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ASSESSMENT OF THE ROUTINE HEALTH MANAGEMENT INFORMATION SYSTEM IN OYO STATE, FEDERAL REPUBLIC OF NIGERIA

September 2012

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ASSESSMENT OF THE ROUTINE HEALTH MANAGEMENT INFORMATION SYSTEM IN OYO STATE, FEDERAL REPUBLIC OF NIGERIA

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ACRONYMS

DHIS	District Health Information System
FMOH	Federal Ministry of Health
HMIS	Health Management Information System
HSDP	Health System Development Project
IT	Information Technology
LGA	Local Government Area
M&E	Monitoring and Evaluation
PRISM	Performance for Routine Information System Management
RHIS	Routine Health Information System
USAID	United States Agency for International Development

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EXECUTIVE SUMMARY

The goal of this assessment was to evaluate the Routine Health Information System (RHIS) in Oyo state. Objectives were to identify the strengths, weaknesses, threats, and opportunities of the Health Management Information System (HMIS) unit in the state and its local government areas (LGAs) with a view to identifying risks that pose a threat to the implementation of the District Health Information System (DHIS) version two (v2) software in the state. The Federal Ministry of Health (FMOH) previously selected the DHIS v1 as its software of choice for routine data management but owing to an upgrade of the software, is considering adoption and migration of the country to the DHIS v2 platform. Implementation of DHIS v2 is intended to improve the flow of data from the LGAs to the State Ministry of Health (SMOH) and subsequently the FMOH.

The study used a questionnaire-based assessment and key informant interviews of staff of the HMIS unit in Oyo SMOH and the health department of five selected LGAs. A total of six management assessment questionnaires were administered to the HMIS/Monitoring and Evaluation (M&E) officers at the state (one individual) and LGA (five individuals) level. Key informant interviews were also held with representatives from state and LGA HMIS offices. Interview responses were documented in written notes, typed into electronic data files, and analyzed logically. A desk review of reports and policy documents relating to HMIS at the state level, including the Directory of Summary of Medical and Health Institutions by Ownership and the Oyo State Comprehensive Health Bulletin, was also conducted. A critical aspect of the interview process was the gathering of information on the challenges faced by HMIS personnel.

Our findings from the field visits in June 2012 showed that the HMIS is partly functional in three of the five LGAs visited; the exceptions are Egbeda and Atiba. The three LGAs submit data on paper. Among the LGAs assessed, Ibadan North-East, Atiba, and Ogbomosho North each have one functional computer. Internet service is not available in any of the LGAs.

The state-level HMIS unit meets monthly and produces several reports from RHIS data collated monthly from data submitted by LGAs. (In contrast, regular meetings do not take place at the LGA level; respondents repeatedly commented on how limited resources prevented them from holding regular meetings.) The DHIS v1 was installed and used for data entry by the SMOH. However, the state does not promptly enter LGA data in the DHIS although the reports were noted to be available on paper. For this reason, the assessment team could not verify accuracy between paper report and database figures for the two months prior to this assessment.

Lack of support (financial and political will) from some LGA leaders, limited capacity-building opportunities, and lack of equipment such as computers are major challenges raised during the interview with the respondents. Problems noted by state-level HMIS officers include poor computer memory capacity, limited training on use of DHIS 1.4 software, and lack of funds to produce the revised HMIS forms. Officers at the LGAs also complained of lack of HMIS registers at health facilities, lack of computers to work with, lack of political support, and interference in administration of the health department by political office holders. Poor financing of the department and mobility problems were among other challenges identified. As such, a clear request for improved financial resource allocation and collaborative support by SMOH and the LGA leadership will go a long way in ensuring that the goals of the HMIS are achieved.

1. BACKGROUND

Oyo state is located in the South-West region of Nigeria. It is bordered by the Republic of Benin to the west, Kwara state to the north, Osun and Kwara states to the east, and Ogun state to the south. Oyo occupies a land area of 27,148 square kilometers. Ibadan, its capital, is situated in the palm belt. Figure 1 below shows the map of Oyo state. According to the 2009 Federal Government of Nigeria Official Gazette, the projected estimated population for 2008 was 5,591,589, with a population growth rate of 3.4 percent. The state has 33 local government areas (LGAs) grouped into six geographical zones: Ibadan, Oyo, Ogbomosho, Upper Oke Ogun, Lower Oke Ogun, and Ibarapa. The residents of the state belong to the Yoruba ethnic group of South-West Nigeria.

FIGURE 1: MAP OF OYO STATE

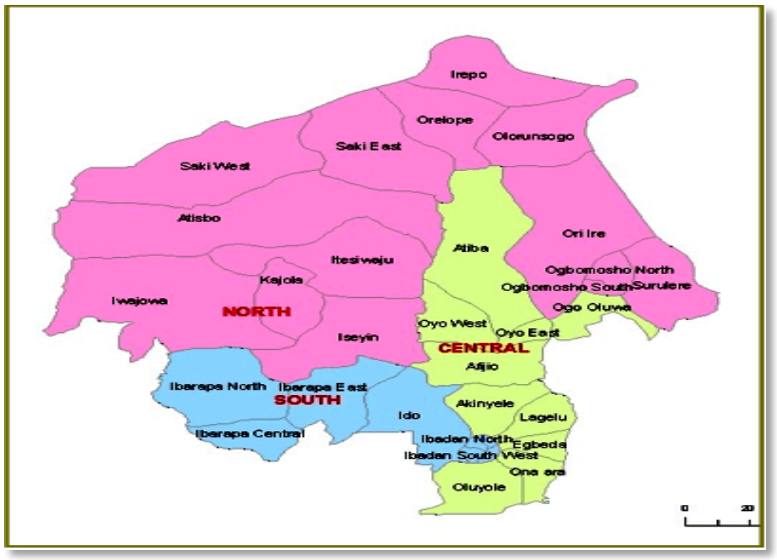


Table 1 lists four health indicators for Oyo state. According to the National Bureau of Statistics, 2006 Core Welfare Indicator Questionnaire (CWIQ) survey, over two-thirds (73.5 percent) of the households in the state have access to medical services. The majority of these households are located in the urban areas (81.9 percent); the rest (18.1 percent) are in rural areas. About eight of every 10 households (80 percent) are satisfied with the standard of medical services they receive.

TABLE 1: SELECT HEALTH INDICATORS FOR OYO STATE

Indicator	Statistics
Infant mortality rate *	59/1000 live births
Under 5 mortality rate *	89/1000 live births
HIV prevalence (%) **	5.8
Women who gave birth in past 5 years who received antenatal care (ANC) from a skilled provider (%) *	87

Source: *South-West Zone data, from National Population Commission and ICF Macro (2009)
**Federal Ministry of Health (2010)

2. INTRODUCTION

This assessment of the Health Management Information System (HMIS) of selected states in Nigeria came about as a result of the concerted efforts of the Federal Ministry of Health (FMOH), the United States Agency for International Development (USAID), and Health Systems 20/20 to improve routine disease surveillance in the country. As a result of continuous discussions, the importance of assessing the readiness of the State Ministries of Health (SMOH) and the health departments of LGAs to adopt the District Health Information System (DHIS) v2 software was highlighted. As such, Health Systems 20/20 was asked to carry out this task aimed at identifying the strengths, weaknesses, opportunities, and threats of the deployment.

The FMOH previously selected the DHIS as its platform of choice for the management of the routine health data. At the time of selection in 2006, the DHIS was deploying the v1 of the software, which was developed on a Microsoft Access background database (Family Health International, 2008). DHIS v1 was however found to have some limitations that made it difficult to enter data across multiple sites and, as such, it was difficult to compare data across geographical locations. At each point in time, each LGA where the DHIS was deployed could have a different instance of the database operating. Because the databases did not directly speak to one another, huge running costs were assumed to ensure that the databases were continuously synchronized.

Recognizing this significant limitation, developers of the DHIS developed the DHIS v2 on a web-enabled Java-driven platform. This higher version facilitated the deployment of a single database across the country that can be accessed remotely via the Internet thereby eliminating the difficult challenge of comparing data across borders. This single management level also reduces information technology (IT) management cost as this can be minimized to just one level.

Though the DHIS v2 brings the potential benefits of handling the IT challenge, it is still necessary to ensure that the processes for data collection at the states and the local government areas that are expected to furnish data into the DHIS system are optimal. As such, simply assessing the readiness for the deployment of the DHIS v2 software solitarily will not individually help to improve the data quality that the FMOH receives. Thus, Health Systems 20/20 sought to do a comprehensive assessment of the HMIS at the states and the LGAs with a view to assessing holistically the challenges at these points and offering solutions that would ultimately help improve the functioning of the national health information system.

The Performance for Routine Information System Management (PRISM) Assessment tool developed by MEASURE Evaluation and previously used and validated in several countries was adopted as the survey tool of choice for the assessment. It was adapted to the Nigerian context for this purpose.

3. METHODOLOGY

Purpose: The goal of the exercise was to conduct an evaluation of the Routine Health Information System (RHIS) in Oyo state of Nigeria. In addition, an assessment of the strengths, weaknesses, threats, and opportunities of the HMIS in the states and LGAs was conducted with a view to identifying points of weaknesses and opportunities in the deployment of the DHIS v2 software in the state.

Sampling: Five LGAs (Atiba, Egbeda, Ibadan North-East, Ogbomosho, and Oyo WestOgbomosho) were selected purposively to be visited in the state following consultation with the HMIS officer in the SMOH. At the time of this assessment, the state government was conducting a bio data verification exercise for all civil servants in the state, which resulted in many of the LGAs HMIS officers being absent from their base. As such, the selection of sites to be visited depended heavily on the availability of HMIS officers at their base. Working with the state HMIS officer, the team drew up a complete list of all LGAs by geographical areas in Oyo state by rural and urban variation. Out of 33 LGAs in Oyo state, five were selected for the assessment exercise: two urban and three rural.

Site Assessment: On arrival at the state, the team made courtesy visits to the Director of Planning, Research and Statistics (Oyo Ministry of Health) and the Hon. Commissioner of Health, Oyo state – Hon. Gbadegesin. A copy of the letter given by Health Systems 20/20 was tendered to the offices. Two rural areas and three urban areas were visited and assessed: Atiba and Egbeda (rural) and Oyo West, Ogbomosho, and Ibadan North-East (urban).

Data Collection Tool: The PRISM framework and tools developed by MEASURE Evaluation was adopted for the study (Annex A). The tools were grouped into two parts, the performance assessment component and the organizational and behavioral assessment component. The performance assessment component was directed at the technical leads in the state and LGA HMIS offices, and the organizational and behavioral component was directed at every worker in the HMIS/ Monitoring and Evaluation (M&E) unit of the SMOH and the LGA health departments. All the facility level pages of the PRISM tools were excluded from this assessment as the scope of this assessment did not include assessing the facilities.

- Performance Assessment Component

  This part of the tools was targeted at the technical leads in the HMIS/ M&E unit of the SMOH and the LGA health department. It consists of four subcomponents:

  - Quality of data assessment form, assesses the quality of the data reported from the lower level (LGA for state and health facilities for the LGAs)
  - Use of information assessment form, assesses the ability of the unit to utilize information
  - RHIS management assessment form, assesses the availability of guidelines and processes for health data management.
  - Office checklist, assesses the availability of essential office equipment and other resources necessary for the optimal functioning of the DHIS v2.

- Organizational and Behavioral Assessment Component

  This component was targeted at every staff person of the HMIS unit at the state and LGA level, including the leads. It assesses the respondent's perspective of the organization's behavior with regard to how decisions are made and the general operations of the HMIS unit.

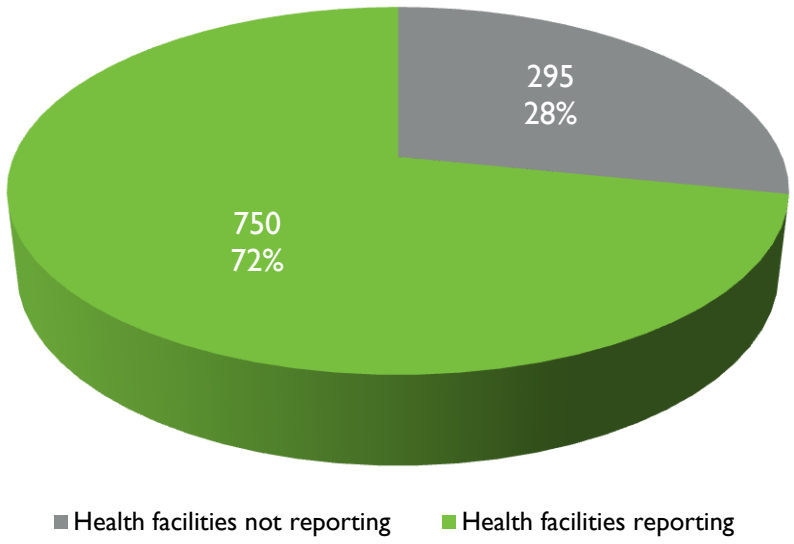
4. FINDINGS

4.1 STATE ASSESSMENT

4.1.1 QUALITY OF DATA ASSESSMENT

In Oyo state, all 33 LGAs submit reports to the state HMIS office. However, the completeness of the reports submitted is suboptimal. During the assessment, the team discovered that, of the 1,045 facilities required to submit monthly reports to the state HMIS unit through the LGAs, only 750 (72 percent) are actually reporting to the HMIS. Figure 2 shows the distribution of the health facilities reporting and those not reporting.

FIGURE 2: DISTRIBUTION OF HEALTH FACILITIES REPORTING AND NOT REPORTING TO THE HMIS IN OYO STATE



LGAs must submit reports to the states by the third week of the month. The state in turn reports to the national HMIS semiannually. The state HMIS office uses the DHIS 1.4 software to enter and process monthly data received from the LGAs. However, at the time of this assessment in late June 2012, the state had not yet compiled forms for April and May 2012. This prevented the assessment team from comparing the data on the paper forms with the electronic summaries. Nevertheless, the DHIS software that was installed on the central computer produced indicators for each facility catchment area, data summary reports for the LGA for February and March 2012, and comparisons among facilities, with state targets, types of services covered, and comparisons over time.

It is worth noting that the monthly report forms are not complex and are not difficult to follow and the data software is user friendly, as noted by the state HMIS officer.

4.1.2 USE OF INFORMATION

The state HMIS office compiles data submitted by LGAs into a single report for the state. The HMIS office posts data on the maternal mortality rate, under-five and infant mortality rate, facility utilization, and disease distribution on tables, graphs, and maps mounted on the walls. Also displayed is a summary of the demographic information by various population groups. However, the team did not find any recent health indicators. In some cases, the information that was displayed dated as far back as 2007 and 2009.

The state provides annual feedback to the LGAs as highlighted in the annual reports. These reports contain guidelines and recommendations for actions on mobilization/shifting of resources based on comparison by facilities. Information on advocacy for more resources by comparing performance by LGA, human resources, and logistics, as well as acknowledgement based on percentage of LGAs showing performance by month to month comparisons, are also highlighted in the reports.

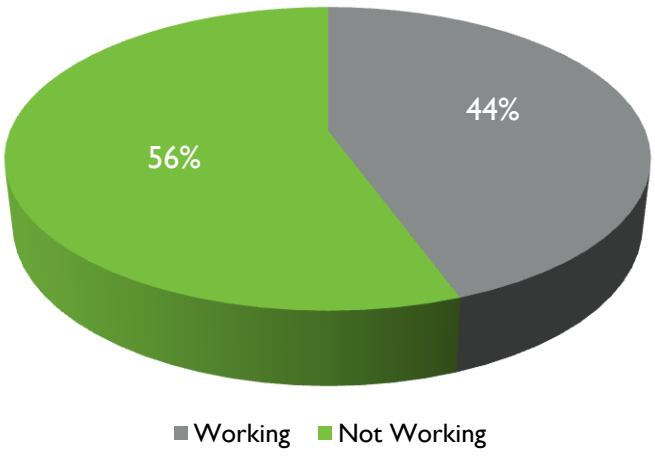
The state office holds routine meetings to review managerial and administrative matters. Although these meetings are scheduled to be held monthly, in the three months preceding the visit, emergencies resulted in five being held. Official minutes of the meetings, which are filed with the department's secretary, record discussions and decisions on management of HMIS, follow-up actions on the decisions made during the previous meetings, and HMIS-related issues needing action at the state level. The meeting records do not include information and decisions on RHIS findings such as patient utilization, disease data, service coverage, and medicine stock outs.

The state office uses data and research findings for policy making, health system strengthening, and general health service management. For example, in Saki West LGA, there was a high incidence of typhoid fever and data obtained from the LGA was used to encourage policymakers to provide resources to improve the supply of potable water, thereby reducing the cases of typhoid fever in the LGA.

4.1.3 OFFICE EQUIPMENT CHECKLIST

The assessment showed that about 44 percent, (four) of the computers in the Oyo state office are in working condition. As much as 56 percent (five) of the computers are not in working condition and need to be upgraded or replaced. Figure 3 shows the percentage of computers in working condition at the state office.

FIGURE 3: DISTRIBUTION OF OPERATIONAL AND NONOPERATIONAL COMPUTERS AT THE OYO STATE HMIS OFFICE



During the team's visit, data backup units such as CDs and USB hard drives were available. Only one of the three printers available was working. The office was using a point-to-point connection and not a USB modem; however, the Internet connection had not been in service for months due to lack of funds to pay for the service.

The state office has no continuous electricity supply; power supply is interrupted on a daily basis. There are four battery-charged Uninterrupted Power Supply (UPS) units at the office of which only one is functional. In addition to the UPS unit, the office has a functioning generator used whenever there is an outage.

4.1.4 RHIS MANAGEMENT ASSESSMENT

The state office does not have any documentation on the existence of a RHIS mission statement, nor does it have a management structure in place for dealing with RHIS-related strategic and policy decisions at the state level. It also does not have an updated LGA health management organizational chart displayed in a prominent position. However, the HMIS officer was able to provide a distribution list of health registers distributed to the LGAs. The state office did have an RHIS situation analysis report less than three years old, an RHIS five-year plan that included state-level targets, HMIS training guidelines, and an RHIS standards document available. Further assessment of the state office revealed an annual schedule for planned training on HMIS for LGAs.

Supervision of LGAs is of critical importance at the state office. Findings showed that the HMIS office has an RHIS supervisory checklist and develops follow-up reports after supervision. However, the state office lacks a schedule for RHIS supervisory visit.

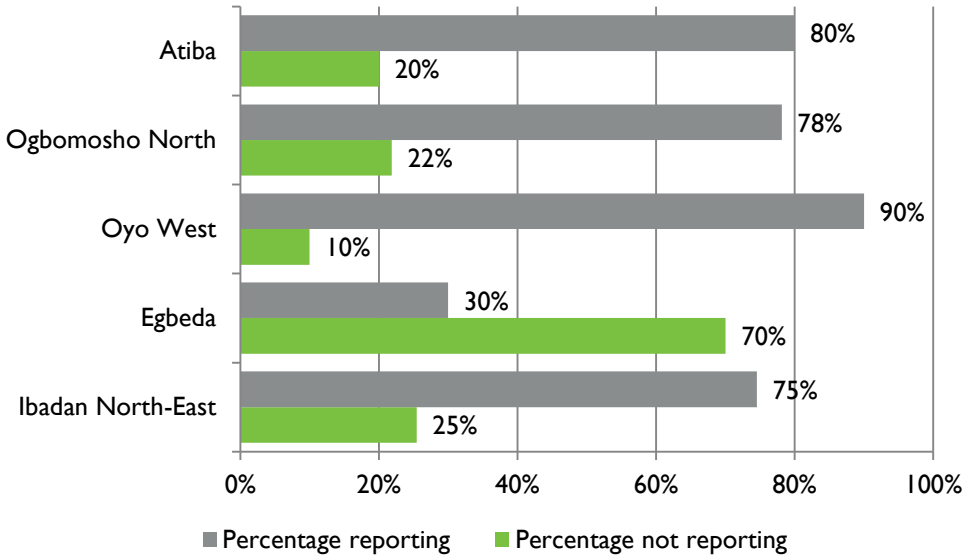
The state office generates funds for implementation of RHIS-related activities through partners such as AIDS Prevention Initiative in Nigeria (APIN) and the Association of Local Governments of Nigeria (ALGON). The HMIS officer charges a small token of N100 from researchers and students who want to collect health information data from the office. This token is stipulated in the policy documents.

4.2 LOCAL GOVERNMENT AREAS ASSESSMENT

4.2.1 QUALITY OF DATA

Findings indicate that the percentage of health facilities reporting into the HMIS at the LGA level ranged from 75 percent of expected health facilities in Ibadan North-East to 90 percent of expected health facilities in Oyo West. However, more than 70 percent of the health facilities in Egbeda enrolled in the HMIS are not reporting into it. Figure 4 shows a bar chart of health facilities reporting and not reporting to HMIS by LGA in Oyo state.

FIGURE 4: PERCENTAGES OF HEALTH FACILITIES REPORTING AND NOT REPORTING



All LGAs have a deadline for the receipt of the RHIS monthly report from the facilities. Four LGAs require the data at the end of the first week following the reporting month, while Oyo West requires receipt at the end of the second week of the following month.

None of the LGAs visited has DHIS v1 software available to enter and process data; therefore, they are unable to automatically compute indicators for each facility by catchment area or produce a data summary report for the LGA and types of service coverage.

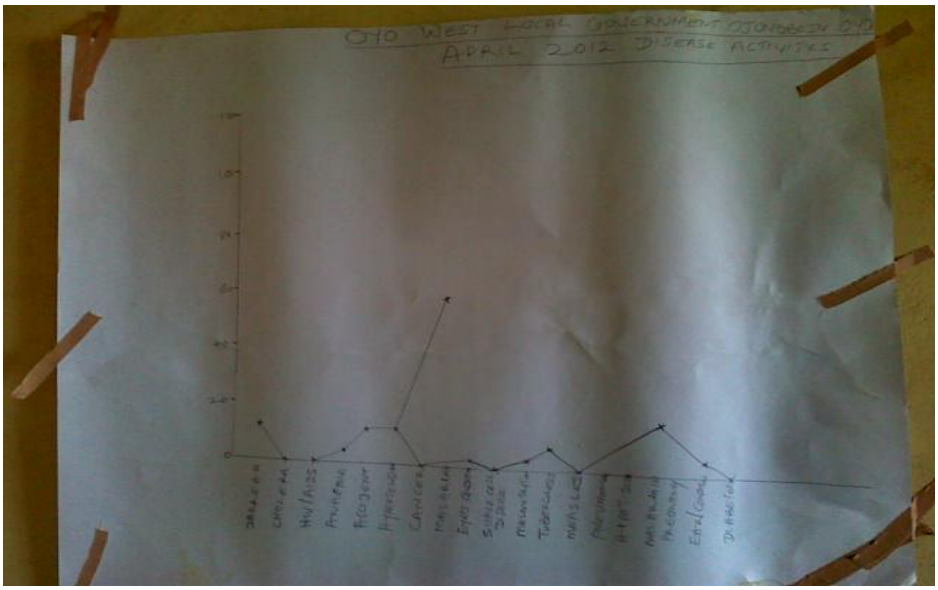
Eighty percent of the LGAs reported that the RHIS procedure manual is user friendly; Atiba LGA was the lone exception. All LGAs agreed that the monthly report forms are not complex and are easy to follow. With regards to utilization of data software, 60 percent find the DHIS software user friendly and easy to manage; Ibadan North-East and Atiba LGAs are the exceptions. It is worth noting that although the LGAs do not have the DHIS software installed, they have been exposed to the DHIS through training workshops. All LGA managers and senior management in Oyo West and Atiba LGAs have Internet access to needed information.

4.2.2 USE OF INFORMATION

All LGAs compile the RHIS data submitted by their health facilities. About 40 percent of LGAs issue a report containing RHIS information. For example, Ibadan North-East LGA issues a monthly report on immunization, ANC, delivery, family planning and growth, and monitoring while Egbeda LGA issues a biannual report of activities on Onchocerciasis. None of the LGAs sends a feedback report using RHIS information to health facilities except Egbeda LGA, and such a report was available for the last three months.

The display of information was not uniform across LGAs. Only 40 percent (Ogbomosho and Egbeda) displayed information related to mother and child health, facility utilization, and disease surveillance, and this information was not up to date. Oyo West displayed information about disease surveillance in the LGA. Egbeda LGA displayed a map of its catchment area.

FIGURE 5: CHART SHOWING IMMUNIZATIONS DELIVERED IN OYO WEST LGA



Most LGAs lacked any form of quarterly or yearly feedback on RHIS data, which could have provided some guidelines or recommendations for action. They do, however, hold routine meetings to review managerial or administrative matters. All LGAs are expected to hold monthly meetings; however, as much as 60 percent have held only two meetings in the last three months. Egbeda and Oyo West LGAs have held regular monthly meetings. Oyo West and Ogbomosho North LGAs (40 percent of LGAs) have official records of the management meetings held to review managerial or administrative matters. In Oyo West LGAs, the reports include topics on management of RHIS, discussion of RHIS findings, decisions and actions taken on RHIS findings, and RHIS-related issues referred to the state level for action. Ogbomosho North's reports included information on follow-up action taken on decisions made during previous meetings held at the LGA Secretariat.

None of the LGAs' RHIS offices had published a newsletter or report in the three months preceding the visit to show success stories related to use of RHIS information. About 60 percent of the LGAs could give examples of how they used RHIS information for health system strengthening; HMIS officers in Atiba and Ibadan North-East LGAs could not. Examples included the need to inform the government when a high incidence of malaria cases occurs and reporting an incidence of measles to the Disease Notification and Surveillance Office to track cases at the health facilities. RHIS information can also be used for planning and health promotion in the local government.

4.2.3 OFFICE EQUIPMENT CHECKLIST

The use of computers can assist in strengthening health information data management at the LGA health departments. An assessment of the LGAs' HMIS offices showed that Oyo West and Egbeda have no desktop computer available for use, whereas Ibadan North-East, Ogbomosho, and Atiba LGAs have one computer each. The state HMIS officer informed the team that the state government gave desktop computers to 17 LGAs on January 21, 2009. This distribution was based on attendance at HMIS trainings, timely submission of monthly reports, and capacity to print HMIS forms at the LGA level. Table 2 shows the availability of computers at the LGA level. The distribution can be found in Table 2.

TABLE 2: AVAILABILITY OF COMPUTERS BY LGAS IN OYO STATE

LGAs	Total	Functional
Oyo West	0	0
Ogbomosho North	1	1
Atiba	1	1
Ibadan North-East	2	1
Egbeda	0	0

None of the LGAs had data backup units for storage of information. Furthermore, none of them had any modems or access to the Internet to send or receive information. Monthly data from health facilities are sent to the state office manually.

Regarding utilities, all LGAs had their electricity supply interrupted on a daily basis, but 20 percent of LGAs have an alternative supply of power.

LGAs need a constant supply of HMIS registers to facilitate data collection on a continuous basis. In Oyo state, 40 percent of the LGAs have run out of the HMIS registers in the last 12 months. For instance, Ogbomosho North and Egbeda ran out of registers on immunization, HIV counseling and testing, delivery, and family planning. Reasons given were insufficient funds to print new forms, inadequate supply from the state HMIS office, and failure of LGA to take responsibility for printing new forms.

4.2.4 RHIS MANAGEMENT ASSESSMENT

Findings showed that none of the LGAs had their RHIS mission displayed nor did they have any management structure for dealing with RHIS-related strategic and policy decisions at the LGA level. Eighty percent of the LGAs did not have an updated LGA health management organizational chart showing who is responsible for carrying out RHIS functions; Atiba was the exception. Moreover, 60 percent of the LGAs have a distribution list and documentation of RHIS past monthly reports at the LGA level; Atiba and Ogbomosho North LGAs have an up-to-date distribution list only. All LGAs except Ibadan North-East have an RHIS situation analysis report less than three years old. Furthermore, Atiba is the only LGA that has a copy of the RHIS standards and performance improvement tools.

No LGAs has an RHIS supervisory checklist, and Ogbomosho North is the only LGA with a schedule for RHIS supervisory visits.

4.3 ORGANIZATIONAL AND BEHAVIORAL ASSESSMENT

The organizational and behavioral assessment will assist in developing interventions for improving information systems and use of information. Findings are presented in Table 3, which shows an analysis from the organizational and behavioral assessment tool based on responses from the state and LGA HMIS staff interviewed during the assessment exercise.

Thirty-three percent of respondents believed that political interference affects decisions in the health department. These decisions affect funds for supervision and distribution of HMIS registers. Approximately 50 percent agreed that superiors discuss conflicts openly to resolve them while 33 percent disagreed. All respondents reported that data quality is emphasized in monthly reports and superiors seek feedback from concerned persons. Approximately 50 percent of the respondents

believed that staff are rewarded for good work. The table also shows that about 83 percent of participants believed that staff set appropriate and doable targets for their performance and feel guilty for not accomplishing the set targets and performance. Less than 50 percent of the respondents are able to say no to superiors and colleagues for demands and decisions not supported by evidence.

TABLE 3: ORGANIZATIONAL AND BEHAVIORAL ASSESSMENT TOOL

In health department, decisions are based on:				
	Disagree (%)	Neutral (%)	Agree (%)	Total (%)
Personal liking	4 (67%)	1 (17%)	1 (17%)	6 (100%)
Superiors' directives	0	0	6 (100%)	6 (100%)
Evidence/facts	0	0	6 (100%)	6 (100%)
Political interference	3 (50%)	1 (17%)	2 (33%)	6 (100%)
Comparing data with strategic health objectives	0	0	6 (100%)	6 (100%)
Health needs	0	0	6 (100%)	6 (100%)
Cost considerations	0	0	6 (100%)	6 (100%)

In health department, superiors:				
	Disagree (%)	Neutral (%)	Agree (%)	Total (%)
Seek feedback from concerned persons	0	0	6 (100%)	6 (100%)
Emphasize data quality in monthly reports	0	0	6 (100%)	6 (100%)
Discuss conflicts openly to resolve them	2 (33%)	1(17%)	3 (50%)	6 (100%)
Seek feedback from concerned community	0	0	6 (100%)	6 (100%)
Use HMIS data for setting targets and monitoring	0	0	6 (100%)	6 (100%)
Check data quality at the facility and higher level regularly	0	0	6 (100%)	6 (100%)
Provide regular feedback to their staff through regular report based on evidence	1 (17%)	0	5 (83%)	6 (100%)
Report on data accuracy regularly	0	0	6 (100%)	6 (100%)
Are punctual	0	0	6 (100%)	6 (100%)
Document their activities and keep records	0	0	6 (100%)	6 (100%)
Feel committed to improving health status of the target population	0	0	6 (100%)	6 (100%)
Set appropriate and doable target of their performance	0	1 (17%)	5 (83%)	6 (100%)
Feel guilty for not accomplishing the set target/performance	0	1 (17%)	5 (83%)	6 (100%)
Are rewarded for good work	0	3 (50%)	3 (50%)	6 (100%)

In health department, superiors:				
	Disagree (%)	Neutral (%)	Agree (%)	Total (%)
Use HMIS data for day-to-day management of the facility and LGA/ state	0	1 (17%)	5 (83%)	6 (100%)
Display data for monitoring their set target	0	0	6 (100%)	6 (100%)
Can gather data to find the root cause(s) of the problem	0	0	6 (100%)	6 (100%)
Can develop appropriate criteria for selecting interventions for a given problem	0	1 (17%)	5 (83%)	6 (100%)
Can develop appropriate outcomes for a particular intervention	0	1 (17%)	5 (83%)	6 (100%)
Can evaluate whether the targets or outcomes have been achieved	0	1 (17%)	5 (83%)	6 (100%)
Are empowered to make decisions	1 (17%)	1 (17%)	4 (67%)	6 (100%)
Able to say no to superiors and colleagues for demands/decisions not supported by evidence	2 (33%)	2 (33%)	2 (33%)	6 (100%)
Are made accountable for poor performance	0	0	6 (100%)	6 (100%)
Use HMIS data for community education and mobilization	0	0	6 (100%)	6 (100%)
Admit mistakes for taking corrective actions	0	1 (17%)	5 (83%)	6 (100%)

5. CHALLENGES

Oyo state noted some specific challenges with regard to the lack of proficiency in sending data electronically, maintenance of desktop computers, issues with DHIS software installation, and limited capacity-building opportunities. The state HMIS officer also highlighted the lengthy time taken to enter data, inadequate human resources to manage data entry and analysis, and a lack of financial resources to print HMIS forms for the LGAs. These issues can be classified as technical, financial, and human resource related.

Human Resource Challenges:

- Low-level skills on computer use, including the use of the DHIS software and computer maintenance
- Lack of permanent personnel for data entry and analysis, resulting in the state office mostly relying on temporary workers such as National Youth Service Corp members who are serving a mandatory one-year national service and will disengage after the year is over. As a result, staff turnover is high.

Technical Challenges:

- DHIS not installed at the LGAs
- Internet access is not available at any of the LGA offices
- Lack of feedback to health facilities by the LGAs and to LGAs by the SMOH
- Lack of standardized format for compilation and storage of monthly reports from LGAs
- No updated summary display charts available at the LGA offices visited
- Lack of proper maintenance of registers
- Noncompliance of private hospitals in submitting data to the LGA

Financial Challenges:

- Lack of funds to support site visits to monitor, verify data reported, and supervise health facilities by LGA personnel and LGAs by state personnel
- Insufficient funds and logistics print forms at the state and LGA levels
- No funds for capacity development opportunities
- Poor infrastructures and office accommodations for some HMIS officers.

Despite these challenges, the state HMIS office conducts certain practices, such as the motivation of HMIS LGA officers that meet certain criteria, which are worthy of praise. The criteria for selecting these officers are based on attendance at training, timely reporting, and data validity from the health facilities.

6. RECOMMENDATIONS

The team offers the following recommendations for HMIS as a result of the assessment:

Immediate Priorities

- Responsible parties should print and distribute revised HMIS forms/registers to LGA HMIS units for further distribution to health facilities
- Develop specific processes that guide the collection and transmission of data from source of production to the point of use
- Build a network between HMIS personnel across the LGAs to provide an opportunity to learn from one another
- Conduct advocacy visits to reach out to LGA chairmen and policymakers to discuss the need to support the HMIS unit in their activities
- Upgrade the memory capacity of computers, install antivirus softwares, repair and procure new high memory computers and printers

Intermediate and Long-term Priorities

- Conduct basic HMIS training on the use of the DHIS for LGAs and state HMIS officers, and refresher trainings on M&E
- Strengthen the link between LGA HMIS units and health facilities
- Create a seed stock of HMIS forms and registers for at least six months and develop processes for the replenishment when stock reduces to three months' supply
- Provide incentives to LGAs for high-quality reports
- Improve general IT capacity at the Ministry of Health and provide funds to support the LGAs
- Advocate to the SMOH and LGA leadership to improve funding for HMIS and to make policies based on evidence generated from the HMIS.

7. CONCLUSION

Based on the assessment, we conclude that Oyo state has a functional HMIS. The system's efficiency, however, is suboptimal and could be significantly improved. We identified several issues concerning the quality of the data received at the SMOH, which make its use for decision making limited. The state needs to take steps specifically directed at plugging the gaps in RHIS management which include printing and distributing forms and registers. In addition, the state and the LGA authorities need to clearly define their roles and responsibilities in HMIS hierarchy and management.

Working computers are not readily available in the LGAs. Three out of the five LGAs visited have only one functioning computer in place – a necessary commodity for the DHIS v2 software that is under consideration. Likewise, Internet connectivity is not readily available in any of the LGAs that we visited despite it being needed for the utilization and optimization of the software. Furthermore, the state HMIS office is overwhelmed with processing paper forms and, as a result, there is a backlog of data yet to be entered into the system and analyzed. This limits the timeliness of the information that can be mined from the data. If deployed, DHIS v2 will enable remote data entry at the LGA offices but this will only be effective if the necessary resources and processes are in place for the system to function optimally. Furthermore, a culture of maintenance of commodities needs to be entrenched in the two levels of government.

Commitment from policymakers is paramount to the success of any HMIS. Policymakers who base their decisions on evidence will demand up-to-date health data. This in turn will drive investment in improving HMIS efficiency.

Human resource policies that promote engaging highly qualified individuals and reward hard work should be embraced by the LGAs and the SMOH. Opportunities for training and retraining should also be well documented in the state and LGA policies.

Although these challenges exist, the state has some best practices worth mentioning, one of which is to motivate HMIS officers who perform efficiently either through commendation or provision of incentives to their units. Despite the financial challenges noted, some level of supervision from the state level to the LGA HMIS officers was being carried out and should be encouraged to continue and be scaled up.

8. REFERENCES

Family Health International. 2008. Supporting Nigeria's Efforts to Transform Data Management. http://www.fhi360.org/en/CountryProfiles/Nigeria/res_DHIS.htm

Federal Ministry of Health (FMOH). 2010. *National HIV Sero-prevalence Sentinel Survey 2010*. Abuja, Nigeria: Federal Ministry of Health.

Federal Republic of Nigeria Official Gazette. 2009. Legal notice on publication of 2006 census final results. Official Gazette of the Federal Republic of Nigeria 96, No. 2, February.

National Population Commission (NPC) [Nigeria] and ICF Macro. 2009. *Nigeria Demographic and Health Survey 2008*. Abuja, Nigeria: National Population Commission and ICF Macro.

Oyo State Ministry of Health, Department of Planning, Research and Statistics. N.d. *Oyo State Comprehensive Bulletin*. Health System Development Project II, HMIS Unit Secretariat, Ibadan.

MEASURE Evaluation. 2011. *Performance of Routine Information System Management (PRISM) Tools*. University of North Carolina at Chapel Hill, Carolina Population Center. Available at http://www.cpc.unc.edu/measure/publications/ms-11-46d