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

September 2012

This publication was produced for review by the United States Agency for International Development. It was prepared by Olusesan A. Makinde, Samson B. Adebayo, Oluwaseun Adeleke, Elizabeth M. Ohadi, Awa D. Dieng, John S. Osika for Health Systems 20/20 Project.

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September 2012

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Cooperative Agreement No.: GHS-A-00-06-00010-00

Submitted to: Scott Stewart, AOTR
Health Systems Division
Office of Health, Infectious Disease and Nutrition
Bureau for Global Health
United States Agency for International Development

Recommended Citation: Makinde A., Olusesan, Adebayo, Samson B., Adeleke, Oluwaseun, Ohadi, Elizabeth M., Dieng, Awa D., Osika, John S. September 2012. *Assessment of the Routine Health Management Information System in Taraba State, Federal Republic of Nigeria.* Bethesda, MD: Health Systems 20/20 project, Abt Associates Inc.

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ASSESSMENT OF THE ROUTINE HEALTH MANAGEMENT INFORMATION SYSTEM IN TARABA 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 Systems Development Project
IT	Information Technology
LGAs	Local Government Areas
M&E	Monitoring and Evaluation
PRISM	Performance for Routine Information System Management
RHIS	Routine Health Information System
SMOH	State Ministry of Health
UPS	Uninterrupted Power Supply
USAID	United States Agency for International Development

ACKNOWLEDGMENTS

We would like to thank the staff of the Federal Ministry of Health, particularly Dr. Akin Oyemakinde and Mr. Adeleke Balogun; the staff of the Taraba State Ministry of Health, particularly the Permanent Secretary, Dr. Phillip Duwe; and all the respondents at the local government areas visited. Without their time and commitment, this assessment would not have been possible. Our profound appreciation also goes to Mr. Duke Ogbokor and Dr. Garoma Kena of USAID, Abuja Office, who provided the technical support for this project. Finally, we thank our colleague Mr. Michael Rodriguez who helped review the document.

We acknowledge MEASURE Evaluation (http://www.cpc.unc.edu/measure/publications/ms-11-46d), the developers of the PRISM Framework and tools used in this assessment

All photographs appearing in this report are credited to Samson B. Adebayo, Ph.D.

EXECUTIVE SUMMARY

The goal of this assessment was to evaluate the Routine Health Information System (RHIS) in Taraba 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 health data management but owing to an upgrade of the software, is considering 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.

Policymakers require timely, relevant, accurate, and up-to-date health information from multiple sources to provide the necessary evidence upon which policies can be made. This is essential in health planning and monitoring of the health status of the population. The ultimate outcome of the exercise is to identify the risks that may pose a challenge for the easy flow of data from the local government to the state and the FMOH via a unified web-enabled HMIS platform. The authors hope Taraba state will use this report to put in place a strategy aimed at realigning the RHIS in the state.

We conducted the assessment during the week of July 2, 2012, in the Taraba SMOH and five LGA health departments. A total of six management assessment questionnaires were administered, one to the HMIS/Monitoring and Evaluation (M&E) officer at the state and one each to the five officers at the LGAs. Data from interviews were recorded 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 was also conducted. A critical aspect of the interview process was the gathering of information on the challenges faced by HMIS personnel. The principal findings and priority recommendations are presented below.

Infrastructure for basic information technology such as computers, existed in all of the LGAs visited. However, the level of utilization is low in some LGAs. Over the last four years, the state has received significant support from the Health Systems Development Project (HSDP) II, a World Bank-assisted project. The project recently ended but has provided several benefits during its lifetime, including the provision of laptops, printers with Internet modems to all 16 LGAs, capacity building on M&E, procurement of motorcycles for all LGA HMIS officers for easy mobility while conducting their duties, printing of HMIS registers and forms, and supportive supervision on data quality. Four (25 percent) LGAs out of 16 submit their data electronically via the Internet. The remaining LGAs face several challenges such as low proficiency in computer use and poor Internet connectivity. Currently, the state receives support from the Global Fund to Fight AIDS, Tuberculosis and Malaria and Family Health International 360 to strengthen HMIS activities in 25 health facilities in five LGAs: Lau, Gassol, Kurmi, Jalingo, and Takum. These agencies assist in printing forms utilized by the health facilities and provide technical assistance through workshops on HMIS tools and training on data quality assurance.

The state HMIS office has a poor record-keeping system and does not utilize the DHIS software. It is apparent, based on the acute shortage of resources following the close out of the HSDP II project in May 2012, that the HMIS office has not properly planned for its post-HSDP needs.

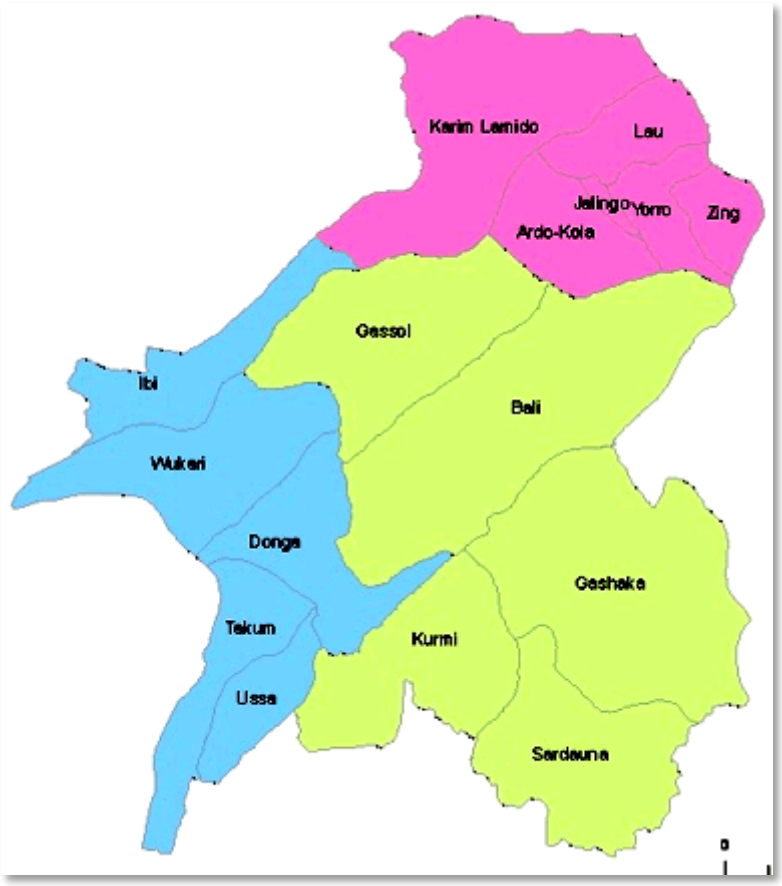
Problems related to lack of support from some local government leaders, limited capacity-building opportunities, and lack of equipment such as computers are major challenges respondents raised during the interviews. The HMIS officers at the state level also highlighted poor overall funding of the unit, limited training on use of DHIS 1.4 software, and unavailability of HMIS forms.

Based on our findings from this assessment, we conclude that significant planning, led by the government, is necessary if the proposed DHIS v2 deployment is to have a meaningful impact in the state. Reliance on external support must be synchronized with increased government funding so that Taraba state will not regress when donor support ends.

1. BACKGROUND

Taraba state was created on August 27, 1991, from the defunct Gongola state. The state derives its name from one of the three major rivers in the area and covers a land mass of 59,400 square kilometers. It is made up of 16 local government areas (LGAs) and bordered by Bauchi and Gombe states in the northeast, Adamawa on the east, Plateau state in the northwest, and both Nasarawa and Benue states to the west. Taraba also shares an international boundary with the Federal Republic of Cameroun to the south and southeast. Figure 1 shows the map of Taraba state and its LGAs.

FIGURE 1: MAP OF TARABA STATE



Taraba state has a population of 2,300,736 people, with a growth rate of 2.9 percent, according to the 2006 National Census (Federal Republic of Nigeria 2009). Table 1 describes some health indicators found in Taraba state.

TABLE 1: BASIC HEALTH INDICATORS FOR TARABA STATE

Indicator	Rate
Infant Mortality Rate*	109/1,000 live births
Under 5 mortality rate*	222/1,000 live births
HIV prevalence**	5.8%
Women who gave birth in the past five years and receive antenatal care from a skilled provider*	49%

*North-East 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 routine health data. At the time of selection in 2006, the developers were deploying the v1 of the software, which was developed on a Microsoft Access background database (Family Health International 2008). DHIS v1 was found, however, 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 be operating a different instance of the database. Furthermore, 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 LGAs 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

Sampling: The assessment exercise was designed through a consultative process with the Taraba state HMIS/M&E officer. LGAs were selected using a purposive sampling technique considering time constraints, terrain, and security issues in the state. Working with the state HMIS officer, the team drew up a complete list of all LGAs by senatorial zones in Taraba state by rural/urban variation. The survey team selected to visit and assess five of the 16 LGAs: two rural and three urban. The five LGAs were Bali, Gasol, Wukari, Zing, and Lau.

Site Assessment: On arrival in Taraba state, the team made courtesy visits to the persons listed below to inform them of the purpose of the assessment:

- Permanent Secretary of Health, Taraba state
- Project Manager, HSDP, Taraba state

A copy of the letter given by Health Systems 20/20 was tendered to the offices.

Data Collection Tool: The PRISM framework and tools developed by MEASURE Evaluation was adopted for the study. The tools were grouped down 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 unit of the SMOH and the LGA health department. 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 were 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 equipment 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.

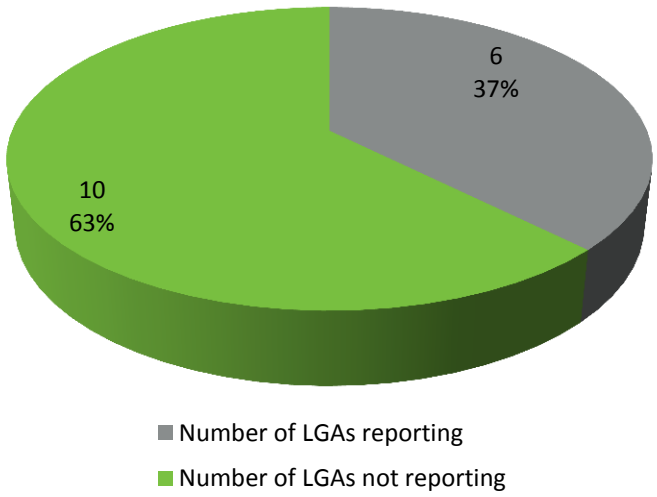
4. FINDINGS

4.1 STATE ASSESSMENT

4.1.1 QUALITY OF DATA ASSESSMENT

The state HMIS office conformed to keeping a copy of RHIS monthly reports received from the LGA health departments. Only six of the 16 local governments were routinely reporting their data to the SMOH. Figure 2 shows the distribution. The LGAs had a deadline of the end of the second week of every month to submit all RHIS data. However, the state HMIS office did not routinely record dates that LGA reports were received. A DHIS 1.4 database for archiving and processing data exists at the SMOH, however, its use for data archiving and automated report preparation is not optimally explored. As a consequence, the ability to generate indicators automatically is hindered despite the staff's comments that the software was user friendly.

FIGURE 2: PERCENTAGE DISTRIBUTION OF LOCAL GOVERNMENT AREAS REPORTING INTO RHIS IN TARABA STATE



4.1.2 USE OF INFORMATION ON RHIS

Findings revealed that the SMOH compiles RHIS data that are submitted by the facilities. Unfortunately, the SMOH hardly uses the data for its reports. As a consequence, no feedback is provided to the LGAs or the facilities that reported within the reporting period.

No indicator tables or charts were displayed at the state HMIS office. In addition, the office does not have a map of catchment areas in the state that it oversees. The HMIS unit has a statutory requirement for routine meetings to be held four times a year. Unfortunately, no meeting had been held in the three months preceding the assessment.

4.1.3 OFFICE EQUIPMENT CHECKLIST

Three computers were available at the state office and all three were functional at the time of the assessment. The state HMIS office lacked a continuous supply of electricity, and respondents stated that electricity is interrupted on a daily basis. The room where the computers are kept is air conditioned.

Data backup units such as CDs and USB hard drives were available. One printer and one USB modem were available at the state office. Although the state office has an Uninterrupted Power Supply (UPS) unit, this unit was not functional when the survey team visited. The two generators attached to the office were also out of order at the time of the assessment. The office does not have active Internet access for submitting reports remotely or communicating with other officers via email because the USB modem did not have an active subscription. However, the HMIS officer occasionally makes use of his personal USB modem to complete his official tasks.

4.1.4 RHIS MANAGEMENT ASSESSMENT

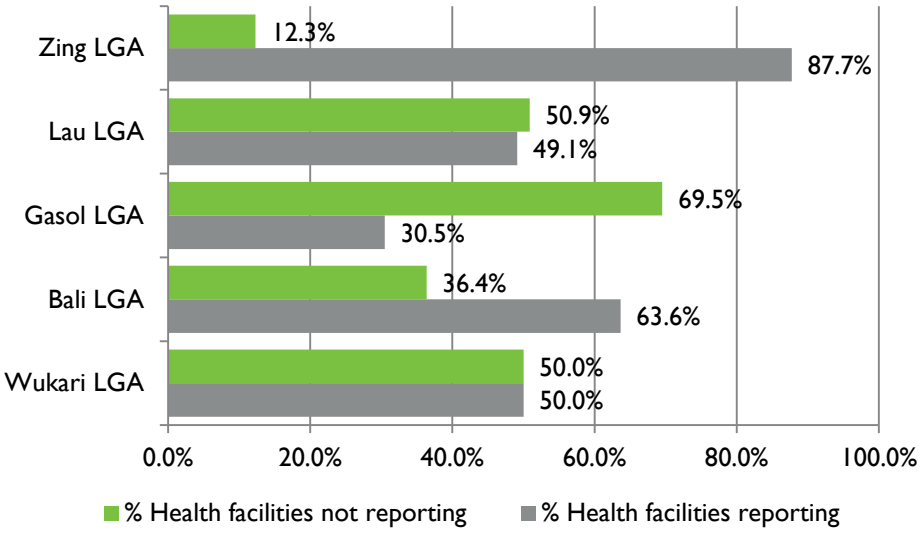
At the state HMIS office, no mission statement was displayed to help motivate the staff. In addition, the state office had no well-outlined management structure in place to deal with RHIS-related strategic and policy decisions. No organizational chart was displayed to show reporting relationships and the leadership of the unit. The state can be commended, however, for its RHIS training manual that has mechanisms for on-the-job training concerning RHIS-related activities. The department did not have a situational analysis report less than three years old; nor did the department have a schedule for supervisory visits. Following key informant interviews, it was evident that HMIS officers did not routinely conduct supervisory visits despite its requirement to the LGAs or the facilities under their jurisdiction.

4.2 LGA ASSESSMENT

4.2.1 DATA QUALITY ASSESSMENT

All the LGAs assessed kept copies of the RHIS monthly reports that were received from facilities. Overall, 183 facilities out of the 350 facilities that should be reporting were actually reporting at the time of the assessment. Figure 3 presents findings on the proportion of facilities reporting disaggregated by the LGAs assessed. In Zing LGA, 88 percent of the facilities were reporting while only 31 percent of facilities in Gasol LGA were reporting. All the LGAs visited have given the facilities a deadline for the receipt of their reports; however, these due dates varied from one LGA to the other. None of the LGAs kept records of the dates these reports were actually received. Thus, it was impossible to assess the timeliness of the reports reaching the LGAs.

FIGURE 3: PERCENTAGE DISTRIBUTION OF HEALTH FACILITIES REPORTING RHIS REPORTS AND NOT REPORTING



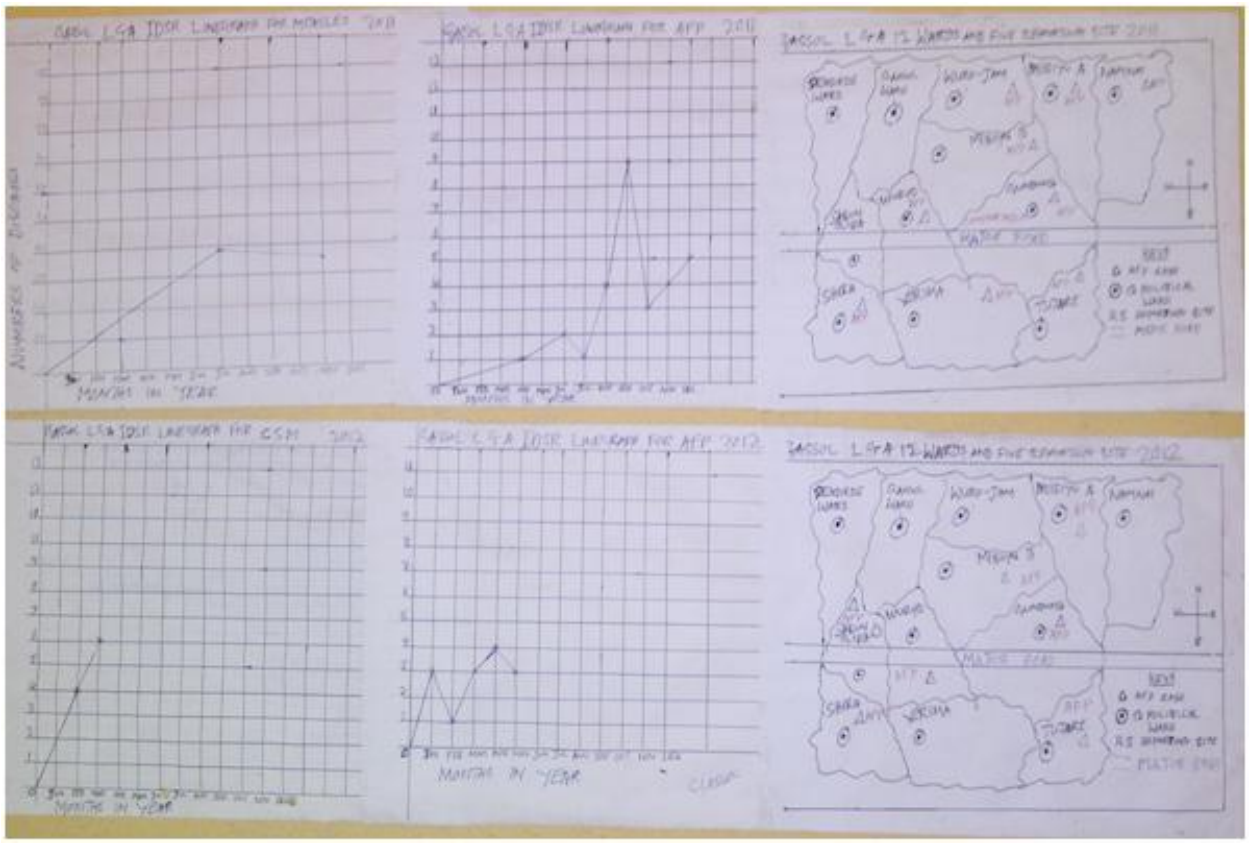
4.2.2 USE OF INFORMATION ON RHIS

All the LGAs visited compile the RHIS data submitted by the facilities. As was observed at the SMOH, none of the LGAs issues any report containing data or information from the RHIS. Therefore, no feedback is provided to the facilities that supply the data. Only Gasol and Zing LGAs have maps of catchment areas (Figure 4). Although a summary of demographic information is not available in all the LGAs, some charts and maps were displayed in Gasol LGA (Figure 5).

All the LGAs visited have dates for routine meetings. Most of the LGAs (88 percent) have set a target to meet monthly while Bali holds meetings only quarterly. Only Bali, Gasol, and Lau LGAs achieved their meeting targets, which the team observed from reviewing meeting notes for the three months prior to the assessment. Lau met more often than its proposed plan because of an emergency meeting held within the referenced timeframe. Wukari and Zing LGAs could not achieve their targets.

FIGURE 4: MAP OF CATCHMENT AREA IN ZING LGA

FIGURE 5: CHARTS DISPLAYED IN GASOL LGA



4.2.3 OFFICE EQUIPMENT CHECKLIST

During the assessment, the team found all five LGAs had either one or two functional computers. Wukari and Zing LGAs had two computers each while Bali, Gasol, and Lau LGAs had one. There is no continuous supply of electricity in any of the LGAs visited. While electricity is interrupted daily in Lau and Zing LGAs, it is interrupted occasionally in the remaining LGAs. Bali, Wukari, and Zing LGAs have functioning backup generators to substitute for the public power company whenever there is an outage. The rooms where the computers are kept are not air conditioned. Backup units were available in all LGAs except Lau. Of the five LGAs visited, it was commendable to find that four (80 percent) had access to the Internet. Only Gasol LGA did not have Internet access. Table 2 lists all the office equipment available at the LGA offices and what was functional at the time of the assessment.

TABLE 2: LIST OF EQUIPMENT AVAILABLE IN THE LGA OFFICES

LGA	Equipment	Quantity Available	Quantity Functional
Bali	Computers	1	1
	Printers	1	1
	Modems	1	1
	UPS	0	0
	Generators	1	1
Lau	Computers	1	1
	Printers	1	0
	Modems	1	0
	UPS	0	0
	Generators	1	0
Zing	Computers	2	2
	Printers	1	1
	Modems	1	1
	UPS	0	0
	Generators	1	1
Wukari	Computers	2	2
	Printers	1	1
	Modems	1	1
	UPS	1	0
	Generators	1	1
Gasol	Computers	1	1
	Printers	1	1
	Modems	0	0
	UPS	0	0
	Generators	1	0

4.2.4 RHIS MANAGEMENT ASSESSMENT

The LGA offices had no management structure for dealing with RHIS-related strategic and policy decisions. All the LGAs visited had RHIS training manuals; however, only Gasol LGA had mechanisms for on-the-job training on RHIS-related activities. Only Gasol and Wukari LGAs had a distribution list and documentation of those who had received previous performance reports. None of the LGAs had a situation analysis report that was less than three years old. Lau and Gasol had schedules for supervisory visits and follow-up reports to present evidence that these visits had actually taken place. Although Zing LGA had a schedule for supervisory visits, there was no evidence that these visits were actually being carried out.

4.3 ORGANIZATIONAL AND BEHAVIORAL ASSESSMENT

Individual perspectives on the organization's use of data and behavior are discussed in this section. Table 3 presents findings on this assessment. Eighty-three percent of the respondents agree that decisions are based on the superiors' directives, though many (67 percent) also agree that decisions are based on evidence and facts. All (100 percent) agreed that superiors seek feedback from concerned persons but 50 percent of the respondents do not agree that superiors discuss problems openly to address them. This is a serious condition as conflicts tend to grow silently and may limit the progress of the unit. Only half of the respondents agree that staff document their activities and keep records. Since the respondents are from the HMIS units that deal daily with health records, it is expected that documentation will be natural amongst such professionals. Findings suggest otherwise and thus, it is necessary to plan to change such behaviors amongst HMIS staff in the state.

TABLE 3: ORGANIZATIONAL AND BEHAVIORAL ASSESSMENT FINDINGS

In health departments, decisions are based on	Disagree (%)	Neutral (%)	Agree (%)	No Response (%)	Total
Personal liking (D1)	1 (17%)	0	4 (67%)	1 (17%)	6
Superiors' directives (D2)	0	0	5 (83%)	1 (17%)	6
Evidence/facts (D3)	1 (17%)	0	4 (67%)	1 (17%)	6
Political interference(D4)	2 (33%)	0	3 (50%)	1 (17%)	6
Comparing data with strategic health objectives (D5)	0	0	5 (83%)	1 (17%)	6
Health needs (D6)	0	0	5 (83%)	1 (17%)	6
Considering costs (D7)	0	0	5 (83%)	1 (17%)	6

In health departments, superiors	Disagree (%)	Neutral (%)	Agreed (%)	No Response (%)	Total
Seek feedback from concerned persons (S1)	0	0	6 (100%)	0	6
Emphasize data quality in monthly reports (S2)	0	0	6 (100%)	0	6
Discuss conflicts openly to resolve them (S3)	3 (50%)	0	2 (33%)	1 (17%)	6
Seek feedback from concerned community (S4)	0	0	6 (100%)	0	6
Use HMIS data for setting targets and monitoring (S5)	0	0	6 (100%)	0	6
Check data quality at the facility and higher level regularly (S6)	1 (17%)	0	5 (83%)	0	6
Provide regular feedback to their staff through regular reports based on evidence (S7)	0	0	6 (100%)	0	6
Report on data accuracy regularly (S8)	1 (17%)	0	5 (83%)	0	6

In health department, staff	Disagree	Neutral	Agreed	No Response	Total
Are punctual (P1)	0	0	5 (83%)	1 (17%)	6
Document their activities and keep records (P2)	2 (33%)	0	3 (50%)	1 (17%)	6
Feel committed in improving health status of the target population (P3)	1 (17%)	0	4 (67%)	1 (17%)	6
Set appropriate and doable target of their performance (P4)	1 (17%)	0	4 (67%)	1 (17%)	6
Feel guilty for not accomplishing the set target/performance (P5)	2 (33%)	0	3 (50%)	1 (17%)	6
Are rewarded for good work (P6)	4 (67%)	0	1 (17%)	1 (17%)	6

In health department staff	Disagree	Neutral	Agreed	No Response	Totals
Use HMIS data for day-to-day management of the facility and LGA/state (P7)	0	0	5 (83%)	1 (17%)	6
Display data for monitoring their set target (P8)	0	1 (17)	4 (67%)	1 (17%)	6
Can gather data to find the root cause(s) of the problem(P9)	0	0	5 (83%)	1 (17%)	6
Can develop appropriate criteria for selecting interventions for a given problem (P10)	0	0	5 (83%)	1 (17%)	6
Can develop appropriate outcomes for a particular intervention (P11)	0	0	5 (83%)	1 (17%)	6
Can evaluate whether the targets or outcomes have been achieved (P12)	0	0	5 (83%)	1 (17%)	6
Are empowered to make decisions (P13)	3 (50%)	0	2 (33%)	1 (17%)	6
Able to say no to superiors and colleagues for demands/decisions not supported by evidence (P14)	3 (50%)	0	2 (33%)	1 (17%)	6
Are made accountable for poor performance (P15)	1 (17%)	0	4 (67%)	1 (17%)	6
Use HMIS data for community education and mobilization (P16)	0	0	5 (83%)	1 (17%)	6
Admit mistakes for taking corrective actions (P17)	0	0	5 (83%)	1 (17%)	6

Personal	Disagree	Neutral	Agreed	No Response	Total
Collecting information that is not used for decision making discourages me (BC1)	1 (17%)	0	5 (83%)	0	6
Collecting information makes me feel bored (BC2)	5 (83%)	0	1 (17%)	0	6
Collecting information is meaningful for me(BC3)	0	0	6 (100%)	0	6
Collecting information gives me the feeling that data are needed for monitoring facility performance(BC4)	0	0	6 (100%)	0	6
Collecting information gives me the feeling that it is forced on me (BC5)	6(100%)	0	0	0	6
Collecting information is appreciated by co-workers and superiors (BC6)	0	0	5 (83%)	1 (17%)	6

5. CHALLENGES

The survey team observed several challenges with the existing HMIS in Taraba state. These challenges can be classified into procedural, technological, and human resource-related issues.

Procedural issues:

- Lack of feedback to health facilities
- Low level of supportive supervision of health facilities by either LGA staff or state HMIS officer
- Problems with collecting data from health facilities, including poor data quality

Technological issues:

- Poor maintenance of computers
- Low proficiency in computer use
- Non-utilization of DHIS at the LGAs

Human resource-related issues:

- Absence of training opportunities and low motivation among staff
- Suboptimal qualification of HMIS personnel

In addition to the above specific challenges, some general problems were also highlighted, including the following:

- Poor compliance of private hospitals with submitting data to the LGA health departments
- Inadequate resources to undertake HMIS activities such as printing of forms and supportive supervision by the SMOH and LGA health departments
- Poor political will in using data to drive decisions
- Lack of mobility to effectively monitor LGAs and health facilities
- Poor logistics management system
- Lack of office space for some HMIS officers. This makes it difficult to obtain a secured place to keep paper documents received from the facilities.

6. CONCLUSIONS AND RECOMMENDATIONS

A good health service structure must be built on a solid base, relying on health statistics collected through a well-organized system that will help drive its decisions. During its assessment, the survey team observed that the presence of such a structured system in Taraba state was lacking due to several weak areas.

Though all five LGAs have computers, DHIS was not being used for routine health data management. Internet access though available in most LGAs, was occasionally unreliable and this can limit the achievement of the objectives of the DHIS v2 planned.

Low technical skills of M&E staff at the LGAs were also observed. Many of them were community health extension workers (CHEW) who do not have the academic training to hold such technical positions.

There were no standard operating procedures (SOP) detailing each step of data flow from point of generation to the point it leaves the LGAs for the SMOH. These SOPs need to be developed, implemented and adherence to them monitored.

Commitment from the government needs to be improved. The acute shortage of resources following the close out of the HSDP project shows dependence on donor funds which on exit leaves a wide gap and could lead to loss of progress made.

The following recommendations for the HMIS stem from this assessment.

Immediate priorities:

- Develop, produce, and disseminate revised HMIS forms/registers to LGA HMIS units and health facilities.
- Build network of HMIS personnel across the LGAs to facilitate learning from each other on best practices and ways to mitigate challenges in data collection.
- Advocate that policymakers improve funding of HMIS activities.
- Ensure HMIS officers create a supervisory checklist, schedule of supervisory visits, and tracking reports upon completion of field assignments.
- Improve general IT infrastructure and management, which include upgrading memory capacity of computers, providing and ensuring Internet access, and procuring backup units.

Long-term priorities:

- Provide basic HMIS training on DHIS 1.4 for LGA and state HMIS officers.
- Develop e-Health policies that will guide the storage, transmission and use of electronic the data.
- Conduct trainings on computer use.
- Improve the logistics management system to ensure significant restocking levels for essential materials. This will assist in reducing the length of time it takes to print and distribute forms.
- Develop a performance-based incentive scheme that recognizes LGAs for timely and accurate delivery of monthly reports.

- Draft a basic skill and academic requirement for new HMIS/ M&E staff at the state and LGA level.
- Conduct regular data quality audits and put in place a system to utilize lessons learned in this process.

While the above recommendations may take a while to be implemented, they are a necessary step in ensuring that the planned DHIS v2 adoption will achieve the intended goals.

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