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Maternal and Child Survival Program

Health Management Information Systems (HMIS) Review

Survey on Data Availability in Electronic Systems for Maternal and Newborn Health Indicators in 24 USAID Priority Countries

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Abbreviations

ANC	Antenatal care
BP	Blood pressure
CHW	Community health worker
DHIS	District Health Information System
GESIS	Gestion des Informations Sanitaires
HMIS	Health Management Information Systems
L&D	Labor and delivery
L&D	labor and delivery
MCSP	Maternal and Child Survival Program
MNCH	Maternal, newborn, and child health
MOH	Ministry of Health
OMRS	Open medical record system
PMTCT	Prevention of mother-to-child transmission of HIV
PNC	Postnatal care
USAID	United States Agency of International Development

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Introduction

In 2013, the Maternal and Child Health Integrated Program (MCHIP)—the United States Agency of International Development's (USAID's) flagship program reducing maternal, newborn and child deaths—reviewed data elements for maternal and newborn care in the Health Management Information Systems (HMIS) of 13 countries that were actively being supported by the program. The review looked at data elements related to maternal and newborn health that were captured at different levels of the health system by reviewing HMIS tools from these countries. Key findings, which included a lack of standardization and the difficulty of deriving some of the globally recommended indicators from national systems, were made available in a report released in 2014 (click here to view report).

Building on this work, the Maternal and Child Survival Program (MCSP), the follow-on to MCHIP, is conducting an expanded review. This review includes not only the technical areas of antenatal care (ANC) and labor and delivery (L&D) that were included in the original review, but also postnatal care (PNC) and child health and has been broadened to include the 24 USAID (now 25 with the 2016 addition of Burma) priority countries identified in the June 2014 report, "Acting on the Call: Ending Preventable Child and Maternal Deaths" (EPCMD) report (click here to view report). The purpose of the review is to examine the availability of data elements related to key lifesaving interventions and health outcomes, especially data elements that can be used to calculate globally recommended indicators included in national HMIS recording and reporting forms. In addition to the aforementioned review of HMIS materials, a survey was conducted to ask in-country program and policymakers about electronic data management for HMIS to have an indication of the extent to which HMIS data are electronically available, for example, in the online District Health Information System (DHIS2) that many countries have adopted in recent years. This brief presents findings from the survey on the availability of key maternal, newborn, and child health (MNCH) indicators in electronic format in the HMIS data elements in USAID's 25 priority countries.

Methods

From January to May 2015, a survey of 20 questions fielded use of on an online survey application (www.surveymonkey.com). The survey questions (**Annex 1**) included both open-ended opinion questions about data quality and challenges, as well as questions regarding systems in use and availability of data elements related to MNCH in-country.

In-country MNCH experts were asked to suggest names of people with expertise in HMIS, with instructions to select two or three people who support the Ministry of Health (MOH) or are recognized experts in the field. Respondents were emailed a link to the survey. Between one to three respondents were invited to complete the survey from each of the 24 USAID priority countries, excluding Yemen because of political instability. Responses were exported to Excel from the survey website, and then imported into Stata for data cleaning and statistical analysis. The responses were then summarized thematically using descriptive statistics, tables, and illustrative figures.

In case of differing responses by informants for the same country, the MCSP team sent queries back to the country to try to obtain a consensus answer. In some cases, the differing responses indicated different opinions, and, in other cases, they represented a variety of practice in that country. For opinion questions,

different responses were allowed. If the results were still divergent following a query, a note is indicated in the presentation of the data.

Findings

Surveys Completed

Thirty-five respondents from 22 countries responded to the survey.* Twelve countries had more than one respondent (**Table 1**). Yemen was excluded from the survey due to political unrest in the country; and the respondents for the Democratic Republic of Congo did not respond.

Table 1. Overview of Completed Surveys

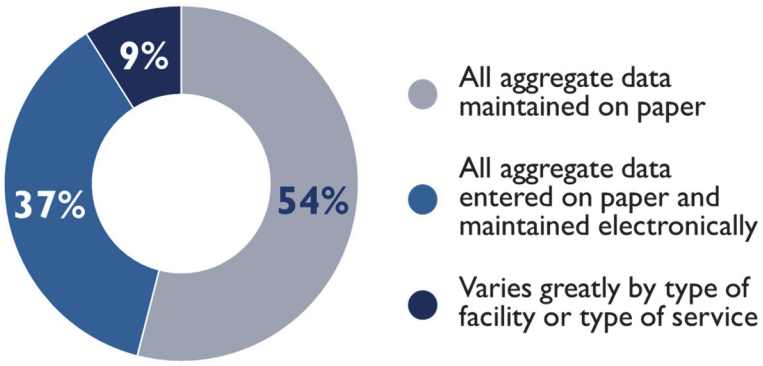
Country	Language of the Survey	Number of Respondents	Affiliation of Respondents
Afghanistan	English	2	MOH Jhpiego/HEMAYAT
Bangladesh	English	1	Save the Children
Ethiopia	English	2	MCSP Save the Children
Ghana	English	1	MCSP
Haiti	French (1) English (1)	2	USAID/Haiti MCSP
India	English	1	Not indicated
Indonesia	English	1	MOH
Kenya	English	2	MCSP
Liberia	English	1	MCSP
Madagascar	French	2	MCSP
Malawi	English	2	MCSP
Mali	French	1	PSI
Mozambique	English	2	MCSP
Nepal	English	2	RTI VSO
Nigeria	English	2	MNCH Programme Phase II HISP
Pakistan	English	2	MOH MCSP
Rwanda	English	1	MCSP
Senegal	French	1	Centre de Recherche pour le Développement Humain
South Sudan	English	1	Jhpiego
Tanzania	English	2	Jhpiego

Country	Language of the Survey	Number of Respondents	Affiliation of Respondents
Uganda	English	1	Protecting Families Against AIDS
Zambia	English	3	Ministry of Community Development Mother and Child Health Mansa District Council Medical Officer

Facility-Level Data Management Systems

According to respondents, paper-based entry and aggregation were more common at facility (54%) level compared to district level (14%). At the facility level, 10 countries (46%) reported manual (on paper) recording and aggregation, and 10 reported manual (on paper) recording but electronic aggregation (**Figure 1**). Respondents from over a third of the countries (37%) indicated that data are manually entered, but aggregated using an electronic data management system. The remainder indicated that it varied greatly across the system.

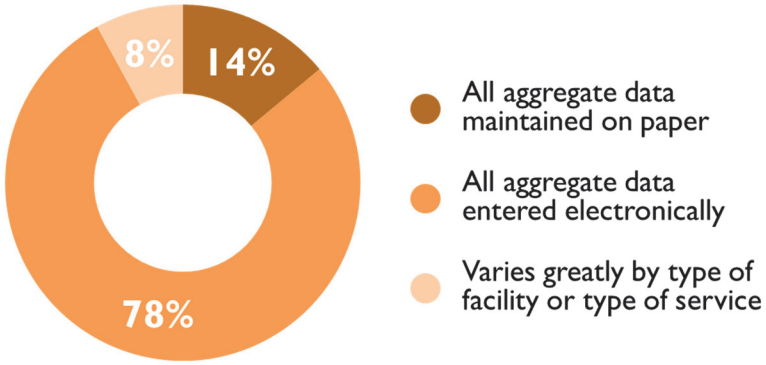
Figure 1. Overview of Facility-Level Data Management Systems



District-Level Data Management Systems

In contrast to the largely manual and paper-based facility-level data management, more than 80% (n=29/35) of respondents indicated that data were electronically managed at the district level. Three countries (Haiti, Pakistan, and Mali) reported using both paper and electronic systems at the district level, while respondents from two countries (South Sudan and Afghanistan) reported using paper forms at district level. The respondents from other countries reported use of electronic systems at district level.

Figure 2. Overview of District-Level Data Management Systems



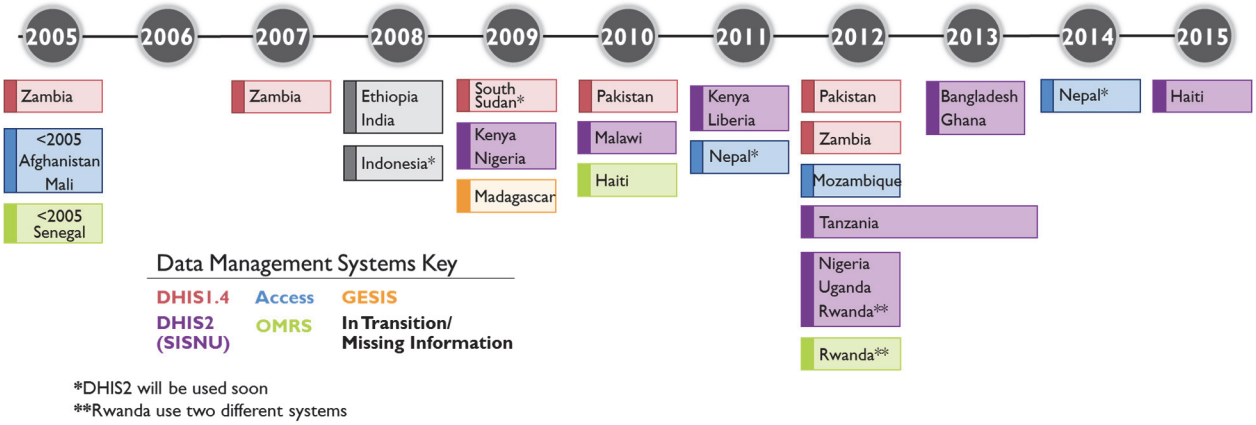
National-Level Data Management Systems

Systems Used and Year of Rollout

Over half of the respondents (51%) indicated that the DHIS2 is in use for HMIS for MNCH data in their country, with Nepal, Indonesia, and South Sudan respondents indicating that they are planning to roll it out shortly. Respondents from Pakistan and Zambia indicated that DHIS1.4 is in use, while respondents reported use of Access in Afghanistan, Mali, Mozambique, and Nepal. Madagascar uses a system called *Gestion des Informations Sanitaires* (GESIS). Respondents from Haiti and Rwanda indicated use of multiple systems (DHIS2 and an open medical record system [OMRS]). For all countries using DHIS2 of DHIS1.4 Access, or GESIS at the district level, this is their countrywide online information system that is also accessed at the national level.

Respondents from four countries (Afghanistan, Zambia, Senegal, and Mali) indicated that in their countries, electronic data systems were rolled out before 2005, while respondents from other countries reported roll out starting in 2008. **Figure 2** below indicates the year data management systems were rolled out according to the survey respondents.

Figure 2. Electronic Data Management Systems by Year of Rollout



MNCH Information Availability to Track National Targets

Table 3 shows responses by country on whether aggregated data for key MNCH indicators are available through the HMIS to track progress toward national targets. Overall, aggregated indicators related to MNCH were reported by respondents to be relatively available at the national level, with the exception of community health worker (CHW) program data.

Liberia was the only country where all types of data except CHW programs were reported to be available electronically on a client level basis at the national level, while respondents from Mali and Madagascar indicated that client-level data are only available for child health programs, and for the CHW program indicators in Mali, client level data was also reported to be available. Respondents from Bangladesh and Pakistan indicated that they do not have a national information system for prevention of mother-to-child transmission of HIV (PMTCT) (gray cells).

Table 3. Format of MNCH Information at the National Level

	PMTCT	ANC	L&D	PNC	Newborn Health	Family Planning	Immunization	Child Health	CHW Program
Afghanistan									
Bangladesh									
Ethiopia									
Ghana									
Haiti									
Kenya									
Liberia									
Madagascar									
Malawi									
Mali									
Mozambique									
Nepal									
Nigeria									
Pakistan									
Rwanda									
South Sudan									
Tanzania									
Uganda									

	Not available electronically
	Discordant responses
	Available electronically, at aggregate level
	Available electronically, at individual client level
	No information system in country

* PMTCT = prevention of mother-to-child-transmission (of HIV), ANC = antenatal care, L&D = labor and delivery, PNC = postnatal care, CHW = community health program

Availability of Key MNCH Indicators at National Level

Respondents were asked about their perceptions on the **availability** of key MNCH indicators electronically at the national level. According to responses, newborn care (skin-to-skin contact, immediate drying, and resuscitation) and newborn deaths within 24 hours were the indicators least available through the HMIS. Availability was also low for indicators relating to provision of a uterotonic immediately following delivery and blood pressure (BP) at ANC.

Table 6 below presents the reported availability of 15 key MNCH indicators at the national level; a country score of 1 indicates that the indicator was reported as available, 0 indicates that the indicator was unavailable, and a fraction if there were conflicting responses between surveyed experts. The total available points for each country was 15.

Table 4. Availability of MNCH Data Elements Electronically at National Level (for full definitions of data elements, see Annex 1, Question 16)

Country	HIV test ANC	Iron during ANC	Maternal death	HIV test	Stillbirths	Family planning	Newborn death before discharge	Postpartum visit within 48 hours	Macerated stillbirths	Newborn Resuscitation	BP during ANC	Uterotonic	Newborn death within 24 hours	Immediate Skin to skin for newborn	Immediate drying of newborn	*Country Average*
Zambia	1.0	1.0	1.0	1.0	1.0	0.7	0.7	0.7	1.0	0.3	0.3	0.7	0.3	0.7	0.7	*11.0*
Malawi	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	*11.0*
Mozambique	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	*11.0*
Tanzania	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	*10.0*
Mali	1.0	1.0	1.0		1.0	1.0		1.0		1.0		1.0		1.0	0.0	*9.0*
Rwanda	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	*9.0*
Senegal	1.0	1.0	1.0		1.0	1.0		1.0		1.0				1.0	1.0	*9.0*
Haiti	1.0	0.5	1.0	1.0	0.5	0.5	1.0	1.0		0.0	1.0	0.0	1.0	0.0	0.0	*8.5*
Ghana	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	0.0			0.0	0.0	0.0	*8.0*
Indonesia	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	*8.0*
Nigeria	1.0	1.0	0.5	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.0	0.5	*8.0*
Uganda	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	*8.0*
Nepal	0.5	1.0	0.5	0.5	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.5	1.0	0.5	*7.5*
India	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0		*7.0*
Kenya	1.0	1.0	1.0	1.0	0.5	0.0	1.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	*7.0*
Afghanistan	0.5	0.5	1.0	0.5	0.5	0.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	0.0	*6.5*

Country	HIV test ANC	Iron during ANC	Maternal death	HIV test	Stillbirths	Family planning	Newborn death before discharge	Postpartum visit within 48 hours	Macerated stillbirths	Newborn Resuscitation	BP during ANC	Uterotonic	Newborn death within 24 hours	Immediate Skin to skin for newborn	Immediate drying of newborn	*Country Average*
Ethiopia	1.0	0.0	1.0	1.0	0.5	0.0	1.0	0.5	0.0	0.5	0.0	0.0	1.0	0.0	0.0	*6.5*
Liberia	1.0	1.0	1.0	1.0			1.0			0.0	1.0			0.0	0.0	*6.0*
Pakistan	0.0	0.5	1.0	0.0	1.0	0.5	1.0	0.5	0.5	0.0	0.5	0.0	0.5	0.0	0.0	*6.0*
Madagascar	1.0	1.0	1.0		1.0	0.0		0.0		0.0		0.0		0.0	0.0	*4.0*
South Sudan	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*4.0*
Bangladesh	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*1.0*
Indicator Average	*19.0*	*17.5*	*17.5*	*16.0*	*15.0*	*13.2*	*12.7*	*12.2*	*9.5*	*7.3*	*6.3*	*6.2*	*5.8*	*4.7*	*3.2*	

0	1	0.3/0.5/0.7	Missing/
No	Yes	Discordant responses	Don't know

Respondents were also asked their opinion on the **completeness and quality** of electronic HMIS data at the national level. Indicators on HIV testing both during pregnancy and ANC, as well as maternal death, were described by respondents as adequately complete and of sufficiently high quality to perform meaningful analysis. Respondents from most countries (excluding Malawi and Mali) characterized newborn indicators as being of insufficient quality and completeness for analysis on newborn interventions. The majority of respondents also reported poor quality information within the HMIS for uterotonic immediately following delivery, postpartum care within 48 hours, postpartum family planning and BP measurement during ANC (see **Table 5**).

Table 5. Data Element Completeness and Quality at National Level

Country	HIV test ANC	Iron during ANC	Maternal death	HIV test	Stillbirths	Family planning	Newborn death before discharge	Postpartum visit within 48 hours	Macerated stillbirths	Newborn Resuscitation	BP during ANC	Uterotonic	Newborn death within 24 hours	Immediate Skin to skin for newborn	Immediate drying of newborn
Afghanistan	0	1	1	1	1	1		1				1			1
Bangladesh							1								
Ethiopia		1	1	0	1	1		1						1	
Ghana	1	1	1	1	1		1	1					1		
Haiti	1	1	0.5	0	0	0.5	0	0.5						0	0
India	1	0			0	1	1	0						1	
Indonesia	1	1	1	1		1	1	1							0
Kenya	0	1	1	1	1	0		0.5					0.5		
Liberia	1	1	1	1				1							1
Madagascar	1		1		1			1							
Malawi	1	1	1	1	1	0	0	1	1			0.5	1		
Mali	1		1		1	1	1	1	1	1		1			
Mozambique	1	1	1		1	1		1		0.5	1	1		1	1
Nepal	1		1	1		0	1		1	0.5	0	0		0	
Nigeria	0	1	1	1	1	1	1	1	0		0		1	1	
Pakistan	0		0.5	0.5	0.5	1	0						0	1	0
Rwanda	1	1	1	0	1	1		1				1	1		
Senegal	1		1		1	1	1	1		1	1	1			
South Sudan		1	1				0	1							
Tanzania	1	1			1	0.5	0.5	1	1			0.5	1		1
Uganda	1	1	1	1	1		0	1					1		
Zambia	0.7	1	1	1	1	0.5	1	1	0.5	0.5	0.5	0	1	1	0

0	1	0.3/0.5/0.7	Missing/
No	Yes	Discordant responses	Don't know

Factors Affecting Quality of HMIS Data

Respondents were asked to rate the quality of HMIS data, with 1 being poor and 5 being excellent. This was a subjective question, allowing for the opinion of the respondent. Only respondents from India described the quality of HMIS data as "very good," (average 4.8 score), and eight country respondents described the quality of their HMIS data as either "good" or "adequate" (average 3.3–4.1). The majority of the country respondents (13 countries) described the quality of their HMIS data as "poor" (2.1–3.0). In regards to key factors affecting quality, use of data for decision-making was ranked lowest, while HMIS functionality and ease of use were the highest rated factors. See Table 6 below.

Table 6. Factors That Affect HMIS Data Use and Overall Quality of HMIS

Country	Data Entry Capacity	HMIS Functionality	Ease of Use	Data Completeness	Denominator Availability	Capacity to Use Data for Decision	Data Quality	Effective Use of Data	Country Average
India	5.0	5.0	5.0	5.0	4.0	5.0	4.0	5.0	*4.8*
Rwanda	5.0	4.0	4.0	5.0	5.0	3.0	4.0	3.0	*4.1*
Liberia	2.0	4.0	5.0	2.0	5.0	4.0	4.0	4.0	*3.8*
Indonesia	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	*3.6*
Malawi	4.5	3.0	3.0	4.0	3.0	3.5	3.5	3.5	*3.5*
Afghanistan	3.5	4.5	3.0	4.5	2.5	3.0	3.5	3.0	*3.4*
Ghana	4.0	4.0	5.0	4.0	3.0	2.0	3.0	2.0	*3.4*
Tanzania	3.5	4.0	4.0	4.0	3.0	2.5	2.5	2.5	*3.3*
Uganda	5.0	3.0	3.0	2.0	3.0	4.0	2.0	4.0	*3.3*
Kenya	3.0	4.0	3.5	3.0	2.5	3.0	3.0	2.0	*3.0*
South	4.0	4.0	4.0	2.0	3.0	3.0	2.0	2.0	*3.0*
Nigeria	3.5	3.5	3.5	3.5	3.0	2.0	2.5	2.0	*2.9*
Zambia	3.0	3.3	3.3	3.0	2.3	1.7	3.0	2.7	*2.8*
Senegal	3.0	2.0	2.0	2.0	5.0	4.0	2.0	2.0	*2.8*
Ethiopia	2.5	2.5	2.5	3.0	3.0	2.5	2.5	2.5	*2.6*
Mozambique	3.0	2.0	2.5	2.5	3.5	2.5	3.0	1.5	*2.6*
Haiti	2.5	3.0	3.0	2.0	2.0	2.0	2.5	2.5	*2.4*
Nepal	3.0	3.0	2.0	2.5	3.0	2.0	2.0	1.5	*2.4*

Country	Data Entry Capacity	HMIS Functionality	Ease of Use	Data Completeness	Denominator Availability	Capacity to Use Data for Decision	Data Quality	Effective Use of Data	Country Average
Pakistan	3.0	2.5	3.0	2.0	1.5	2.5	2.0	2.5	*2.4*
Mali	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	*2.3*
Bangladesh	3.0	2.0	2.0	4.0	1.0	2.0	2.0	1.0	*2.1*
Madagascar	2.0	2.0	2.0	3.0	1.0	3.0	2.0	2.0	*2.1*
Quality average	*3.4*	*3.2*	*3.2*	*3.1*	*3.0*	*2.9*	*2.7*	*2.6*	

1.0–2.0	>2.0–3.0	>3.0–3.5	>3.5–4.5	>=4.5
Very Poor	Poor	Adequate	Good	*Very Good*

Suggested Improvements to HMIS

In response to the question about how to improve HMIS for tracking and improving MNCH quality, respondents provided four main categories: capacity-building, quality assurance, content, and functionality. These are discussed below.

Capacity-building was considered important by respondents from multiple countries. Training was suggested to ensure that data managers have the skills to: enter and report data correctly (Mozambique); use data visualization including GIS mapping (Tanzania and Rwanda); and use data for decision-making (Tanzania and Mozambique).

Data quality assurance was considered a priority, with respondents suggesting: routine quality assurance activities (Afghanistan and Nepal); data validation (Ghana); and improved accountability informed by data (Malawi) as mechanisms to ensure data quality and use.

Inclusion of quality-of-care indicators was also a common thread. Coverage indicators (Ethiopia) and indicators to track staff mobility and training (Rwanda) were suggested by respondents. To improve timeliness, suggestions included having an online completeness report (Mozambique) or an automatic reminder system (Kenya). Alternative data collection methods included using SMS or smartphone for data entry (Madagascar) and electronic data entry at points of service delivery (Ghana). Multiple countries (Liberia, Nepal, Uganda, and Nigeria) emphasized that the HMIS system should be user-friendly, and using a system that is compatible across multiple countries (Liberia).

Respondents also mentioned **strengthening the linkage between HMIS and service delivery points** programs, and ensuring that user guides, standard operating procedures, and data dictionaries are available at all levels (Rwanda and Tanzania). The need for a system that captures both facility- and community-based services was noted in several countries (Nepal, South Sudan, and Zambia). The respondents acknowledged existing challenges for functionality of HMIS, including: indicator definition, particularly denominators (Nepal and Zambia); staff turnover (South Sudan); and the system being defined heavily by the non-Ministry stakeholders (Malawi).

Discussion

This survey was designed to broaden understanding of strengths and challenges of HMIS for MNCH indicator reporting in the USAID EPCMD priority countries. All of the USAID priority countries surveyed have acknowledged HMIS as a pillar of the health system, and have embarked upon making their HMIS systematic, able to fill program data needs, and electronically managed.[1] According to respondents in this survey, all countries have some sort of electronic data management system at national and district levels, with respondents from 40% of countries reporting facility-level electronic data management.

The importance of the HMIS for decision-making in public health is clear. In a recent example, the Zambian HMIS was combined with community malaria case surveillance to create evidence-based prevention scale-up recommendations.[3]

Respondents reported that data are largely electronic at district level and manual (paper-based) at facility level. This may be related to the system in use, in many cases DHIS2, which focuses on data management at the

district level. DHIS2 is in use in 47 countries.[4] Respondents seemed to appreciate DHIS2 as a standardized system that is compatible across countries. The implication of keeping data at the district level is that facilities are limited in their ability to use data for decision-making, given that the tools for electronic data display—both computers and internet access—are largely not available at the facility level.

Our survey provided experts a space to make broad generalizations about the systems in use and their responses reflected that the implementation HMIS is complex. Even in places with reported success with DHIS2, major challenges exist. A recent assessment of the Kenyan HMIS found that half of hospitals surveyed used an electronic medical record that was not linked to the DHIS2.[2]

According to the respondents, data use was the weakest link in using MNCH data in meaningful ways, followed by human resource capacity and poor availability of indicators in the system. A recent evaluation of HMIS data use in Nigeria found that only one-third of health care workers knew the specific uses of multiple surveillance forms.[5] A study in Kenya and a review of HMIS in multiple countries both demonstrated that availability of an electronic system does not ensure data utilization for decision-making.[2],[6] The experts surveyed feel that usage of the data is the largest problem. A possible remedy for this is to build capacity of in-country program planners and policymakers to use existing systems, and of facility staff to use data for quality assurance and planning.

A full review of data elements available in the HMIS tools of 23 of the 24 priority countries is forthcoming. The responses in this report are not comprehensive. However, the experts surveyed noted a few "across the board" weaknesses in content of HMIS, including availability of data elements on newborn care, newborn deaths, and provision of uterotonic immediately after birth. The responses correspond to global evidence of noted weakness in newborn care data. [7] The recording of timing of newborn deaths was noted by respondents to be problematic—newborn death within 24 hours wasn't available—whereas newborn deaths before discharge was noted to be more readily available. Similarly, BP at ANC, related to pre-eclampsia/eclampsia screening, was noted as poor. Many country respondents also suggested the need for quality-of-care indicators and human resources-related indicators in HMIS systems. The availability of disaggregated CHW program data appears to be limited compared to other programmatic data.

Poor data quality at point of entry and incompleteness of data were noted as a concern in most countries (this survey did not quantify quality or completeness of HMIS data). In fact, completeness and quality vary greatly between countries. A recent quality assessment of Rwandan HMIS data reported 83% consistency between district and national indicators, which was seen to be adequate completeness to inform programs.[8] An assessment of DHIS2 rollout in Uganda found that completeness of HMIS data increased from 36% to 85% over a one year period.[9] Survey respondents further noted concerns about the limited functionality of the system and also it not being user-friendly. Finally, definitions of indicators, particularly the denominators for coverage, were noted as being problematic.

There were some limitations to the survey, particularly related to the French version of the survey questionnaire, which pertained to responses from Madagascar, Mali, and Haiti. The French and English versions differed slightly in the categories for DHIS (DHIS1.4 and DHIS2 were combined in the French version). The questions on availability and completeness/quality of indicators (including HIV test during pregnancy, BP during ANC, newborn death within 24 hours, newborn deaths before discharge, and stillbirth indicators) were omitted from the French version of the survey.

Recommendations

Based on the findings from the survey, the following is recommended:

- Facilities were reported as often being the level that reports, but does not benefit from electronically managed data for MNCH, as data are primarily paper based and manually aggregated. Increased investment in facility-level capacity and data use would include increasing hardware and software capacity, human resource capacity, and connectivity. Under MCSP, some countries have started using data dashboards at the facility level, which is a potential best practice in the area of facility-level data use.
- Data use was reported as the weakest part of the HMIS in many countries. It is recommended that improvements to data utilization, such as capacity and human resource availability for data display and dissemination, focus on the district level, where infrastructure has already been built. Efforts to improve data use at the facility level may require different strategies due to the difference in capacity and infrastructure at that level.
- In a number of countries, the availability of data on CHW programs was noted as a problem, as well as respondents mentioning that systems should include both community as well as facility data. It is recommended that countries consider bringing together technical working groups or task forces to help bring CHW or other community-based programs into the fold for HMIS.
- Three notable areas lacking in data availability according to expert perspective were: newborn care, uterotonic use after delivery, and BP in ANC services (more detailed information will be available in the full analysis report, available by 12/2016). Countries are urged to form expert groups to address these gaps in the HMIS.
- Issues around poor data quality, incompleteness, limited functionality, and systems not being user-friendly were noted by many respondents. Only India's respondents rated their system as "very good," and Rwanda, Liberia, and Indonesia respondents rated their systems as "good." Thirteen countries' respondents gave an overall rating of "poor" or "very poor". An increased investment in the infrastructure, capacity, and utility of HMIS may lead to more efficient systems for tracking, monitoring, evaluating, and improving MNCH services.

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Annex 1

Introduction

You are being asked to complete our survey of Health Management Information Systems (HMIS) in one of the 24 USAID priority countries because you are knowledgeable about the existing system. This MCSP core activity will be used to inform future programs. It should take less than 20 minutes to complete. The survey is not anonymous. However, your name will not appear in the report, and your responses will not be shared with anyone outside the team. The results are being used to collect data about HMIS systems, not to evaluate your knowledge. If you are unsure about the correct response, consider obtaining the information needed and then returning to the survey or recommending another person to assist in completing the survey. Select "don't know" rather than guessing about the correct response.
If you need assistance completing the survey, contact Emma Williams: emma.williams@jhpiego.org
Thank you for your time and assistance.

Vous êtes invité à compléter notre enquête sur les systèmes d'information pour la gestion sanitaire (SIGS) dans l'un des 24 pays prioritaires de l'USAID parce que vous êtes bien informé sur le système existant. Cette activité de base du Programme USAID pour la survie de la mère et de l'enfant sera utilisée pour informer les futurs programmes. Il vous faudra moins de 20 minutes pour compléter ce formulaire. L'enquête n'est pas anonyme. Cependant, votre nom ne paraîtra pas dans le rapport, et vos réponses ne seront pas partagés avec quiconque en dehors de l'équipe. Les résultats sont utilisés pour collecter des données sur les systèmes de SIGS, et non pas pour évaluer vos connaissances. Si vous n'êtes pas sûr de la réponse correcte, envisager d'obtenir les informations nécessaires, puis revenir à l'enquête ou recommander un autre personne pour vous aider à remplir le questionnaire. Sélectionnez «ne sait pas» plutôt que de deviner la bonne réponse.
Si vous avez besoin d'aide pour remplir l'enquête, contacter Emma Williams: emma.williams@jhpiego.org
Nous vous remercions du temps et de l'aide que vous nous accordez.

Language Preference

* 1. In which language would you prefer to take this survey?
(*Dans quelle langue souhaitez-vous participer à l'enquête ?*)

- ○ English
- ○ French (*Francais*)

Overview of HMIS

* 2. For which country will you provide responses? (SELECT ONLY ONE)

* 3. **At the facility level**, which best describes your country's process for reporting into HMIS for reproductive maternal neonatal child health (RMNCH) (excluding pilots/ studies)?

- ○ Manually entered into a paper register and aggregated manually into summary form
- ○ Manually entered into paper register, aggregated summaries are entered into electronic data management system
- ○ Client level data are entered into electronic system which does not generate summaries
- ○ Client level data are entered into electronic system which generates summaries
- ○ It varies greatly by type of facility or type of service
- ○ Don't know

Other (please specify)

* 4. **At the district level**, which best describes your country's process for reporting into HMIS for RMNCH (excluding pilots/ studies)?

- ○ All aggregate data maintained on paper
- ○ All aggregate data maintained electronically
- ○ Don't know
- ○ Other (please specify)

* 5. Please tick the name of the electronic data management system(s) used by your country for data management of RMNCH (excluding pilot studies and research studies): (CHECK ALL THAT APPLY)

- ☐ DHIS1.4
- ☐ DHIS2
- ☐ Access (not DHIS1.4)
- ☐ Electronic Medical Record Systems (EMRS) - Open MRS
- ☐ Electronic Medical Record Systems (EMRS) - Other, not Open MRS
- ☐ No electronic data management
- ☐ Don't know

Other (please specify)

* 6. Regarding the electronic data management system mentioned in the previous question - in what year was this system rolled out?

For the following questions, think about **national level** data from public health facilities in your country. Indicate whether this data is available electronically. If so, is it available at the client level or only at the aggregate level?

* 7. What kind of information is available for the prevention of mother to child transmission of HIV (PMTCT) system?

* 8. What level of information is available about *antenatal care* (which may or may not include PMTCT), at the national level?

* 9. What type of information is available about *labor &delivery care*, at the national level?

* 10. What type of information is available about *postnatal care* at the national level?

* 11. What kind of information is available about *newborn health* at the national level?

* 12. What kind of information is available about *family planning*, at the national level?

* 13. What kind of information is available about *immunization* at the national level?

* 14. What kind of information is available about *child health* (which may or may not include immunization) at the national level?

* 15. What kind of information is available about the *community health worker program* at the national level?

* 16. Would the following indicators would be available for analysis at national level from an electronic HMIS?

	Yes	No	Don't know
Number of women who received iron supplements during antenatal care	○	○	○
Number of women who were tested for HIV during pregnancy	○	○	○
Number of women who got uterotonic immediately following delivery	○	○	○
Number of newborns put skin to skin on mother immediately following delivery	○	○	○
Number of newborns dried immediately after delivery	○	○	○
Number of newborns who received resuscitation with bag and mask at delivery	○	○	○
Number of maternal deaths before discharge	○	○	○
Number of newborn deaths within the first 24 hours	○	○	○
Number newborn deaths before discharge	○	○	○
Number of fresh or intrapartum stillbirths	○	○	○
Number of women who received a postpartum visit within 48 hours after birth	○	○	○
Number of women who received a family planning method (including LAM) in their postpartum care	○	○	○
Number of macerated still births occurring in facility deliveries	○	○	○
Number of women ANC visits in which blood pressure was measured	○	○	○

	Yes	No	Don't know
Number of women who were tested for HIV during ANC	○	○	○

Comments

* 17. Would the following indicators do you feel, if drawn from your country's national electronic HMIS, have adequate completeness and quality to perform meaningful analysis?

	Yes	No	Don't know
Number of women who received iron supplements during antenatal care	○	○	○
Number of women who were tested for HIV during pregnancy	○	○	○
Number of women who got uterotonic immediately following delivery	○	○	○
Number of newborns put skin to skin on mother immediately following delivery	○	○	○
Number of newborns dried immediately after delivery	○	○	○
Number of newborns who received resuscitation with bag and mask at delivery	○	○	○
Number of maternal deaths before discharge	○	○	○
Number of newborn deaths within the first 24 hours	○	○	○
Number newborn deaths before discharge	○	○	○
Number of fresh or intrapartum stillbirths	○	○	○
Number of women who received a postpartum visit within 48 hours after birth	○	○	○

	Yes	No	Don't know
Number of women who received a family planning method (including LAM) in their postpartum care	○	○	○
Number of macerated still births occurring in facility deliveries	○	○	○
Number of women ANC visits in which blood pressure was measured	○	○	○
Number of women who were tested for HIV during ANC	○	○	○

Comments

18. What improvements would you like to see made to the HMIS system in your country?

* 19. Following are some factors that affect the utilization of HMIS data in some countries. How would you rate these aspects of the data in your country?

	Very poor	Poor	Adequate	Good	Very good
Completeness of data	○	○	○	○	○
Quality of data	○	○	○	○	○
HMIS system's ability to perform needed functions	○	○	○	○	○
HMIS system's ease of use	○	○	○	○	○
Capacity of staff to enter the data correctly	○	○	○	○	○
Capacity of administrators to utilize the data for decision-making	○	○	○	○	○
Effective use of the data	○	○	○	○	○
Availability of denominators for calculating coverage	○	○	○	○	○

Comments

20. What improvements would you like to see in the HMIS system for your country?

French Language Version, Pt.1

* 21. Pour quel pays fournissez-vous des réponses? (SELECTIONNER UNE SEULE REPONSE)

* 22. **Au niveau des établissements de santé**, comment décririez-vous le SGIS pour les services de santé maternelle, néonatale, infantile, et de planification familiale (à l'exclusion des études/pilotes) ?

- ○ Entrée manuellement dans un registre papier et agrégées manuellement sous forme de résumé
- ○ Entré manuellement dans le registre de papier, résumés agrégés sont entrés dans le système de gestion électronique des données
- ○ Les données au niveau des clients se font au système électronique qui ne génère pas de résumés
- ○ Les données au niveau du client sont entrés dans le système électronique qui génère des résumés
- ○ Elle peut varier considérablement selon le type d'installation ou le type de service
- ○ Ne sait pas
- ○ Autre (veuillez préciser)

* 23. Cochez le nom du/des système(s) de données électroniques utilisé(s) dans votre pays pour la gestion des données les services de santé maternelle, néonatale, infantile, et de planification familiale (à l'exclusion des études pilotes et des recherches) (COCHEZ TOUTES LES CASES PERTINENTES)

- ☐ DHIS1.4 DHIS2
- ☐ Access (pas DHIS1.4)
- ☐ Systèmes de dossiers médicaux électroniques (DME – système accès (OpenMRS)
- ☐ Systèmes de dossiers médicaux électroniques (DME) – Autres (non open MRS)
- ☐ Pas de gestion de données électroniques
- ☐ Ne sait pas
- ☐ Autre (veuillez spécifier)

* 24. Au niveau du district, comment décririez-vous le SGIS pour les services les services de santé maternelle, néonatale, infantile, et de planification familiale (à l'exclusion des études/pilotes) ?

- ○ Toutes les données agrégés sont maintenues sur papier
- ○ Toutes les données agrégées sont maintenues sous forme électronique
- ○ Ne sait pas
- ○ Autre (veuillez préciser)

French Language Version, Pt. 2

* 25. A propos du système de gestion électronique des données mentionné dans la question précédente – en quelle année ce système a démarré?

Pour les questions suivantes, pensez aux données des établissements de santé publique au niveau national dans votre pays. Indiquez si ces données sont disponibles électroniquement. Dans ce cas, est-ce disponible au niveau du client ou seulement à l'état agrégé?

* 26. Quel type d'information est disponible pour le système de PTME (prévention de la transmission mère-enfant?

* 27. Quel est le niveau d'information disponible sur les soins prénatals (qui peut inclure ou ne pas inclure la PTME) au niveau national?

* 28. Quel type d'information est disponible sur le travail/les soins à l'accouchement au niveau national?

* 29. Quel type d'information est disponible sur les soins postnatals au niveau national?

* 30. Quel type d'information est disponible sur la santé du nouveau-né au niveau national?

* 31. Quel type d'information est disponible sur la planification familiale, au niveau national?

* 32. Quel type d'information est disponible sur la vaccination au niveau national?

* 33. Quel type d'information est disponible sur la santé infantile (qui peut inclure ou ne pas inclure la vaccination) au niveau national?

* 34. Quel type d'information est disponible sur le programme communautaire de travailleur de la santé au niveau national?

* 35. Seraient les indicateurs suivants sont disponibles ppour l'analyse au niveau national, à partir d'un SIGS électronique?

	Oui	Non	Ne sait pas
Nombre de femmes ayant reçu un utérotonique immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés mis peau à peau sur la mère immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés séchés immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés réanimés avec un sac et un masque	○	○	○
Nombre de décès maternels avant la sortie de l'établissement de santé	○	○	○
Nombre de décès maternels avant lasortie de l'établissement de santé	○	○	○
Nombre de mort-nés frais ou de mortinaissances intrapartum	○	○	○
Nombre de femmes ayant reçu une visite postpartum dans les 48 heures suivant l'accouchement	○	○	○
Nombre de femmes ayant reçu une méthode de PF (y compris MAMA) lors des soins postpartum	○	○	○

	Oui	Non	Ne sait pas
Nombre de femmes ayant reçu un supplément de fer dans le cadre de la CPN	○	○	○
Nombre de femmes testées pour le VIH lors de la CPN	○	○	○

Commentaires

* 36. Seraient les indicateurs suivants, tirés du SIGS électronique national de votre pays, a un caractère exhaustif et de qualité qui permettrait d'effectuer une analyse significative?

	Oui	Non	Ne sait pas
Nombre de femmes ayant reçu un utérotonique immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés mis peau à peau sur la mère immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés séchés immédiatement après l'accouchement	○	○	○
Nombre de nouveau-nés réanimés avec un sac et un masque	○	○	○
Nombre de décès maternels avant la sortie de l'établissement de santé	○	○	○
Nombre de décès maternels avant la sortie de l'établissement de santé	○	○	○
Nombre de mort-nés frais ou de mortinaissances intrapartum	○	○	○
Nombre de femmes ayant reçu une visite postpartum dans les 48 heures suivant l'accouchement	○	○	○

	Oui	Non	Ne sait pas
Nombre de femmes ayant reçu une méthode de PF (y compris MAMA) lors des soins postpartum	○	○	○
Nombre de femmes ayant reçu un supplément de fer dans le cadre de la CPN	○	○	○
Nombre de femmes testées pour le VIH lors de la CPN	○	○	○

Commentaires

* 37. Voici quelques facteurs qui affectent l'utilisation des données du SIGS dans certains pays. Comment qualifieriez-vous les aspects des données dans votre pays ?

	Très faible	Faible	Adéquat	Bon	Très bon	Ne sait pas
Exhaustivité des données	○	○	○	○	○	○
Qualité des données	○	○	○	○	○	○
Capacité du SIGS à effectuer les fonctions nécessaires	○	○	○	○	○	○
Facilité d'utilisation du SIGS	○	○	○	○	○	○
Capacités du personnel à entrer les données correctement	○	○	○	○	○	○
Capacités des administrateurs à utiliser les données pour la prise de décision	○	○	○	○	○	○
Utilisation efficace des données	○	○	○	○	○	○
Disponibilité des dénominateurs pour calculer la couverture	○	○	○	○	○	○

Commentaires

38. Quelles améliorations souhaiteriez-vous voir apporter au SIGS dans votre pays ?

39. Address

Name	
Company	
Address	
Address 2	
City/Town	
State/Province	
ZIP/Postal Code	
Country	
Email Address	
Phone Number	

Thank you for completing the survey!
Nous vous remercions d'avoir rempli le questionnaire!

* 40. Please provide your contact information in case we need to request more information from you.
Veuillez nous fournir vos coordonnées au cas où nous aurions besoin d'informations supplémentaires.

Name (*Nom*)	
Organization (*Organisation*)	
Email Address (*Adresse email*)	

41. Would you recommend another person for us to contact regarding this information? If so, please provide that person's contact information below.
Pouvez-vous recommander quelqu'un que nous pourrions contacter? Merci de nous donner les coordonnées de cette personne ci-dessous.

Name (*Nom*)	
Organization (*Organisation*)	
Email Address (*Adresse email*)	