36. Support and help strengthen a "public data and information access portal" that is reliable, relevant, and up-to-date. Produce regular reports from various nodes of the system and provide proper communication channels and forums to discuss them.	-Prepare and distribute quarterly print and electronic materials on health information and their usefulness. -Establish and provide free access to web-based "Public Health Information Database" including the MFL. -Partner with telecoms to provide free access to essential health information via mobile phone devices.	Official public launch of MFL website (TP)	
Information Demand, Supply and Use	37. Implement opportunities for strategic dialogue, consultations with key stakeholders at all levels including citizen membership, CUs, donors, DPs, IPs, and media to raise awareness for a culture shift, and strengthen the demand for information at all levels by citizens to key policy and decision makers.	Form public-private partnerships to launch widespread workshops and forums to hold strategic and consultative dialogues with various stakeholders at all levels in order to strengthen information demand.		

Thematic Area 4: Communication, Learning, and Knowledge-Based Practices				
Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
	38. Conduct data/information needs assessments, develop data utilization plans for various stakeholders at all levels to improve overall operation, planning and decision-making, performance management, and accordingly design various analytical tools, information and knowledge management products. This process should include ordinary citizens, community units, managers/ Decision makers at all levels, development partners and the media.	-Conduct information needs assessments at all levels and design various analytical tools, information and knowledge management products accordingly. -Consult and develop data utilization plans for various stakeholders at all levels.		Capacity Building
	39. Develop structured team reviews at each level to clarify and strengthen individual and team commitments to managing with data.	Identify suitable regional partner to plan and launch team workshops at all levels to institute "managing with data," i.e., to use knowledge and information products in doing everyday tasks including decision-making.		
	40. Introduce techniques to conduct evaluations of key projects and programs in order to understand project dynamics and adjust implementation to improve success in achieving stated goals and/or better plan for effectiveness toward health outcomes. Evaluation techniques should be closely linked to actual management decisions that need to be made.	Design and establish evaluation mechanisms (e.g., interim and completion point evaluation) in key project and program design.		

Thematic Area 4: Communication, Learning, and Knowledge-Based Practices				
Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
	41. Launch outreach and workshops at all levels to raise awareness and appreciation of the importance of information products and their use as essential components of doing everyday tasks.	Identify suitable regional partner to plan and launch workshops at all levels to help institutionalize the use of knowledge and information products.		
Human Capacity Development	42. Establish a one-month pre-assignment training program for all clinicians (including physicians) on the management tools they need to do their jobs, including health information, pharmacy management and logistics, etc.	Identify and form partnerships with regional learning organizations to design and implement a one-month pre-assignment training program.		
	43. Establish on-the-job training and periodic retraining for all managerial, clinical, and HRIO staff.	-Seek TA to build internal training modules on various on-the-job training for different levels and personnel. -Form internal core training delivery team.	-Training of Boards and Councils on MFL Regulatory Module (TP) -Training of Districts Health Workers on new DHIS (Province) (IP, TP, LT) -Sensitization of the DHMTs on New Indicators based Tools (IP, TP) -Training of HCW on Indicators (DHMT and Facility Staff) (TP, LT) -Training on HIS Policy and Governance Issues (TP, LT) -M&E Training (TP, LT) -Data Management Training (TP, LT)	
	44. Establish supervision training and refresher training specifically for managing health information systems and their staff.	-Seek TA to build modern and standard supervision and refresher training modules. -Seek regional partners or form internal core training delivery team.		AOP 6

Thematic Area 4: Communication, Learning, and Knowledge-Based Practices				
Component	Recommendation	Illustrative Activities	HMISD Priority Activities to be Supported from AOP 6 (IP-Inception Phase, TP-Transition Phase, LT-Long Term)	AOP 6 Indicator
	45. Establish a variety of forums where people can exchange experience and perspectives and share tools, practices. and concepts for success.	-Develop regional and district level partnerships to establish forums and launch workshops for exchange of ideas. -Facilitate two "learning missions" a year for every HRIO and clinician across geographic and administrative boundaries to facilitate hands-on learning, sharing, and documenting best practices.		
	46. Build and implement formal/informal learning and knowledge components relevant to job responsibilities, provide ways and means to facilitate self-learning, and establish an incentive system for it.	-Identify and form regional partnership to design and launch "Mobile Health Knowledge Express" program to be taken to each facility, especially the ones in remote areas and without internet access. -Devise and implement an incentive system for self-learning.		

Results

Impacts
- Contribution to reduction of morbidity and mortality
- Contribution to health promotion and diseases prevention

Outcomes
- Increased knowledge and skills; Increased quality of data
- Increased use of information; better planning and decison
- Improved program implementation; Increased efficiency of services

Implementation

Outputs
- # of trained staff
- # of report submitted on time and accurately
- # of supervision, review meetings conducted and feedback provided

Activities
- People trained, raise awareness, media campaign
- Data collection, tallying, checking, entering, documenting
- Supervision, Data analysis & interpretation, report preparation
- Report dissemination, data storage

Inputs
- Human Resources (trainers, trained staff)
- Financial Resources
- Material resources (training materials, registers, tally sheets, data dictionary, calculator, computer , file cabinet etc.)

For more information, please visit:
http://www.ghtechproject.com/resources