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AfyaInfo is a technical assistance project to support the Government of Kenya to strengthen their health information systems. The project is implemented by Abt Associates Inc. in partnership with international partners Training Resources Group and ICF International and Year 1 local partner Knowing Ltd. It is funded by the United States Agency for International Development (USAID), under the AIDS Support and Technical Assistance Resources (AIDSTAR) Sector II IQC, contract number GHH-I-00-07-00064-00 AID-623-TO-11-00005, Kenya Health Information System.

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Acronyms

| | |
|-----------|--|
| API | Application program interface |
| APR | Annual Performance Reporting |
| AWP 1 | Annual Work Plan 1 (2012-2013) |
| COBPAR | Community Based Program Activity Report |
| CHIS | Community Health Information System |
| CHAK | Christian Health Association of Kenya |
| DCHS | Division of Community Health Services |
| DHIS2 | District Health Information Software version 2 |
| DivHIS | Division of Health Information Systems |
| DSL | Data services layer |
| GOK | Government of Kenya |
| HIS | Health Information System |
| HMIS | Health Management Information System |
| HRH | Human resources for health |
| HRIS | Human Resources Information System |
| ICT | Information, Communication and Technology |
| KEC | Kenya Episcopal Conference |
| KePMS | The U.S. Government's Kenya Program Monitoring System |
| KMTC | Kenya Medical Training College |
| KHSSP III | Kenya Health Sector Strategic Plan III |
| LKM | Learning and knowledge management |
| M&E | Monitoring and Evaluation |
| MCUL | Master Community Unit List |
| MFL | Master Facility List |
| MOH | Joint reference to the ministries of Medical Services and Public Health and Sanitation |
| NHIS | National Health Information System |
| PEPFAR | The U.S. President's Emergency Plan for AIDS Relief |
| PMP | Performance Monitoring Plan |
| SAPR | Semi-Annual Program Results |
| SRS | Systems requirement specifications |
| STTA | Short term technical assistance |
| TWG | Technical working group |
| USAID | United States Agency for International Development |
| USG | United States Government |

Executive Summary

Strengthening of the health information system via the National Health Management Information System (HMIS) and other Government of Kenya (GOK) and health development partner data collection systems in Kenya has seen an increased level of attention and funding from various development partners over the last several years. The aim of these efforts has been to improve data quality and to strengthen the use of information for decision making. The United States Agency for International Development (USAID) has been a central player contributing to health information systems (HIS) strengthening efforts.

AfyaInfo, a USAID-funded project, supports the GOK to create a unified and integrated internet-based host country owned and managed National Health Information System (NHIS). This unified system will generate quality data to be used at all levels of the health system to support health management and improve health service delivery; it will also serve as the sole source of data for all health sector stakeholders, thus eliminating the need for the existing vertical reporting systems. As such, the project supports the GOK's HIS goals as well as USAID's efforts to improve Kenya's health programs through the use of strategic information.

The AfyaInfo project works in close collaboration with the ministries of health to unify the multiple health data streams in the country and strengthen the Ministry of Public Health and Sanitation's and the Ministry of Medical Service's (jointly referenced as the MOH) ability to manage and support the use of the resulting systems. The project contributes directly to goals outlined by the GOK for health information system strengthening, and the project's annual workplan is a subset of the health ministries' Annual Operational Plan.

In order to maintain this close collaboration and alignment with the GOK, the project functions as a support system to the ministries; interacts with the DivHIS, the Information, Communication and Technology (ICT) Department, and other relevant GOK department and agencies on an almost daily basis to implement technical work; has an entire strategic area (Output 3) dedicated to GOK organizational strengthening; and continues to host workshops, meetings and other events/fora to engage government counterparts in shaping and implementing project activities.

In Year 1 the project worked in collaboration with the MOH to achieve the following key milestones in systems unification:

Systems Development and Deployment

- Identified and created an inventory of relevant electronic information systems for the first rounds of integration into the web based national health information system.
- Developed an MFL application program interface (API) to allow other databases and systems to "pull" data from the MFL into their own structures on a real-time basis.

Infrastructure Development

- Assessed existing HIS infrastructure to inform project procurement against optimal infrastructure requirement.

KePMS Transition

- Developed a KePMS to DHIS2 Transition Strategy that details the process for transitioning the USG reporting requirement currently contained in the KePMS into the NHIS.
- Supported regular PEPFAR reporting obligations to the U.S. Government through KePMS.

Integration of CHIS and COBP

- Developed the system requirements specifications (SRS) document for the Master Community Unit List (MCUL) which provides descriptive information on the county's community units and uniquely codes each of these units to its corresponding health facilities in the MFL.

Stakeholder and Information Needs Mapping

- Mapped stakeholders and their information needs to determine how well current national HIS structures are meeting these needs.
- Developed a stakeholder engagement strategy that will guide stakeholder engagement during the life of the project.
- Supported the revision of the 2nd edition indicator manual and data collection tools to ensure that all the sector indicators were captured.

Capacity Strengthening

- Laid the groundwork for strengthening pre-service education for Health Records and Information Officers by working with Kenya Medical Training College (KMTTC) to revise graduate competencies and assess training needs against these competencies.
- Supported the consolidation and development of an in-service, standardized, competency-based training package for DHIS2 and the MFL.
- Trained 100 national trainers drawn from MOH regional teams, the Kenyan Episcopal Conference (KEC), Center for Health Solutions (CHS) and KMTTC to use the DHIS2 and MFL training package.

Technology and information products

- Revised the DHIS2 data dashboards to enable users to access data and information according to their specific needs.
- Supported the DivHIS to develop an annual health statistics report and a quarterly ebulletin template for the sector.

Support for the development of KHSSP III and development of the M&E framework

- Supported the KHSSP III's M&E working group to develop an M&E chapter outlining the process for monitoring performance of strategic plan implementation.

Refinement and finalization of the Second Edition of the MOH Indicator Manual and associated data collection, summarization and reporting tools and methods

- Provided technical assistance to rationalize the indicators in the MOH's 2nd edition health sector indicator manual into a single set of indicators that could be used to measure the progress of the health system from input to impact.

Definition and implementation of DivHIS internal structural changes

- Gathered the evidence needed to build the capacity of the DivHIS and recommend organizational strengthening changes.

- Supported the development of a detailed DivHIS Organizational Strengthening Action Plan.
- Assisted the DivHIS to adopt a new functional structure—dividing the division into five units, each with a clear mandate, deliverables and staffing.
- Drafted a NHIS Stakeholder Coordination Strategy (NHISSCS) to guide the DivHIS’s engagement with and responsiveness to its stakeholders.

DivHIS Capacity building

- Supported the MOH leadership to formally request additional support for an ICT Advisor and HMIS Advisor from the USAID Capacity project.
- Supported the DivHIS Human Resources Committee to identify skills gaps and to prepare a set of short term courses in response to those gaps.
- Assisted the Division’s staff to develop a coherent Annual Work Plan, in order to support the Division to operationalize the HIS Strategic Plan (2010-2014).

Institutional Review of the NHIS at national and sub-national levels

- Reviewed the prevailing HIS legislative environment, HIS Policy (2010-2030) and HIS Strategic Plan (2010-2014) to identify how supportive or otherwise the health-related statutes are in the establishment of a unified and integrated NHIS.

As demonstrated through these achievements, the project has made significant in-roads in terms of its partnership with the health ministries, engaging non-GOK stakeholders in the process of HIS strengthening, and in strengthening local training structures to ensure sustainability of human capacity development. However, these achievements have not come easily. The change desired for this project is extremely complex and far reaching. Progress requires time, flexibility and patience.

The project learned some critical lessons for Year 2 project implementation—all of which are directly linked to the management of the change process. These include:

- the need for broad engagement of GOK staff beyond the DivHIS earlier in the process than had been originally anticipated
- the realities of being a country-owned project requires a high level of flexibility and adaptability
- the complexity of change required that some activities be delayed, in order to lay the groundwork for change
- The sector is facing tremendous external pressure to devolve its systems, which provides for high levels of uncertainty both in terms of the acceptability of new initiatives as well as roles and responsibilities of MOH staff over the coming year.

However, in Year 2, the project will apply these lessons to move forward with renewed vigor on infrastructure development, capacity building and organizational development. The following sections provide additional details on AfyaInfo’s Year 1 progress, challenges, lessons learned and way forward.

Background

Strengthening of the health information system (HIS) via the National Health Management Information System (HMIS) and other Government of Kenya (GOK) and health development partner data collection systems in Kenya has seen an increased level of attention and funding from various development partners over the last several years. The aim of these efforts has been to improve data quality and to strengthen the use of information for decision making. The United States Agency for International Development (USAID) has been a central player contributing to HIS strengthening efforts.

Many of the recent initiatives and activities towards HIS strengthening have targeted specific systems, e.g. the facility-based Routine Health Information System (RHIS), the Human Resource Information System (HRIS), the financial information system, the Logistic Management Information System (LMIS) etc. While this approach has worked well to strengthen the technology for and quality of data derived from specific databases, it generally has not supported system integration and interoperability. This has left the system as a whole without the ability to exchange data efficiently and effectively and share information across programmatic areas. USAID's uniquely designed five-year Kenya National HIS project, AfyaInfo, collaboratively supports the GoK to address this major weakness.

Project Description and Strategic Approach to Implementation

AfyaInfo, a USAID-funded project, supports the GOK to create a unified and integrated internet-based host country owned and managed National Health Information System (NHIS). This unified system will generate quality data to be used at all levels of the health system to support health management and improve health service delivery; it will also serve as the sole source of data for all health sector stakeholders, thus eliminating the need for the existing vertical reporting systems. As such, the project supports the GOK's HIS goals as well as USAID's efforts to improve Kenya's health programs through the use of strategic information¹.

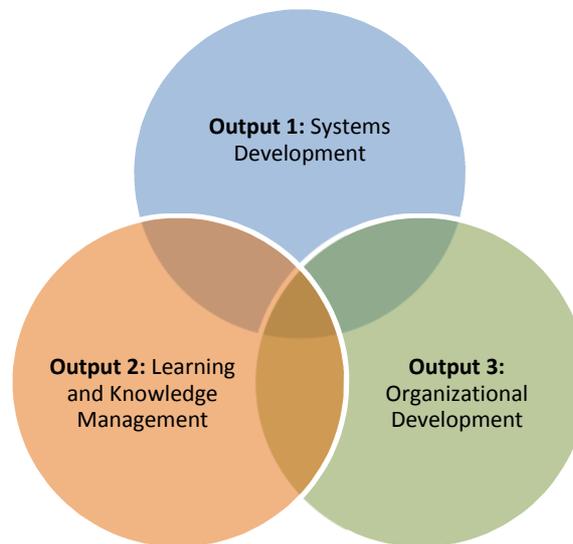
The AfyaInfo project has outlined a holistic approach to supporting Kenya's MOH through three interconnected strategy areas (Also depicted in Figure 1.):

- HIS Infrastructure - developing and or refining HIS infrastructure and systems to create a unified HIS (Output 1);
- Learning and Knowledge Management - defining and implementing the learning and knowledge management (LKM) structures required to drive the system through data demand and availability, build capacity to collect and use health information, and manage information and data collection structures (Output 2); and

¹ Based on USAID's framework for Kenya, the project contributes to USAID's intermediate result 2.1 by building capacity for using health sector data for program management, policy-making, and quality improvement; improving human capacity for quality data capture and reporting at all levels; and improving collection, analysis and dissemination of key national health statistics.

- Organizational support - developing the leadership and management capacity within the health ministries to assume a leadership role in developing, managing and sustaining current and future information system components (Output 3).

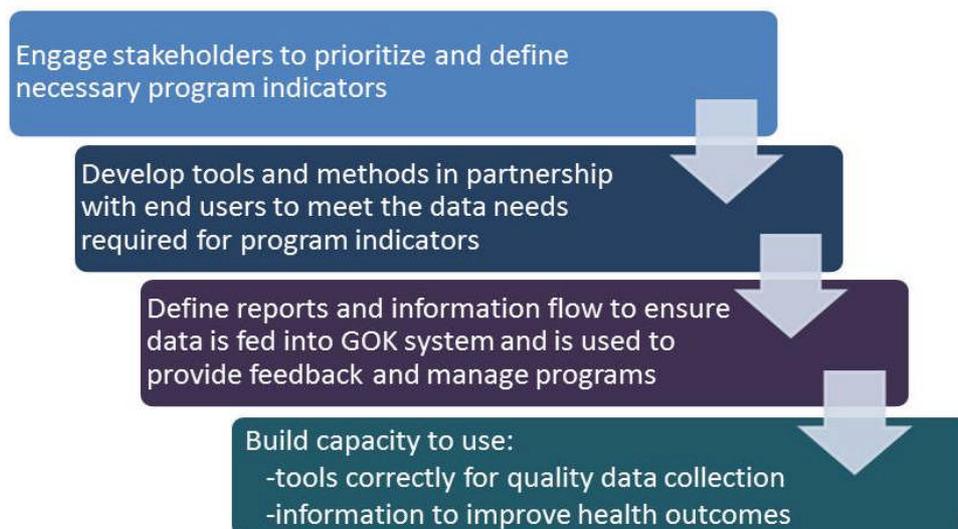
Figure 1 - Diagram of the 3 Interconnected and Inseparable Outputs.



Under **Output 1** AfyaInfo supports the GOK to undertake a standards-based approach to integrating the multiple health data streams in Kenya into one, unified, web-based NHIS. In terms of the NHIS infrastructure, this equates to the definition and adoption of national data standards to accommodate publicly and privately funded health information systems, the development and deployment of strong systems (electronic and paper-based) for data collection, the use of appropriate incentives for data inclusion and use, and technical assistance to transition existing HIS components into the national system.

Concurrent transitions will occur at the community, facility, subnational and national levels to reform and unify the Health Information System (HIS) infrastructure. The process for this reform is depicted in Figure 2. This process reaches and unifies public and private stakeholders at each level of the system to ensure ownership, interoperability, and use of the revised system.

Figure 2 – Process for HIS Infrastructure Reform



Building a HIS that stakeholders will use requires defining the sector’s information needs, training workers to collect and use reliable health data, making these health data available, increasing the demand for and use of data, and building the capacity to manage both the information gathered and the data collection structures. These components, which are mutually reinforcing, comprise **Output 2’s** “Learning and Knowledge Management System” (LKM). Output 2 will support the MOH to design and implement a learning and knowledge management (LKM) system to support the HIS. “LKM” is an umbrella term encompassing many unique but related facets of knowledge. For this project, the LKM is defined as: *“A systematic process that increases demand for and use of health information to enhance evidence-based decision making and support efforts to improve data quality.”* Capacity building for data users is the driving force of the LKM system.

Finally, an effective country-led process of HIS strengthening requires strong leadership and management at the national level from the MOH and at the county level from the county health management team. Due to the current state of flux in the GOK, no single operational unit at the national level has sufficient authority or capacity to lead the HIS transformation, and institutional structures are not adequate for HIS development. AfyaInfo’s approach, conducted via **Output 3**, to strengthening the central and county-level HIS structures is based on a core competency model for organizational capacity-building developed under the USAID’s Health Systems 20/20 project. This model defines the core competencies that the MOH’s Division of HIS (DivHIS) must have at the national and county levels in order to carry out its role and functions. AfyaInfo is working with the government to strengthen these competencies in order to sustain and contribute to HIS strengthening efforts.

The Context within which the Project Operates

The health sector’s resources are limited. As such, it is critically important to avoid overlap and duplication of efforts in HIS strengthening as well as to ensure that national standards, guidelines and approaches to HIS strengthening are consistently

implemented down to the lowest levels of the health system. The GOK must lead and drive systems strengthening in order to align partner support and maximize impact of systems strengthening efforts.

The AfyaInfo project works in close collaboration with the ministries of health to unify the multiple health data streams in the country and strengthen the MOH's ability to manage and support the use of the resulting systems. The project contributes directly to goals outlined by the GOK for HIS strengthening, and the project's annual workplan is a subset of the health ministries' Annual Work Plan (AWP).

In order to maintain this close collaboration and alignment with the GOK, the project functions as a support system to the ministries; interacts with the DivHIS, the Information, Communication and Technology (ICT) Department, and other relevant GOK departments and agencies on an almost daily basis to implement technical work; has an entire strategic area (Output 3) dedicated to GOK organizational strengthening; and continues to host workshops, meetings, and other events/fora to engage government counterparts in shaping and implementing project activities.

This partnership, although powerful, has required and will continue to require a significant amount of work to build momentum on the ground and align stakeholders to the sector's information system priorities. To this end, during Year 1, AfyaInfo facilitated workplanning sessions for the DivHIS to strengthen the documentation of assistance needed within the DivHIS and, on the flip-side, facilitated the process of harmonizing the work plans of national and regional USAID implementing partners with the DivHIS's AWP.



Photo - Dr. Bill Martin Osumba, Chief of Party, AfyaInfo; Dr. Charles Nzioka, Head, DivHIS, MOPHS; and Dr. Samuel Were, Head of Technical Planning and Performance Monitoring, MOPHS discuss project alignment with GOK Annual Work Plans.

These efforts to strengthen the project's partnership with the GOK and to assist the MOH to bring other implementing partners on board with MOH plans will continue throughout project implementation.

Project Progress and Achievements by Strategy Area

Output 1- A Unified and Integrated Internet-Based Host Country Owned and Managed National Health Information System that Generates Quality Data Used at All Levels to Improve Health Service Delivery

AfyaInfo is supports the GOK to establish and/or refine the ICT infrastructure and operating systems needed to create an optimal ecosystem for an unified, integrated NHIS. This includes infrastructure development, systems development and deployment, and the integration of community and facility information systems—all of which are driven by end-user needs².

In Year 1 the project made great strides and achievements in the following Output 1 areas:

Systems Development and Deployment

To inform systems development, in Year 1 the project identified and created an inventory of relevant electronic information systems that were viewed as candidates for the first rounds of integration into the web based national health information system³. The project, in collaboration with the DivHIS, then reviewed the systems included in the inventory to understand the platforms they were running, the types of systems, the operating environments, the technology used to develop them, and the purpose served in order to understand the infrastructure requirements and needs.

AfyaInfo also provided support for some of the MOH's existing initiatives and structures, such as the Master Facility List⁴ (MFL) and the District Health Information Software version 2 (DHIS2)⁵. With integration looming, design and development of integration technology to enable these two systems to exchange data became imperative. In Year 1, AfyaInfo supported the MOH to develop an MFL application program interface (API). The MFL API, once operationalized, will allow other databases and systems to “pull” data from the MFL into their own structures on a real-time basis. The API was developed in close collaboration and consultation with the DHIS2 system developers and the first use of the MFL API will be to link the DHIS2 and MFL systems. This is the first step in creating an integrated HMIS through the use of the MFL as the “glue” to hold various systems together.

² Outputs 2 and 3 will assist the MOH to identify end user needs through stakeholder engagement processes.

³ This list of systems will continue to grow in subsequent years as the NHIS takes shape and more GOK programs and agencies buy in to the idea of system integration.)

⁴ The MFL has been a critical, USAID-funded initiative in moving towards system integration. This web-based facility database has provided a unique set of health facility codes—the primary key necessary to link all the facility based databases and to integrate HIS.

⁵ Roll-out to the District level of the DHIS2 was initiated before the start of AfyaInfo with DANIDA support. This support has since transferred to USAID through the Health Systems 20/20 project and now AfyaInfo. This web-based system compiles routine health system data at the district level for transmission to the provincial and national levels.

Infrastructure Development

In Year 1, AfyaInfo's infrastructure development efforts focused on working with the DivHIS and ICT Department to assess the existing infrastructure and prioritize infrastructure needs. A review of the existing infrastructure assessments yielded little information so the project supported a broad infrastructure assessment which reached a selected sample of 19 counties and 25 districts—40% of the total number of districts. Each of these districts was selected through serialization and systemic sampling done from the total of 74 districts. The facilities within these districts were sampled by randomly selecting 10% of the facilities in each district from the MFL. The scale of the assessment was critical in order to provide enough detail at each health sector level to design and build an optimal HIS.

Results of the infrastructure assessment will inform project procurement in Year 2.

KePMS Transition

In line with MOH and project goals to integrate vertical reporting systems into one unified system, the U.S. President's Emergency Fund for AIDS Relief's (PEPFAR) Kenya Program Monitoring System (KePMS) will be integrated into the DHIS2. In Year 1, the project developed a KePMS to DHIS2 Transition Strategy that details the process for transitioning the KePMS. As part of this strategy, a KePMS to DHIS2 technical working group (K2DWG) was formed that is comprised of representatives from both the GOK and PEPFAR implementing partners. This working group has already begun to make concrete recommendations on the system requirements that must be reflected in DHIS2 to mirror KePMS. In Year Two, this working group will help to focus the energy and skills of the various members of the working group into implementation of the "K2D" strategy.

However, until KePMS is integrated, AfyaInfo will continue to support the regular PEPFAR reporting obligations to the U.S. Government through KePMS—which include regular system updates, training, partner consultations to prepare for reporting, and organizing Pre-APR and APR partner forums. In Year 1 the project successfully managed the Annual and Semi-Annual Performance reporting cycles and assisted partners to achieve a 98% reporting rate in each cycle.

Integration of CHIS/COBAR

The national community strategy for the delivery of community health services organizes households into community units, established by and linked to a specific health facility. These units are designed to deliver, manage and report all community-level health services, as an extension of the services being delivered at the facility-level. AfyaInfo's mandate for data integration extends beyond the health facility level to the community level. This includes, but is not limited to; the integration of the community health information system (CHIS) into the National Health Information System (NHIS) as well as the U.S. Government supported Community Based Program Activity Report (COBPAP). Similar to the rationale for creating the MFL, which is being used as a primary key to link data collected at the facility level to additional HIS sources, an inventory of community units is a necessary first step to create a platform upon which to integrate CHIS and COBPAP into the NHIS.

In Year 1 AfyaInfo assisted the Division of Community Health Services (DCHS) to develop the system requirements specifications (SRS) document for the Master

Community Unit List (MCUL) which provides descriptive information on the county's community units and uniquely codes each of these units to its corresponding health facilities in the MFL.

The development of MCUL is a major milestone in the integration of the community data into a Community Health Information System (CHIS), and the GOK has committed to maintain the MCUL after development. In Year Two, AfyaInfo will use the MCUL software to seamlessly link community data with the rest of the health system through the MFL.

Output 2 - Functional GOK-Managed Learning and Knowledge Management System that Improves the Culture of Information Generation, Knowledge Capturing and Information Use by September 2015

This output defines and implements the learning and knowledge management (LKM) structures required to drive the system through data demand and availability, build capacity to collect and use health information, and manage information gathered and data collection structures. In Year 1 the activity stream included activities to map health sector stakeholder to inform information needs; strengthen data collection and use capacity; develop technology and information products to increase demand for data; and started to support the development of the health sector M&E framework for the Kenya Health Sector Strategic Plan III (KHSSPIII).

Key achievements for Output 2 in Year 1 include the following:

Stakeholder and Information Needs Mapping

A critical component to creating an HIS that will be used by health sector stakeholders is ensuring the system is responsive to stakeholder needs. In Year 1 AfyaInfo worked with the DivHIS to map stakeholders and their information needs and determine how well current national HIS structures are meeting these needs. The assessment concluded that:

- Stakeholder data needs are not met by the HIS as currently structured and therefore stakeholders have resorted to using other mechanisms to obtain data e.g. establishing their own HIS, carrying out periodic surveys or contacting programs, facilities or communities directly to obtain data.
- Some indicators are not captured by the HMIS (e.g. indicators for health promotion, the community level, and the private sector) and therefore the NHIS needs to be more inclusive in data capture.
- There is lack of clarity about the existing data elements and indicators from the different levels: communities, facilities, programs should all translate to the national level indicators.
- Stakeholders are eager to participate in an LKM process as it is seen as a tool to streamline data ownership, accessibility, demand and utilization. Many indicated they are willing to bring their time, resources and expertise to make this happen.

These conclusions were useful in informing the larger NHIS efforts as well as guiding the LKM agenda. Against the backdrop of these findings, the project revised the 2nd

edition indicator manual and data collection tools to ensure that all the sector indicators were captured. Also in Year 1, the project developed a stakeholder engagement strategy that will guide stakeholder engagement during the life of the project.

Capacity Strengthening

In Year 1 AfyaInfo worked to strengthen both pre-service education for Health Records and Information Officers (HRIOs) and in-service training for those in the health sector managing health data and information. AfyaInfo worked with the Kenya Medical Training College (KMTTC) to lay the ground work for a curriculum review and implementation exercise for KMTTC's Health Records and Information Management training program. Together, the AfyaInfo and KMTTC team revised graduate competencies and conducted a training needs assessment to compare the skills of the graduates vis a vis the revised competencies list. The training needs assessment report concluded that there is a clear disparity between the skills and competencies imparted by the health records and information management program and the job requirements of the Health Records Information Officers once released into the Kenyan market. The capacity gaps identified will be the basis for a curriculum review exercise in Year 2. Health records officers take on the bulk of the sector's data management functions. Reviewing and revising the pre-service curriculum will provide a sustainable HIS capacity building mechanism and will reduce the need for in service refresher trainings.



Photo - Representatives from the DivHIS contribute to in-service, HIS training materials development.

In Year 1, the project made great strides in standardizing the in-service training materials that are being used to train health workers on the MFL and DHIS2. This enhanced and standardized training package will ensure that MFL and DHIS2 trainings are meeting the needs of the participants and will ensure consistency in training materials and skills transfer across partners and regions. Working with the

DivHIS, AfyaInfo supported the consolidation and development of a standardized competency based training package for DHIS2 and the MFL. This package was used to train 100 national trainers drawn from MOH regional teams, the Kenyan Episcopal Conference (KEC), Center for Health Solutions (CHS) and KMTTC. The inclusion of non-MOH partners will strengthen and promote cascaded trainings in the private sector. KEC as the umbrella body for Catholic faith-based organizations has 450 health facilities spread across the country, and KMTTC is the largest producer of health care workers, with campuses spread across the country. CHS is a resource partner for AfyaInfo that will be assisting the MOH to provide training materials and delivery support starting in Year 2.

Technology and information products

Working with the system development team under Output 1, the project revised the DHIS2 data dashboards to enable users to access data and information according to their specific needs. These enhancements will ease the process of accessing information

that is collected regularly through the system and will help to promote use of DHIS2 for decision making.

Additionally, it was noted during the year that the ICT Board's Open Data Forum, an open access portal for the GOK contained inaccurate information. Discussions between AfyaInfo and the ICT Board have been on-going to ensure that the health data that are accessed through that portal are accurate and comprehensive. Once the MFL API, developed under Output 1, is operationalized, a link will be developed between the open data portal and the DHIS2 to ensure that the data available to users through this portal are the most current and accurate.

During the past year the project also supported the DivHIS to develop an annual health statistics report for the sector and to develop a quarterly ebulletin template for the DivHIS. The ebulletin will highlight success stories in the use of health data so as to promote data use.

Support for the development of KHSSP III and the health sector M&E framework

In Year 1, the Department of Technical Planning initiated the development of KHSSP III, which is a 5-year investment plan for the health sector. The strategic plan, which is now in draft form, translates the health policy into actionable investments and provides the strategic direction for the health sector. AfyaInfo supported the KHSSP III's M&E working group in discussions to develop the health sector's M&E framework and guideline.

The mid- and end-term evaluation reports of the previous strategic plan (NHSSP II) identified the failure to strengthen health sector M&E as the single biggest contributor poor implementation progress. With AfyaInfo's support, for the first time, the health sector has an M&E chapter outlining the process for monitoring performance of strategic plan implementation. This M&E chapter laid the foundation for the establishment of one M&E system, as stipulated in the health policy. Consequently, in Year 2, AfyaInfo will support the MOH to develop the health sector M&E framework and guideline, which details how the principles outlined in the M&E chapter will be operationalized. The project will work with the MOH to finalize KHSSP III in Year 2.

Refinement and finalization of the Second Edition of the MOH Indicator Manual and associated data collection, summarization and reporting tools and methods

MOH programs and planning units have for a long time maintained different sets of indicators for monitoring performance. This often leads to duplication, overlap and confusion. To overcome this and reduce transaction costs while increasing efficiency, the MOH decided to harmonize the indicators into a single compendium. In Year 1, AfyaInfo supported DivHIS and MOH programs in the development of the 2nd edition health sector indicator manual. The project provided technical assistance to rationalize the indicators into a single set of indicators that would be agreed upon across the entire health sector and could be used to measure the progress of the health system from input to impact. In Year 1, the MOH shared the draft indicator manual with key stakeholders. Their feedback will be used to further refine the manual and for subsequent tool revision to take place in Year 2.

Output 3 - A functional HMIS division that is capable of passing a USAID pre-award responsibility determination leadership and management, financial and procurement capability

Output 3 is aimed at further developing the leadership and management capacity of the MOH/DivHIS to assume a leadership role in developing, managing and sustaining current and future NHIS components over time. The work in Year 1 under this strategy area was grouped into three categories: defining and supporting structural changes, building capacity and strengthening the policy and legal environment.

Definition and implementation of DivHIS internal structural changes

In order to gather the evidence needed to build the capacity of the DivHIS and recommend organizational strengthening changes, AfyaInfo undertook two detailed assessments: an organizational and management assessment of the DivHIS and a stakeholder needs assessment (in coordination with Output 2's stakeholder mapping).

The organizational and management assessment identified the Division's capabilities in leadership and management, teamwork, management systems, organization structure and staffing, resources, strategy and planning as well as stakeholder coordination. Working collaboratively with the DivHIS, AfyaInfo supported the development of a detailed DivHIS organizational Strengthening Action Plan that detailed the key organizational and management interventions needed to help the DivHIS discharge its mandate efficiently and effectively. One of the interventions identified resulted in the adoption of a new functional structure for the DivHIS—dividing the division into five units, each with a clear mandate, deliverables and staffing. The units are operational and are now being used to deliver on the annual workplan for the Division.

The stakeholder needs assessment and mapping informed the development of a Draft National Health Information Systems Stakeholder Coordination Strategy (NHISCS) to guide HIS sub-sector's engagement with and responsiveness to its stakeholders.

DivHIS Capacity building

The DivHIS lacks sufficient human resources needed to fully operationalize their work plans and strategies. To address this, AfyaInfo supported the MOH leadership to formally request additional support for an ICT Advisor and HMIS Advisor from the USAID Capacity project. AfyaInfo also supported the DivHIS Human Resources Committee to identify skills gaps and to prepare a set of short term courses in response to those gaps.

In order to support the Division to operationalize the HIS Strategic Plan (2010-2014), AfyaInfo worked with the Division's staff to develop a coherent joint Annual Work Plan (AWP1, 2012/13).

Institutional Review of the NHIS at national and sub-national levels

The operational framework within which the HMIS operates has been impacted in one way or another by the country's changing political, social and economic environment, particularly the passage of the Constitution of Kenya, 2010, the passage of critical legislations on devolution, and transition to a devolved government. In order to align the HIS with the prevailing national realities and ensure HIS plays its rightful role going

forward, during the past year AfyaInfo reviewed the prevailing HIS legislative environment, HIS Policy (2010-2030) and HIS Strategic Plan (2010-2014). The results of these reviews, which will be completed in Year 2, will identify how supportive or otherwise the health-related statutes are in establishment of a unified and integrated NHIS and its application in data use for evidence-based decision making. The project will also support MoH/DivHIS ensure that the critical policy documents on HIS and sector M&E are in tune with the prevailing socio-economic and political realities.

Project Documents

The matrix below includes a list of key project documents from the first year of project implementation. These documents are available upon request.

| Activity Outputs | Type of output | Status |
|--|-------------------------|--------|
| Output 1 | | |
| Desk Review Report | Review report | Final |
| Infrastructure Assessment report | Assessment Report | Draft |
| Definition of the Optimal Infrastructure for the National Health Information System | Strategy Paper | Draft |
| The Kenya HIS Migration Concept paper | Concept Paper | Final |
| Strategy Paper for CHIS integration | Strategy Document | Final |
| Master Community Unit List SRS document | SRS Document | Final |
| Output 2 | | |
| Review of the KMTTC's Health Records and Information Curriculum Concept Paper | Concept Paper | Final |
| Training Needs Assessment of the KMTTC Health Records and Information Officer's Curriculum | Assessment Report | Final |
| Stakeholder Assessment Report | Assessment | Final |
| Health Sector M&E Technical Working Group Terms of Reference | Terms of Reference | Final |
| Information Use Mapping, Data Use Constraints and Data Needs Concept Paper | Concept Paper | Final |
| LKM Training Needs Assessment Concept Paper | Concept Paper | Final |
| DQA Concept Paper | Concept Paper | Draft |
| Draft KNSSP III M&E Framework | Policy Document Chapter | Draft |
| Revised MFL/DHIS Training Materials | Training resources | Draft |
| First HMIS Fact Sheet (produced for POC) | Information product | Final |
| Output 3 | | |
| Organizational and Management Assessment Report | Assessment Report | Final |
| National HIS Stakeholder Coordination Strategy | Strategy document | Draft |
| HIS Institutional Review Concept Note | Concept Note | Draft |
| HIS HR Gaps Analysis Concept Note | Concept Note | Final |
| HIS Legal, Policy & Strategic Plan Review | Review document | Draft |

Lessons Learned

In Year 1 the project made significant in-roads in terms of its partnership with the health ministries, engaging non-GOK stakeholders in the process of HIS strengthening, and in strengthening local training structures to ensure sustainability of human capacity development. However, the change desired for this project is extremely complex and far reaching. It will require time, flexibility and patience to success. The project learned some critical lessons for Year 2 project implementation—all of which are directly linked to the management of the change process. First, the project learned that there is a need for broad engagement of GOK staff beyond the DivHIS earlier in the process than had been originally anticipated. Second, the project is learning what it truly means to be a country-owned project—which requires a high level of flexibility and adaptability. Third, the complexity of change required that some systems development be delayed but the project is learning to anticipate timelines for activity implementation within the MOH and is becoming better adept at identifying areas that can move forward, while awaiting approvals and/or action in other areas.

The AfyaInfo team's entry point into the health ministries for HIS work was paved through earlier work on the USAID Health Systems 20/20 project and the DANIDA projects, both of which engaged extensively with the DivHIS. The lesson learned in Year 1 was that extending the scope of HIS integration early and getting broad engagement of GOK staff, beyond the DIVHIS, were needed to ensure alignment with MOH functions. This meant going beyond the DivHIS to the health ministries' senior leadership and other departments, divisions, and programs—all of which has required time and commitment. For example, the work on the sector's M&E framework is seated with the Department of Planning in the MOPHS; decisions on DivHIS restructuring needed to be made by leadership outside of the DivHIS; and the work on the community information system is conducted in partnership with the Department of Community Health Services. Identifying the correct department and individuals within those departments is essential not only in terms of MOH functions but also for the process of change management as these contact points will serve as "change agents" within and outside the MOH and will strengthen country ownership of the process.

County-ownership is an evolving process. Supporting a country-owned project requires a high level of flexibility and adaptability; it also requires political savvy to understand the levels to which certain concepts are truly "owned" by the government. In Year 1, the project found that there were high levels of ownership for certain piece of the vision but that the ownership for the full vision of systems integration would require advocacy, training and broad engagement of both GOK and non-GOK actors. Without true government ownership of the overriding project goals, mutual accountability for the integration objective will be difficult to achieve. This lack of widespread ownership for the full vision contributed to setbacks in the timelines for LKM activities and has required some backtracking in the systems development processes. The project has a role to play in ensuring true "ownership" and will be taking on a broader, more inclusive approach to tackling initiatives. The project is addressing current deficiencies in two ways: through the creation of a high-level project oversight committee and by adapting our approach to activity implementation to better align with and support MOH HIS priorities and timelines. Both of these strategies will strengthen communication, accountability, and partnership with our MOH counterparts.



Last of all, change is complex and has required flexibility. Changes to DivHIS organizational structure under Output 3 introduced additional changes which also required management. Switching from DANIDA funding to USAID funding introduced changes to the way activities are supported and implemented. The upcoming general elections and implementation of the devolved structures in Year 2 will introduce even further reaching and more complex changes. The project has learned that it needs to approach these changes more broadly and prepare for and anticipate upcoming changes. AfyaInfo is also working to better respond to resistance in an appropriate fashion and utilize both patience and persistence to move work forward. By stepping back and approaching the change differently, the project is learning to better anticipate timelines and identify areas where there is less resistance to change.

Key Milestones

Strengthening pre-service education for health records and information management

Kenya Medical Training College (KMTC) is the single largest contributor of graduates to the Kenya health workforce. They produce more than 2500 graduates each year for the Kenyan public and private health sectors and their graduates currently account for more than 80 percent of the workforce at Kenyan hospitals. Within Kenya, the institution has 28 constituent colleges throughout the country, some strategically located near remote provincial or district hospitals--meaning they are well positioned to impact healthcare even in the most remote locations. Regionally, it is one of the largest medical training institutions in East and Central Africa, drawing students from Uganda, Tanzania, Burundi, Rwanda, Sudan and Nigeria. Recognizing this reach, in Year 1 AfyaInfo initiated an innovative and sustainable approach to strengthening the capacity of the HIS workforce. Through Years 1 and 2 AfyaInfo and KMTC will work in partnership to review and strengthen the training curriculum for KMTC's health records and information management certificate and diploma programs so that they will be better aligned with the skills and competencies needed within the sector for HIS system support and operation.

This process began with a review of graduate competencies and a training needs assessment to identify the gaps in competencies between the recent health records and information certificate and diploma program graduates and the requisite demands at their prospective Kenyan workplaces. The needs assessment targeted three stakeholder groups—current and former students, tutors/lectures and health facility managers—across 5 KMTC campuses, 15 public and private health facilities, and several health programs, and from within implementing partners. The final TNA report identified clear gaps in the training program and will be used to guide the curriculum review process in Year 2.

This is a key milestone in the implementation of the AfyaInfo institutional and human resources sustainability strategy. By strengthening pre-service education for the cadre of individuals supporting data collection and management in the public and private sector, the program will be strengthening their effectiveness upon entry into the workforce and will minimize the need for future in-service training. By the end of Year 2 AfyaInfo will have supported KMTC to implement the revised curricula across the KMTC campuses which offer pre-service health records and information management



programs. The curriculum review will also prepare KMTTC to play a key role under the new constitution, as one of the national network of sites capable of providing quality in-service training.

Analyzing stakeholder needs to inform system development

Too often systems development is initiated without a clear picture of end-user needs. HIS development must take into account the needs and resources of stakeholders if it is to successfully provide the type of information products that will improve decision making at all levels within and external to the GOK health sector. To avoid a disconnect between the eventual National HIS infrastructure and the needs of the system-users AfyaInfo assisted the MOH to map data use among stakeholders and their information use, data needs, and data use constraints. This is a significant shift in the way data contained within the HIS has been defined by the MOH and will be imperative in promoting a single, unified and integrated HIS.

AfyaInfo, working with Division of HIS (DivHIS), undertook detailed HIS stakeholder mapping and data needs assessments, which demonstrated a lack of structured forums to discuss needs and interests, a lack of leadership within the DivHIS for stakeholder coordination, and a lack of coordination amongst donor supported HIS activities which sometimes leads to duplication of efforts.

As a result of assessments, the DivHIS drafted a HIS Stakeholder Coordination Strategy (HISSCS) and the project extended its assistance to define health sector data needs through the MOH M&E technical working group.

Supporting development of a sector M&E framework

As noted under the project's Year 1 achievements, AfyaInfo provided technical assistance to the Department of Technical Planning to develop the 5-year strategy for finalizing and launching the health sector's M&E framework. The framework, which will be included as a part of the NHSSP III, is a key step forward in strengthening Kenya's health sector performance monitoring and addresses what was identify as a major implementation gap in the sector's previous strategic plan. This is key as it is the first M&E framework developed for Kenya in support of a MOH strategic plan and it will allow the GOK to track progress and outcomes associated with the strategic plan's implementation.

Moving forward, AfyaInfo will be supporting the health ministries to implement the strategy for launching the M&E framework. This M&E framework will be an integral part of the LKM system as it defines information needs at the sector level. These discussions have begun to filter down to the program and project level—where it will be necessary to define user needs and ensure users can be accommodated within a single HMIS, as opposed to independent and parallel systems. The articulation of user information needs through the LKM system will then provide system developers with the clarity needed to ensure that the system is fully responsive to those needs.

Policy and legal environment review

In Year 1 AfyaInfo assisted the Kenyan health ministries to identify the gaps and weaknesses in the current strategic, legal, and policy frameworks that govern health information systems (HIS). This is first time that a comprehensive review of the governing frameworks for HIS has taken place and it will allow for development of a

comprehensive legal and policy framework to drive HMIS roles, responsibilities and operations under the soon to be devolved system.

The program utilized key informant interviews and a review of the HIS Strategic Plan, HIS Policy and Kenyan Health Law to identify recommendations for strengthening the HIS governing frameworks. Review findings reveal that the current legal framework is not adequate to meet the increasing demands for a quality HIS at the national and sub-national levels especially within the context of constitutionally mandated devolution. There is a need to update and review the health related information statutes in order to, enforce mandatory reporting by all health care providers in the country; address issues related to dissemination, storage and confidentiality of health data in line with the constitution; bestow all responsibility regarding HIS to the MoH as the parent ministry; address issues related to access to information for research purposes and/or for protection of public health.

AfyaInfo will continue to provide support through strategic, policy and legal framework reviews to ensure consistency and appropriateness of the comprehensive package of governing statutes.

Community unit inventory and data management software

AfyaInfo's mandate for data integration extends beyond the health facility level to the community level. This includes, but is not limited to, the integration of the community health information system (CHIS) into the National Health Information System (NHIS). The national strategy for the delivery of community health services groups households into community units--community based structures established by and linked to a specific health facility. These units are designed to deliver, manage and report all community-level health services, as an extension of the services being delivered at the facility-level. Similar to the Master Facility List (MFL), which is being used as a primary key to link data collected at the facility level to additional HIS sources, AfyaInfo has assisted the Kenyan Health Ministries to develop a Master Community Unit List (MCUL) to manage descriptive data about the community units and create a platform upon which to integrate CHIS into the NHIS. The MCUL will enable the integration of multiple community systems into a single data set, so that, for the first time, comparable units from multiple community level data sets will be available for analysis and presentation to users.

To populate the MCUL, the project supported a community unit inventory. This inventory will not only support information systems integration needs but is also being used to inform planning within the DCHS. It is a major milestone for the Community Health Information System and the GOK has committed to maintaining the MCUL software and the data contained within.

Adjustments to Project Strategies and Approaches

Implementation of the new constitution and devolution: effect on the project

Devolution has been clearly identified as one of the most fundamental and far-reaching changes in the new constitution's dispensation. All line ministries are required to provide strategy and policy guidance submissions to the relevant constitutional offices on implementation of the Constitution. This guidance will inform the implementation of the new constitution and the subsequent devolution. The MOH has published the

'Health Sector Position Paper on Implementation of the Constitution and Devolution,' putting them ahead of the curve on compliance with constitutional provisions, in an environment where clarity on how the devolution will roll-out is emerging slowly.

Both the process and outcome of the constitution's implementation will affect AfyaInfo as a project. The impact of devolution will be far-reaching and will impact the system at all levels. For example:

1. The project has, in the past nine months, noted a certain level of inertia among MOH staff and leadership to begin or push new initiatives. Our considered assessment is that this is due, at least in part, to the lack of full clarity on the devolved structures and how the devolution process will impact new initiatives and personal; organizational anxieties over the impending devolution and the merger of the two ministries; as well as an increased pressure on and demand for staff time in order to implement the constitution and devolved structure. This has affected overall pace of activity implementation. For example, 'Political integration' of community level information calls for policy discourse between the DivHIS and NACC as a prerequisite to 'technological integration'. The parties appear to be unwilling to engage in such dialogue during this period of ambiguity and are awaiting the outcomes (both personal and institutional) of the devolution process.
2. The Kenya Health Policy Framework and the KHSSP III are the key policy and strategic documents detailing the devolution process within the health sector. The need to reflect the revised functions of the national and county levels throughout the MOH has provided an unexpected opportunity. This introspection has heightened the need for an MOH health sector M&E framework and guideline to be read together with KHSSP III. Not only has the AfyaInfo team been provided the unique opportunity to provide technical assistance to the MOH to develop this framework but, this opportunity will provide a critical gateway to the establishment of the health sector's Learning and Knowledge Management System.
3. Under the devolved system, planning and M&E units will be established at the county level. This equates to 47 new units which require staff with competencies in management, data and information management, M&E, policy development and analysis, etc. The project will need to re-orient both its technical approach and timelines for DivHIS organizational development strengthening in order to assist the Division and MOH to:
 - i. Define the criteria and process for devolution of HMIS related functions to the counties.
 - ii. Review the HIS policy and strategic plan to align with the Constitution, Vision 2030⁶, Kenya Health Policy Framework 2012-2030 and the KHSSP III.
 - iii. Define the capacities which the counties will need to be able to meet their newly defined responsibilities.
4. The health sector's position paper on implementation of the constitution proposes that county management teams be in place by December 2012. However, the full spectrum of devolved functions will only take effect after the counties come into

⁶ Kenya Vision 2030, Government of the Republic of Kenya (2007).

existence, after the general elections in either April or May 2013. This, essentially, provides for a window of political uncertainty that will prevail throughout most of AfyaInfo's second year of project implementation. This situation will affect project implementation overall, especially for the organizational development work stream which is reliant on engaging with MOH staff.

Evolution of project implementation strategies in response to prevailing realities

The health sector is a dynamic environment, particularly now in the time of constitutional implementation. During Year 1 the project team has had to adjust implementation strategies to accommodate emerging realities. The following are specific examples of how the project strategy was revised during Year 1 to remain on course with implementation.

1. As discussed under lessons learned, the MOH's DivHIS does not have an all-inclusive mandate to oversee and implement all aspects of the project's task order. This realization called for engagement of additional, relevant MOH departments and divisions to lead the work which is included in our task order and is relevant to their mandate. This included the ICT Department, the Department of Technical Planning Monitoring and Evaluation, the Division of Community Health Services, and the Office of the Directors. AfyaInfo has had to seek engagement external to the DivHIS on the following project activities: data warehousing, database management and system administration, information system integration and interoperability, establishment of an effective data quality assurance protocol, development of the health sector M&E framework and guidelines, elements of DivHIS organizational restructuring, and the development of the HIS code of conduct.
2. During the first year of the project, the team experienced resistance from the DivHIS staff to work directly with international short term technical assistance (STTA). The project has needed to find alternative means of working with international STTA, in order to benefit from their expertise while limiting direct engagement with the DivHIS staff. The project has begun to rely more heavily on remote and/or back office support; 'shadowing' of MoH staff; and deferment of all engagement with DivHIS staff to delegated, local project staff members.
3. The MOH has expressed the felt need for transitioning human resources for health (HRH) capacity building initiatives from the ministry departments to relevant and appropriate local training institutions. 'Moving training from hotel conferences to where it belongs'. While this is the official position of the MOH leadership, some staff member within DivHIS were not aware of this policy direction and/or the pathway to implementation. AfyaInfo has had to consistently communicate and/or reiterate the change in approach, breaking the implementation strategy down into three phases:
 - a) MOH/DivHIS staff will train trainers from across the health sector, including faculty of tertiary HRH training institutions, to implement direct training functions.

- b) The USAID supported implementing partners (AfyaInfo and APHIA+) will roll-out the first round of NHIS in-service trainings with quality assurance support from DivHIS, local training institutions, and AfyaInfo local partner in Year 2, Center for Health Solutions.
 - c) KMTC will utilize their, soon to be strengthened, pre-service curriculum and the standardized set of in-service HIS training packages to embed short-course NHIS trainings as in-services courses, with the ToT pool noted under point one providing adjunct faculty services.
4. Sustainability remains a central implementation strategy for the project. Recognizing this and working through strategic partnerships, the project has re-oriented the contribution of the University of Nairobi and Kenyatta University. From basic technological support to MOH, DivHIS and Dept. ICT to a holistic development approach to support of the NHIS by aiming to establish academic programs at masters and PhD level around DHIS2. This would ensure growth of a pool of local HRH personnel with high technical skills to support of the integrated NHIS.

The Way Forward/ Coming Year

In Year 2 of the project:

Output 1 will finalize the infrastructure and systems gap analysis in order to procure and roll-out ICT infrastructure. Through the MFL and MCUL, the Output 1 team will begin systems integration—first by linking DHIS2 to the MFL and MCUL and then integrating CHIS and other systems within the health sector. AfyaInfo will also support the MOH to optimize and use the existing data center and USG implementing partners to maintain high PEPFAR reporting level. AfyaInfo will support the development of an MFL ‘Phase II’ so that the MFL system will include information useful to government regulatory boards in managing licensing and oversight of health facilities and services.

Output 2 will help to finalize the health sector M&E framework and guidelines so that the project can move past the definition of data needs to assist the GOK to define the LKM system itself based upon its needs to track progress and impact of strategic plan implementation. Additionally, Output 2 will continue to support pre- and in-service capacity building for data users and managers. It is through these initiatives that AfyaInfo will strengthen demand for and use of information at all levels.

Output 3 will use information gathered in Year 1 to develop and implement appropriate capacity building programs to strengthen management and coordination structures within the MOH. TH project will use the reviews of the HIS policy, strategic plan and legal framework to strengthen the HIS governing environment. Finally, the project will also use the project’s internal system of tracking organizational strengthening progress to develop appropriate performance indicators for assessing the yearly progress.



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