Subnational Procurement of Maternal Health Medicines: Results from an Assessment in Bangladesh

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Key Words

subnational procurement, local procurement, maternal health, oxytocin, misoprostol, magnesium sulfate, Bangladesh

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ABBREVIATIONS AND ACRONYMS

BEmOC	Basic emergency obstetric care
BDT	Bangladesh taka
CMSD	Central Medical Stores Depot
CSO	Civil Surgeon Office
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DRS	District Reserve Store
HPNSDP	Health, Population and Nutrition Sector Development Program (Bangladesh)
MCH	Maternal and child health
LD	line director
MCWC	Mother and Child Welfare Center
MDG	Millennium Development Goal
MMR	maternal mortality rate
MNCH	Maternal, newborn, and child health
MoHFW	Ministry of Health and Family Welfare
PE/E	preeclampsia and eclampsia
POM	Procurement Operations Manual (SIAPS and MoHFW)
PPA	Public Procurement Act of 2006
PPH	postpartum hemorrhage
PPM	Procurement Procedures Manual (DGFP)
PPR	Public Procurement Rules of 2008
SIAPS	Systems for Improved Access to Pharmaceuticals and Services [Program]
UFPS	Upazila Family Planning Store
UHC	Upazila Health Complex
UNCoLSC	United Nations Commission on Life-Saving Commodities
USAID	US Agency for International Development

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EXECUTIVE SUMMARY

Bangladesh is one of the nine countries that are on track for meeting Millennium Development Goal 5 (MDG-5) by reducing its maternal mortality rate (MMR).[1] Although the country has made great strides, the 2010 Maternal Mortality Survey in Bangladesh found stark variations in MMR when comparing divisions (administrative regions).[2] Whereas some divisions may have an MMR that is less than that nationally, other divisions, such as Sylhet, have much higher MMRs. Past studies have shown that access to essential life-saving maternal health services and medicines is limited in Bangladesh, especially at the health system's lower levels. Some major challenges for increasing access to medicines include quantifying and forecasting needs, creating distribution channels and storage, managing inventory, and obtaining quality data for supply chain decision making.[3] Additionally, increasing awareness that some maternal health medicines are locally procured heightens concerns about the effect that local procurement practices may have on access to quality medicines.

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program works at both the global and country levels to improve pharmaceutical management systems and to increase access to quality medicines. In Bangladesh, one major area that SIAPS focuses on is strengthening procurement management systems. Stemming from (1) the activities SIAPS has been supporting in Bangladesh and (2) the growing global and in-country concerns about managing local procurement, SIAPS developed a methodology and a set of tools to assess the effect of local procurement on the availability of maternal health medicines. SIAPS validated those tools in Bangladesh.

The assessment's purpose was not to define firm recommendations as to whether more centralized or more local procurement of maternal health medicines is advisable. Instead, it was done to allow a broader discussion about potential strategies to improve access to maternal health medicines and to understand how local procurement practices affect access to quality maternal health medicines at the district level.

Specifically, the assessment (1) measured the availability of maternal health medicines at selected storage and health care facilities to determine the medicines' source, (2) evaluated local procurement practices being used at the district levels for essential maternal health commodities, and (3) compared those practices with national and international standards and guidelines. The results further identified options for strengthening local procurement practices and overall procurement strategies.

[1] Countdown to 2015: Maternal, Newborn and Child. *Building a Future for Women and Children* (Geneva: World Health Organization, 2012).
[2] National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, and icddr,b. *Bangladesh Maternal Mortality and Health Care Survey 2010* (Dhaka: NIPORT, MEASURE Evaluation, and icddr,b, 2012).
[3] United Nations Commission on Life-Saving Commodities (UNCoLSC) for Women and Children, "Every Woman Every Child" (commissioner's report, UNCoLSC, Geneva, 2012).

The assessment was conducted in three divisions—Dhaka, Khulna, and Sylhet—in late 2013. One district within each division was selected in consultation with both the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). The selected divisions were good examples of the range of conditions that exist throughout the country in terms of MMRs, service delivery, and supply chain functionality.

Among the findings was that local procurement sometimes accounts for a substantial amount of maternal health medicines acquired at the district level. For example, among DGHS sites, local procurement accounts for 40% of all oxytocin obtained in the three districts. Among DGFP sites, local procurement accounts for 92% of oxytocin obtained in all three districts. However, regardless of the source (whether supplied at the central level or locally procured), maternal health medicines have limited availability at both DGHS and DGFP sites. For example, for each medicine, less than 40% of the sites visited had a continuous supply during the 12 months before the visit. Some major findings of the assessment that affect access to maternal health medicines include the following—

- Lack of coordinating and sharing information between the central and subnational level
- No district-level guidance for quantification or local procurement of medicines
- Insufficient training of the procurement committee members about quantification or procurement
- No standard evidence-based method for forecasting maternal health medicines at the district level
- Medicines that cost more at the district level than at the central level

In addition, the assessment looked at quality assurance mechanisms instituted at the district level. All facilities reported doing a visual inspection when medicines are delivered. However, review of tender documents found that district-level sites were not including product specifications for cold chain storage of oxytocin and for double-sided aluminum packaging of misoprostol. Nevertheless, no sites reported having any suspected quality issues with maternal health medicines.

Despite the weaknesses described, researchers observed many good procurement practices during the assessment. Given the potential benefits of local procurement, especially as a means of avoiding stock-outs of life-saving medicines for women, the current processes and procedures could be strengthened so more benefits can be reaped. Some suggestions are as follows—

- Improve coordination between the central and district levels—and even within levels
- Strengthen pharmaceutical information systems to provide the data needed for robust forecasting and supply planning
- Improve the staff members' capacity at local level to manage procurement processes

- Strengthen oversight of local procurement processes
- Strengthen quality assurance and control systems for essential medicines
- Review the various sources of maternal health medicines and procurement mechanisms currently in place, and define a holistic strategy that ensures access to quality maternal health medicines

INTRODUCTION

Globally, nearly 300,000 women die every year giving birth, mostly as a result of preventable causes such as postpartum hemorrhage (PPH) and preeclampsia and eclampsia (PE/E).[4] Most deaths are concentrated in Sub-Saharan Africa and South Asia with PPH and PE/E accounting for 35% and 18%, respectively.[5] The 2012 *Countdown to 2015* report found that of the 74 countdown countries, only 9 are on track to meet the Millennium Development Goals (MDG)-5 (which aims to reduce MMR by three-quarters between 1990 and 2015).[6] This low number has led to increased attention for improving access to essential maternal health medicines and services that could end preventable maternal deaths and could meet MDG-5.

To increase access to maternal health commodities, the United Nations Commission on Life-Saving Commodities (UNCoLSC) for Women and Children was formed in 2012 under the Every Woman Every Child initiative. The UNCoLSC published a report in September 2012 that provided recommendations for increasing access to 13 essential life-saving commodities that prevent maternal and child deaths. Of those 13, 3 specifically can prevent maternal deaths caused by PPH and PE/E: oxytocin, misoprostol, and magnesium sulfate.[7] A review of existing information about those commodities showed that access is often limited, especially at the facility level. Some major challenges to increasing access to such medicines include inaccurate forecasting and quantification, weak distribution channels, inadequate storage, poor inventory management, and lack of quality data for supply chain decision making.[8]

Because of UNCoLSC's work, there has been increasing awareness that, in many settings, essential maternal health commodities are procured and distributed not only at the central level but also at the subnational level. However, there is little documentation that describes how those medicines are procured outside the central level.

Some key questions that merit exploration include the following: Are subnational procurement procedures in line with national policies? How are medicine needs estimated at the subnational level? What quality assurance mechanisms are in place, and what are the cost implications of subnational procurement? As implementing partners work to assess unmet needs for these commodities, improving access to them and ensuring their quality, one of the major issues that must be accounted for is the practice of subnational procurement of medicines and supplies.

The SIAPS program works at both the global and country levels to improve pharmaceutical management systems that increase access to quality medicines. In Bangladesh, one major area that SIAPS focuses on is strengthening procurement management systems. SIAPS has been providing support to the Ministry of Health and Family Welfare (MoHFW) and the various institutions within the Ministry to build capacity for procurement management. Efforts to strengthen procurement management, however, have been made mostly at the central level by

[4] *Countdown to 2015*.
[5] Ibid.
[6] Ibid.
[7] UNCoLSC for Women and Children.
[8] Ibid.

developing procurement guidelines, such as the DGFP *Procurement Procedures Manual* (PPM) and the MoHFW *Procurement Operations Manual* (POM), as well as quantification guidelines for maternal health commodities.

As a result of the activities SIAPS has been supporting in Bangladesh and the growing global and in-country concerns about local procurement, SIAPS developed a methodology and a set of tools to assess the effect of local procurement on the availability of maternal health medicines. Those tools were validated in Bangladesh. This report presents the results of the assessment and identifies options for the government to increase access to quality maternal health commodities through improved procurement practices.

BACKGROUND

Maternal Health in Bangladesh

Globally, Bangladesh is one of only nine countries that are on track to meet MDG-5, which aims to reduce MMR by three-quarters. From 2000 to 2010, MMR in Bangladesh decreased from 400 to 194 deaths per 100,000 live births.[9,10] That decrease is associated mostly with the drop in fertility and the increased use of facilities for both deliveries (from 9% in 2001 to 23% in 2010) and for cases of maternal complications (from 16% in 2001 to 29% in 2010).[11] Nevertheless, MMR still must drop by 25% to meet 2015 targets for MDG-5, and access to maternal health services remains low. Only 26% of pregnant women receive the recommended four antenatal visits and only 32% of births are attended by a skilled birth attendant.[12] Additionally, there are significant disparities in maternal health status between divisions within the country. For example, the 2010 Bangladesh Maternal Mortality Survey found that, although MMR in Khulna division is 74 (per 100,000 live births), MMR in divisions such as Dhaka and Chittagong are 196 and 186, respectively; Sylhet division has the highest MMR at 425 per 100,000 live births.[13]

In Bangladesh, the two leading causes of maternal deaths—PPH and PE/E—account for 31% and 20% of maternal deaths, respectively.[14] According to international guidelines, essential medicines to prevent and treat PPH and PE/E include oxytocin, misoprostol, and magnesium sulfate. However, ensuring availability of those essential maternal health medicines remains a challenge, especially at the district level. A study conducted in 2009 found that only 55% of district hospitals and 38% of upazila health complexes (UHCs) reported having oxytocin in stock on the day of the visit.[15] Availability of magnesium sulfate was also limited: only 42% of district hospitals and 23% of UHCs reported having the injection in the facility.[16]

Health System Structure for Maternal Health Services

The delivery of maternal health services at the district level in Bangladesh is divided primarily between two parallel agencies within the MoHFW: the DGHS and the DGFP. Both directorates are responsible for providing maternal health services at their respective facilities, and both procure maternal health medicines. Bangladesh's Health, Population, and Nutrition Sector Development Program (HPNSDP) for 2011 to 2016 is the government's national strategy for increasing access to quality health care and is the overarching national strategy that dictates

[9] *Countdown to 2015*.
[10] NIPORT, MEASURE Evaluation, and icddr,b.
[11] Ibid.
[12] NIPORT, Mitra and Associates, and ICF International, *Bangladesh Demographic and Health Survey 2011* (Dhaka and Calverton, MD: NIPORT, Mitra and Associates, and ICF International, 2013).
[13] NIPORT, MEASURE Evaluation, and icddr,b.
[14] Ibid.
[15] Mahmud Khan, *Bangladesh Health Facility Survey* (Dhaka: World Bank, 2009) cited in Population Action International (PAI), *Maternal Health Supplies in Bangladesh* (Washington, D.C.: PAI, 2010).
[16] Ibid.

which services—and, hence, medicines—should be available at each level of the health system for both DGHS and DGFP.[17]

The HPNSDP indicates that both directorates are responsible for providing rimary maternal health services, which include antenatal care, maternal nutrition counseling, and postnatal care, at all levels of the health system. Basic emergency obstetric care (BEmOC), which includes management and treatment of PPH and PE/E, is provided at the district and upazila levels for both DGHS and DGFP.[18]

Moreover, national standard treatment guidelines indicate that the first-line medicines to prevent and treat PPH and PE/E are oxytocin and magnesium sulfate, respectively. Additionally, because of changes in international guidelines and evidence from pilot studies in Bangladesh, misoprostol is now being recommended to prevent PPH. All three medicines are included in the national essential medicines list.

Misoprostol is relatively a new medicine and is currently in the process of being rolled out within DGHS and DGFP; however, the status of the roll-out is at different stages within the two systems. For DGHS, misoprostol was procured centrally for the first time in 2013 and is in the process of being distributed to all the districts, although, there is no official roll-out plan.[19] Among DGFP facilities, community level use of misoprostol for the prevention of PPH is being introduced nation-wide and is currently in practice in 19 of the 64 districts. In October 2013, a circular was issued by the Maternal and Child Health Services unit of the DGFP on the use of misoprostol for "Prevention of PPH after delivery at home". In addition to the 19 districts currently using misoprostol, health workers in 37 more districts have recently been trained on the use of misoprostol. By December 2014, training of health workers in all 64 districts will be completed. DGFP has also already procured up to 900,000 packets (2 tablets/ packet) of misoprostol that will be distributed to districts after they have received the training.

Table 1 indicates the maternal health services provided at the central, district, and upazila levels of the health system among DGHS and DGFP facilities, according to the HPNSDP. According to this information, DGHS and DGFP facilities should manage all three maternal health medicines at the district and upazila levels of the health system.

[17] Government of the People's Republic of Bangladesh, Health, Nutrition, and Population Sector Program, *Program Implementation Plan 2011–16* (Dhaka: Government of the People's Republic of Bangladesh, 2011).
[18] The HPNSDP for 2011 to 2016 indicates that management and treatment of PE/E should be provided at MCWCs. However, discussions with DGFP indicated that this rule is not followed because MCWCs do not have the capacity to provide magnesium sulfate because they lack trained physicians. Currently, MCWCs refer PE/E cases to district hospitals.
[19] Although there is not official roll-out plan for misoprostol with in DGHA, 400,000 tablets of misoprostol have been procures by CMSD and is currently being distributed to all the districts. Despite attempts, SIAPS was unable to get information on the distribution status.

Table 1. Public Health System Structure for Maternal Health Services for DGHS and DGFP, According to HPNSDP, 2011–16

Health system	DGHS		DGFP	
	Facility	Maternal health services	Facility	Maternal health services
Central level	Teaching hospitals	Comprehensive emergency obstetrics care (CEmOC), management and treatment of PPH and PE/E, primary maternal health services	None	None
District level	District hospitals	CEmOC, management and treatment of PPH and PE/E, primary maternal health services	Mother and child welfare center	CEmOC, management and treatment of PPH, family planning
Upazila level	UHC	BEmOC, management and treatment of PPH and PE/E, primary maternal health services	UHC	BEmOC, management and treatment of PPH and PE/E*

*Currently, use of magnesium sulfate for PE/E is still being piloted for use at MCWCs.

Procurement and Distribution of Maternal Health Medicines

Both DGHS and DGFP procure maternal health medicines and distribute them to their respective facilities. However, the procurement and distribution processes originate at different levels of the system. Within DGHS, the three medicines are procured at both the central and subnational levels. In contrast, within DGFP, the three medicines are procured only locally; no centralized procurement exists for the medicines.

National Procurement Policies and Guidelines

Procurement of all public goods, including medicines, must adhere to two national policies: the Public Procurement Rules of 2008 (PPR) and the Public Procurement Act of 2006 (PPA).[20,21] Also, if HPNSDP funding is used for procurement of public goods, including medicines, the World Bank's Guidelines for Procurement must be followed. Those policies and guidelines delineate the rules and regulations for all entities procuring goods at any level of the health system. They describe the procedures for each step of the process, such as development of the tender or proposal, assignment of the procurement committees' roles and responsibilities, preparation of procurement related documents, development of specifications, and selection of suppliers.

The USAID-funded Strengthening Pharmaceutical Systems program worked closely with DGFP to develop the PPM, specifically to provide instructions and guidance to all staff members dealing with procurement in the DGFP. This manual has consolidated and simplified the national and international guidelines, and it focuses on procuring medical products. SIAPS also worked with the

[20] Government of the People's Republic of Bangladesh, Central Procurement Technical Unit, Implementation Monitoring and Evaluation Division, and Ministry of Planning, *The Public Procurement Rules 2008* (Dhaka: Government of the People's Republic of Bangladesh, 2008).
[21] Government of the People's Republic of Bangladesh, Ministry of Law, Justice and Parliamentary Affairs, Legislative and Parliamentary Affairs Division, *The Public Procurement Act 2006* (Dhaka: Government of the People's Republic of Bangladesh, 2006).

MoHFW to develop the POM, which provides guidance about procurement of all goods for MoHFW.

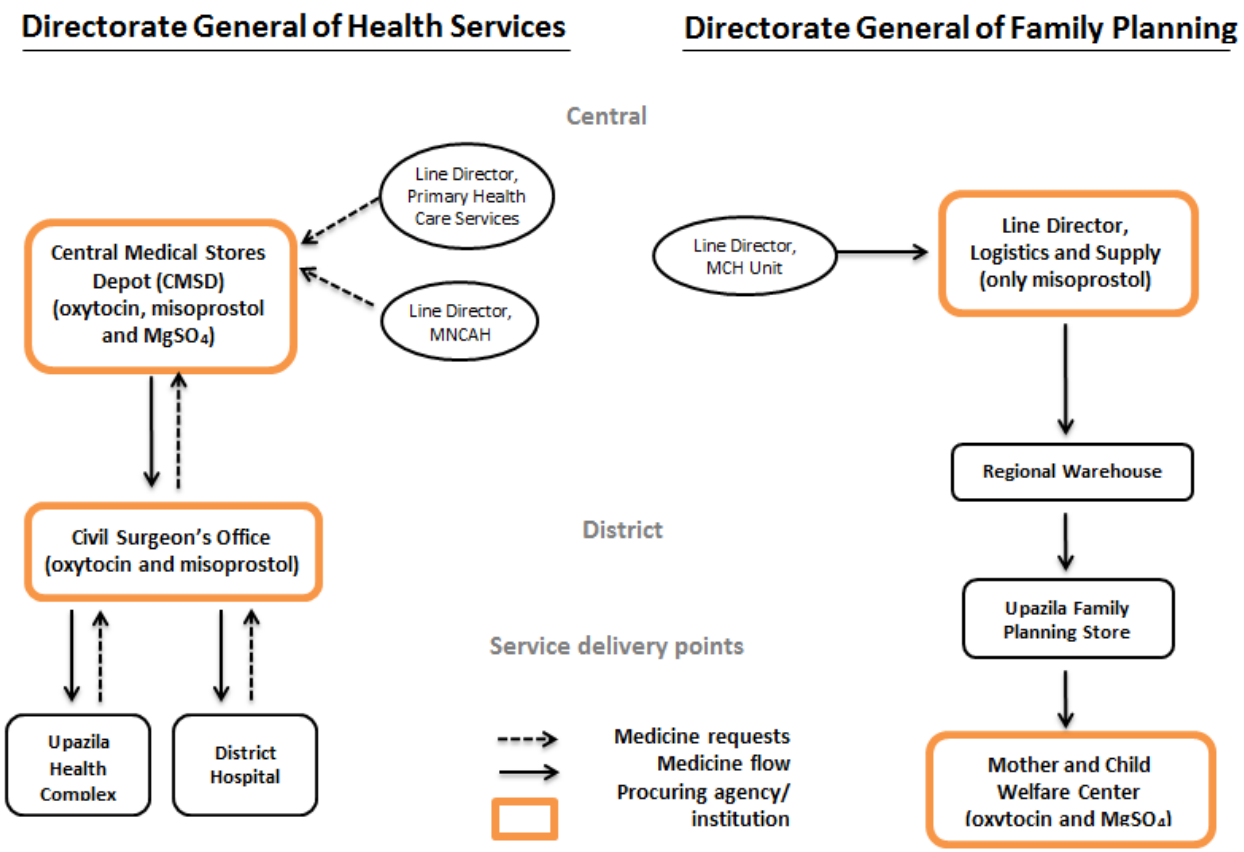
Procurement

Figure 1 illustrates the supply chain structure and flow of maternal health medicines within DGHS and DGFP.

Within DGHS, line directors (LDs) and civil surgeon offices (CSOs) request that maternal health medicines be supplied to the district level on behalf of the district hospitals and the UHCs in each district. Requests are submitted to the Central Medical Stores Depot (CMSD), which then procures and supplies the medicines on behalf of the LDs and CSOs. Of the overall budget for medicines provided to CSOs, 5% is allotted for local procurement of medicines categorized as "loose medicines," which include oxytocin and misoprostol. As illustrated in the figure below, while oxytocin and misoprostol are procured both at the central and district levels, magnesium sulfate is only procured at the central level and distributed to the CSOs.

DGFP facilities receive some commodities that are procured at the central level, such as Drugs and Dietary Kits (DDS kits) and family planning commodities; however, all of their maternal health medicines are locally procured. DGFP facilities have a quarterly procurement cycle; budget requests to the central level, which include the amount needed to locally procure maternal health medicines, are submitted each quarter.

Although DGHS and DGFP locally procure at least some maternal health medicines, information on district-level procurement processes is limited, including information about whether they adhere to national and international guidelines for procurement and whether local procurement affects—either positively or negatively—the availability of maternal health medicines. Additionally, efforts to improve procurement processes such as quantification, supplier selection, or quality assurance have mostly overlooked processes at the district level and have focused on the central level. The assessment sought to provide more insight into (a) the local procurement practices and (b) the role of ensuring that quality maternal health medicines are available at the district level.



Note: MCH = maternal child health, MNCAH = maternal, neonatal, child and adolescent health

Figure 1. Supply chain structure and flow of maternal health medicines within DGHS and DGFP[22]

[22] Note that the flow of medicines is based on the 2011-2016 HPNSDP therefore may include commodities that are still being piloted for use at the district level such as use of magnesium sulfate within MCWCs. This is currently being piloted by MaMoni in one district, Habiganj, in Sylhet division.

METHODOLOGY

Purpose and Objectives

The assessment's purpose was to understand how local procurement practices affect access to quality maternal health medicines at the district level. The assessment had the following objectives—

1) To measure the availability of maternal health medicines at selected storage and health care facilities and to determine their source

2) To evaluate local procurement practices used at the district level for essential maternal health commodities and to compare those practices to national and international standards and guidelines

3) To identify options for strengthening local procurement practices and overall procurement strategies

An assessment protocol was drafted and then reviewed by the Director of Primary Health Care and LD-Maternal, Neonatal, Child and Adolescent Health from DGHS and the Director of Maternal and Child and LD-Maternal, Child, Reproductive, Adolescent Health from DGFP. Both directorates facilitated data collection by notifying selected sites about the assessment and by authorizing the facilities to provide the SIAPS data collection team with the required information. The protocol was also shared with the SIAPS activity manager at the USAID office in Bangladesh.

Site Selection

For the assessment, representatives from DGHS and DGFP consulted, selected, and approved three divisions: Dhaka, Khulna, and Sylhet. The selected divisions were intended to represent the diversity of conditions present elsewhere in the country, such as variations in MMR and perceived capacity of the health system at the district level. Within each division, one district was selected for sampling DGHS and DGFP sites on the basis of geographic accessibility at the time of data collection. The districts selected in each division are Gazipur and Manikgonj,[23] Dhaka; Bagerhat, Khulna; and Sylhet, Sylhet.

Within each district, the sample included the CSO, District Reserve Store (DRS), district hospital, and UHC for DGHS and the mother and child welfare center (MCWC) as well as Upazila family planning store (UFPS) for DGFP. Those facilities were selected because they locally procure or manage the three maternal health medicines or do both. The CSO locally procures maternal health medicines for the district hospitals and UHCs, while the DRS stores the medicines for the CSO. Similarly, MCWCs locally procure and manage maternal health medicines, and the UFPS stores the medicines received from the central level.

[23] Note that only one DRS and one district hospital were visited in Manikgonj, Dhaka.

Table 2 shows the data collection sites sampled within each division and the types of data collected from each site.

Table 2. Data Collection Sites in Each Division and Type of Data Collected at Each Site

	Dhaka	Khulna	Sylhet	Total
Procurement				
CSO	1	1	1	3
MCWC	1	1	1	3
TOTAL	**2**	**2**	**2**	**6**
Stock Status				
DRS (for the CSO)	2	1	1	4
District hospital	2	1	1	4
UHC	1	1	1	3
MCWC	1	1	1	3
UFPS	1	1	1	3
TOTAL	**7**	**5**	**5**	**17**

Data Collection

The assessment used multiple methods to collect both quantitative and qualitative data, including literature reviews, in-depth interviews, survey interviews, record review, and direct observations.

Literature Review

SIAPS conducted a review of existing literature and background documentation related to central- and subnational-level procurement procedures in Bangladesh. It reviewed national-level policies and guidelines, including the PPR, PPA, and DGFP PPM. Overall, although some information exists regarding central-level procurement practices and assessments, information and data about subnational procurement procedures is limited, especially regarding maternal health medicines.

Central Level

Key personnel from DGHS and DGFP at the central level were interviewed to share their views about subnational procurement procedures and district-level budget development. Additionally, data were collected from CMSD about quantities of medicines that LDs and CSOs requested in the sampled districts, as well as total quantities supplied. Comparable data were not collected at the central level for DGFP sites, because that level does not supply any of the three maternal health medicines to the district level or upazila level. Data collected at the central level complements and validates the data collected at the district level. Annex A has a complete list of all informants interviewed for this assessment.

District and Sub-District Levels

Two data collection tools were developed for this assessment based on, an extensive search and review of existing procurement assessment tools. One tool in particular, the *Procurement Assessment Guide* developed by the Program for Appropriate Technology in Health, was a useful reference in developing certain elements of the subnational procurement assessment tools.[24]

Procurement Assessment Tool

The procurement assessment tool was used at three CSOs (representing DGHS) and three MCWCs (representing DGFP), which procure maternal health medicines as well as receive them from the central level. The tool collected both quantitative and qualitative data related to (a) the source of maternal health medicines, (b) financing, (c) quantification, (d) procurement guidelines, (e) procurement process, (f) product specifications, (g) supplier selection, and (h) quality assurance. For each component, documents—such as bidding documents, invoices, and requisition forms—were collected.

The procurement tool also included a stock section for which data about stock levels, including quantities received, procured and distributed, were collected directly from stock registers for the past three years (from 2011 to 2013).

Table 3 highlights the key data and related documents collected from each site for each component of the tool. Annex B contains the procurement assessment tool and list of documents to be collected at each facility.

[24] Program for Appropriate Technology in Health (PATH), *Procurement Assessment Guide* (Seattle, WA: PATH, 2009).

Table 3. Key Data and Documentation Collected for the Procurement Assessment Tool

Tool Component	Key Data Collected	Documentation
Source of maternal health medicines	• Quantities of maternal health medicines received from the central level, directly procured, or received through donations from other agencies or nongovernmental organizations • Stock-out data	Stock registers
Financing	• Price of locally procured maternal health medicines • Budget allocation for maternal health medicines for direct procurement and those supplied by the central level • Description of how the budget is developed	• Invoices • Budget requests • Actual budget
Quantification	• Quantification methods for maternal health medicines • Amounts requested from the central level	• Medicine demands from upazilas (DGHS) • Requisition forms • Documentation or calculation of last quantification exercise
Procurement guidelines	Procurement guidelines available at the district level	Copy of any procurement guidelines used at the district level
Procurement process	Information on guidelines and standard operating procedures used for procurement	Bidding and tender documents
Product specifications	Product specific specifications used in tender documents	Tender document
Supplier selection	Criteria and process for selecting suppliers	• Competitive supplier assessment • Request for quotes • Samples of documents collected from and submitted by suppliers
Quality assurance	• Information on any quality issues for maternal health medicines • Quality assurance mechanisms used at the district level	Quality certificates

Stock Status Tool

The stock status tool was developed to collect data about availability, including stock levels and stock-outs over the past 12 months, as well as data about observed storage conditions of maternal health commodities at the district-level facilities. The tool collected data about formulation, product brand, number of stock-outs within the past 12 months, day of the visit, physical inventory count, quantity of expired product, and average monthly consumption. Additionally, storage conditions were assessed for the three maternal health medicines. The stock status tool is included in Annex C.

Data Collection Period

SIAPS Bangladesh staff members conducted interviews and collected data from October to November 2013 in the three selected divisions. Data were collected from Dhaka and Sylhet divisions from September 27 to October 10, 2013, and from Khulna division from November 14 to November 18, 2013.

Data Analysis

The data were entered and analyzed in Microsoft Excel and disaggregated according to (a) directorate (DGHS or DGFP), (b) medicine (oxytocin, misoprostol, or magnesium sulfate), and (c) district. Efforts were made to triangulate data between the district and central levels. SIAPS staff members also sought clarifications when data were inconsistent or unclear.

Indicators were developed and calculated for each main component of the assessment, such as the following—

- Percentage of medicine quantity requested from the central level for each medicine that was received from the central level
- Quantification methods used at the district level and data sources used
- Number or percentage of sites using good procurement practices[25]
- Percentage of standard supplier selection criteria reportedly used by each district[26]
- Number or percentage of sites that detected any suspected quality issues for each maternal health medicine.

A complete list of the indicators can be found in Annex D.

Limitations of the Study

A general limitation of the study is reporter bias. However, this assessment also had four main limitations related to the study design and local context in Bangladesh.

First, because of budget restrictions and practicality, the sample size (three divisions) was insufficient to assess the statistical significance of the results and, therefore, was intended only to be an illustrative sample of the country. Second, because of differences in the structure of DGHS and DGFP at the district level, the size of the respective samples and the facility types included were not equivalent, which limited the strength of comparisons between the two.

Third, some weak information systems limited the data's quality, level of detail, and usefulness for evaluating maternal health medicines. Also, on the day of data collection, some data were not readily available. Although efforts were made to collect the data afterward, doing so was

[25] Management Sciences for Health (MSH), *MDS-3:Managing Access to Medicines and Health Technology*, 3rd ed. (Sterling, VA: Kumarian Press, 2013).
[26] Ibid.

sometimes not feasible or practical, especially with regard to collecting documentation. In one case, the district did not feel comfortable providing the requested documentation, despite approvals received from the central level.

Finally, language or terminology of the data collection tool, in combination with the informants' experience or familiarity with the topic, might have affected informants' interpretations of the questions. Although an interpreter (from the SIAPS local staff) who was familiar with common pharmaceutical management terms in Bangladesh was present during data collection, misinterpretation might still have been an issue, particularly when assessing procurement practices.

RESULTS

Management of Maternal Health Medicines

The HPNSDP for 2011 to 2016 states that both PPH and PE/E should be managed at DGHS and DGFP facilities at the district and upazila levels, namely at district hospitals, UHCs, and MCWCs. Although this practice was operationalized within DGHS, discussions with DGFP revealed that management and treatment of PE/E at MCWCs is not currently practiced because of the limited capacity of health care providers to administer magnesium sulfate. That is, MCWCs lack enough fulltime physicians. However, DGFP is reportedly piloting the use of magnesium sulfate at MCWCs in Habiganj district within Sylhet and intends to roll out use to other districts if the pilot is successful.[27]

The national roll-out of misoprostol at the district level is at different stages of implementation within DGHS and DGFP. The assessment team was unable to confirm the status of DGHS's misoprostol roll-out. On the one hand, discussions with CMSD indicated that it was still in the process of distributing misoprostol to all the districts. Furthermore, the exact number of districts that have received the medicine could not be confirmed. On the other hand, DGFP indicated that misoprostol has so far been rolled out in 19 districts, 2 of which were sampled in this assessment (Dhaka and Khulna). Thus, the MCWCs and UFPSs in Dhaka and Khulna are expected to be managing misoprostol.

Facilities were asked if they had managed each medicine, meaning they had procured, received, stored, or distributed the medicine at any point during 2013. Table 4 shows the percentage of facilities that reported actually managing maternal health medicines among those that expected to be managing the medicine.

Of the 11 DGHS facilities that are supposed to be managing oxytocin, 100% reported that they managed the medicine in 2013. Similarly, 10 of the 11 DGHS facilities that are expected to manage magnesium sulfate reported doing so in 2013. In the case of misoprostol, however, just over one-third of the DGHS facilities reported managing the medicine. This low number is a reflection of incomplete introduction of misoprostol. Misoprostol introduction had been initiated in the three divisions included in the assessment but not in all districts within the divisions. For DGFP, the percentage of facilities that should have been managing the medicines and the number of facilities that actually reported managing them was smaller. Only four of six facilities had managed oxytocin. One UFPS in Sylhet reported managing misoprostol in 2013, although informants said that misoprostol had not been rolled out in that district yet.

Box 1 highlights the key findings on the management of maternal health medicines.

[27] Currently there are 60 MCWCs, usually one per district. However, 10 districts have two MCWCs at the union level and eight MCWCs at the upazila level; four districts (Dhaka, Gazipur, Shatkhira, Chittagong) do not have MCWC's.

Table 4. Comparison of Expected versus Actual Management of Maternal Health Medicines, 2013

		Oxytocin	Misoprostol	Magnesium sulfate
DGHS	Expected	All CSOs, DRSs, district hospitals, and UHCs		
	Actual	100% (11/11)	36% (4/11)	91% (10/11)
DGFP	Expected	All MCWCs and UFPSs	All MCWCs and UFPSs in Dhaka and Khulna	None
	Actual	67% (4/6)	75% (3/4)	NA
Total	Actual	88% (15/17)	47% (7/15)	91% (10/11)

Box 1. Management of Maternal Health Medicines

Key findings include the following—

- According to the HPNSDP and informants at the central level, CSOs should be managing all three maternal health medicines; however, MCWCs are managing only oxytocin and misoprostol at present.
- All DGHS sites reported managing oxytocin, and the majority (with the exception of one district hospital) reported managing magnesium sulfate. All MCWCs reported managing oxytocin, and the majority reported managing misoprostol.
- Most facilities that expected to be managing oxytocin and magnesium sulfate are, in fact, managing the medicines. Discrepancies were found mostly for misoprostol, particularly among DGHS sites.

Availability of Maternal Health Medicines

The availability of maternal health medicines at the study sites was assessed (a) on the day of the visit, (b) through direct observation, and (c) over the past 12 months through stock record review. Both measures of availability were assessed to account for inherent limitations in each method and to provide a more complete perspective.[28] Availability was assessed only at sites that indicated they had managed the particular medicine at any point in 2013 (as was shown in table 4).

Availability on the Day of the Visit

The availability of maternal health medicines at the sites on the day of the visit was limited across all three divisions. Of the sites that reported managing the medicines, only 53%, 38% and 30% had oxytocin, misoprostol, and magnesium sulfate in stock, respectively. A comparison between divisions found that a higher percentage of sites in Sylhet had the medicines available on the day of the visit than did sites in Dhaka and Khulna. In Dhaka, only two of the six sites (33%) had oxytocin available, whereas in Sylhet, three of the four sites (75%) had oxytocin. In Khulna, none of the sites that reported managing misoprostol or magnesium sulfate had the medicines in stock.

[28] Reliability of direct observation is limited because direct observations are only a snapshot at one moment in time. Thus, they could detect an anomaly rather than a pattern. The reliability of record review is limited by the quality (completeness, accuracy, etc.) of record keeping.

Figure 2 shows the percentage of sites in each division that had maternal health medicines available on the day of the visit.

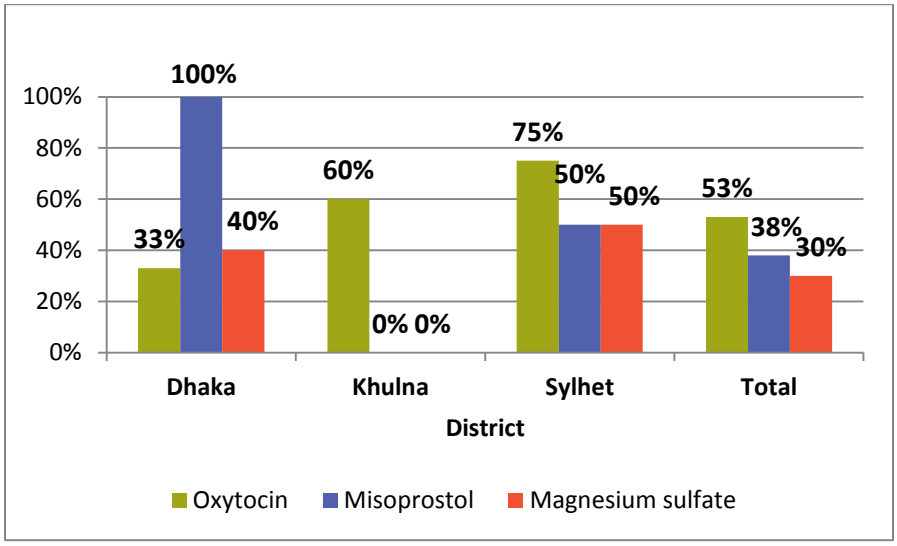
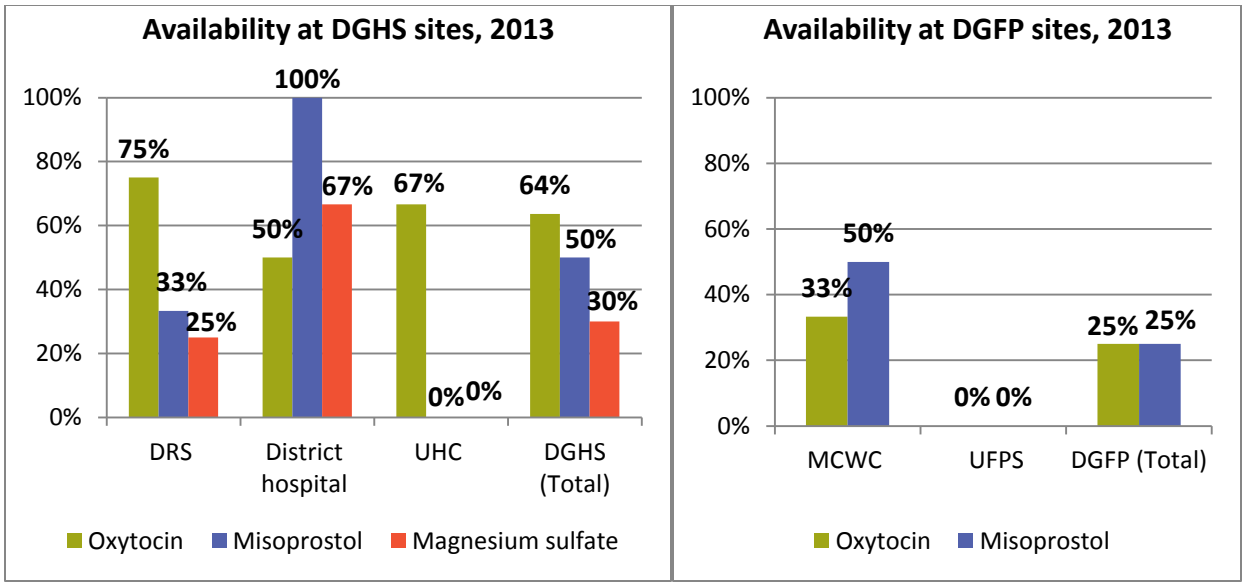


Figure 2. Percentage of sites in each division that had maternal health medicines available on the day of the visit

Disaggregated by facility type, the data show that the availability of maternal health medicines is limited among facilities in both directorates, with DGFP sites seeming to have less availability on the visit day than DGHS sites have. For example, only one of the four DGFP sites (25%) had oxytocin available, whereas 7 of the 11 (64%) DGHS sites had oxytocin available. Similarly, 50% of DGHS sites that reported managing misoprostol had the medicine available, compared with 25% of DGFP sites. Figure 3 shows the variations in availability of maternal health medicines at DGHS and DGFP facilities.

In terms of availability by facility type, among district hospitals—where UHCs and MCWCs refer serious cases of PPH—only 50% (two of four) had the medicine in stock. Additionally, although the figure shows that 100% of district hospitals had misoprostol available, one must note that the data value represents only one district hospital (n = 1) because only one of four hospitals in the sample reported managing misoprostol. In fact, according to discussions held with DGHS, district hospitals are not expected to manage misoprostol because they are tertiary care facilities and because misoprostol is meant for prevention of PPH for home-based births in the current roll-out plans.

DGHS facilities also had limited availability of magnesium sulfate. Overall, only 30% of the 10 sites that reported managing the medicine had it in stock, and one district hospital indicated it did not manage the medicine. Whereas 67% of the district hospitals had magnesium sulfate available, none of the UHCs and only 25% of the DRSs visited had it in stock. The stock-outs at the service delivery points (district hospitals and UHCs) are likely because of stock-outs at the DRSs and the CSOs.



Note: DGFP sites do not manage magnesium sulfate.

Figure 3. Percentage of sites that had maternal health medicines available on the day of the visit, 2013, by directorate and facility type

It should be noted that timing of the supply cycle greatly affects availability on the day of the visit. According to CMSD, the annual distribution of supplies to DGHS facilities from the central level occurred in the month before data collection. However, it is possible that political events, which limited transportation channels out of Dhaka in September and October 2013, also disrupted distribution.

Availability within the Past 12 Months

In some cases, the low availability of maternal health medicines (discussed earlier) did not necessarily reflect limited availability throughout the year. The availability during the past 12 months (from the time of the data collection visit) was also measured by using data collected directly from stock registers. The number of days each medicine was out of stock within the past 12 months was used to calculate (a) the average number of months each medicine was available and (b) the average number of months each medicine was out of stock among facilities that experienced stock-outs.[29] The data were disaggregated by division, directorate, and facility type.

Figure 4 shows the average number of months in the year each maternal health medicine was in stock. Oxytocin was available for an average of 7.4 months of the year, misoprostol for 9.0 months, and magnesium sulfate for 7.1 months. Only 3 of 15 sites (27%) had an uninterrupted supply of oxytocin for the full year; of the 12 sites that had stock-outs, the number of months ranged from 0.2 months (5 days) to 12.0 months. Similarly, for misoprostol, only three of eight sites (38%) had an uninterrupted supply for the full year; of the five sites that had stock-outs, the

[29] Stock status data were collected in months and, when appropriate, in days. When collected in months, the researchers assumed 30 days per month. As a result, one full year is considered 360 days.

number of months ranged from 1 month to 12 months. For magnesium sulfate, only 2 of the 11 sites had uninterrupted supply; of the nine sites that had stock-outs, the number of months ranged from 1 month to 12 months.

None of the divisions had high availability of all three medicines, which suggests the need for a better performing supply chain system. The average number of months available varied among the divisions. For example, Khulna had the highest availability of oxytocin; however, the medicine was available for 9.7 months (81% of the year), not all 12 months. Additionally in Sylhet, where misoprostol and magnesium sulfate were the least available on the visit day, both medicines were available for almost 12 months; oxytocin was in stock for only 5.4 months but was the most available on the visit day. Meanwhile, magnesium sulfate was available for less than 6.0 months of the year in both Dhaka and Khulna, but it was available for almost all 12 months of the year in Sylhet.

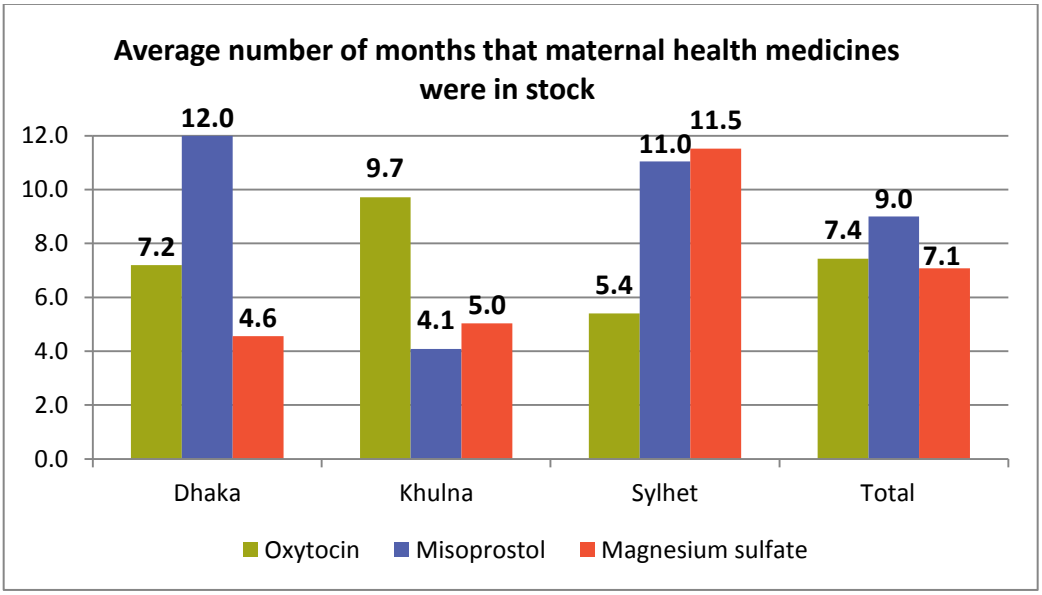


Figure 4. Average number of months that maternal health medicines were in stock (within the past 12 months), by division

When data were disaggregated by directorate (figure 5), they indicated that availability of oxytocin and misoprostol (the only maternal health medicines available in both systems) over the past 12 months was higher in DGFP than in DGHS. That finding contradicted data on day-of-visit availability. Only a small percentage of DGFP sites had oxytocin and misoprostol on that day; however, within the past 12 months, oxytocin and misoprostol were actually available 9.6 months (80%) and 8.3 months (69%) of the year, respectively. Among DGHS sites, oxytocin and misoprostol were available for 6.8 months (57%) and 3.1 months (26%). This difference may, in part, be due to the distinct supply and budget schedules of the two directorates. CMSD distributes medicines to the CSOs by September each year, whereas DGFP approves and allocates the budget quarterly for MCWCs. The difference in availability of misoprostol may also be due to the roll-out status of misoprostol at DGHS facilities.

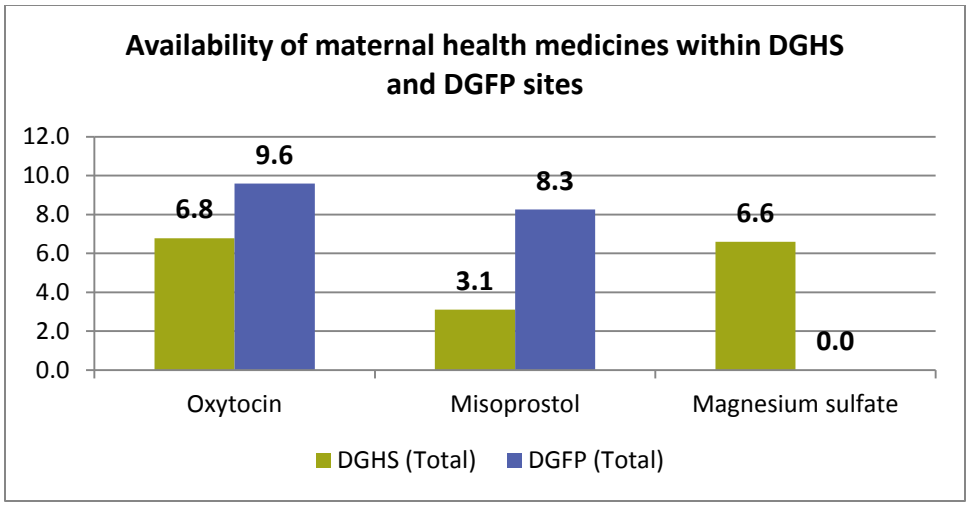


Figure 5. Average number of months that maternal health medicines were in stock (within the past 12 months), by directorate

Disaggregating the data by service delivery point (including district hospitals, UHCs, and MCWCs), which is where women go for PPH and PE/E treatment, showed that none of the service delivery points had 100% availability of any maternal health medicines (table 5). Only 2 of the 10 service delivery points had an uninterrupted supply of oxytocin. Of the eight sites that experienced stock-outs, the average ranged from 0.2 months to 11.0 months. For misoprostol, two of the three sites had an uninterrupted supply; however, the one site that experienced a stock-out did not have misoprostol available for any of the 12 months. Among the 10 DGHS sites that reported managing magnesium sulfate, only 2 had an uninterrupted supply of the medicine. The average time that magnesium sulfate was out of stock among the eight sites experiencing stock-outs ranged from 1 month to 12 months.

Additionally, there are notable differences between the three service delivery points. For example, availability of oxytocin was better at UHCs compared to the district hospitals and MCWCs. Although none of the district hospitals or MCWCs had an uninterrupted supply of oxytocin, two of the three UHCs had oxytocin available for 100% of the past 12 months. The average time that oxytocin was not available among district hospitals and MCWCs experiencing stock-outs ranged from 2 months to 11 months and 0.2 months to 6 months, respectively. For misoprostol, only one district hospital— which also had a continuous supply in the past 12 months—reported managing the medicine, and only one of the two MCWCs had a continuous supply of misoprostol. The MCWC that experienced the stock-out of misoprostol did not have the medicine for any of the past 12 months. Although two of the three district hospitals had an uninterrupted supply of magnesium sulfate, all three UHCs experienced magnesium sulfate stock-outs ranging from 1 month to 12 months. Only one district hospital had a stock-out, which lasted all 12 months.

It should also be noted that availability of the maternal health medicines at the distribution points (DRS and UFPS) is comparable to, if not worse than, the availability of medicines at the service delivery points. Among the DGHS sites, three of the four DRS sites experienced stock-outs of

oxytocin, which ranged from 3.6 months to 12 months. Of the DGFP sites, none of the UFPSs had uninterrupted supplies of either oxytocin or misoprostol; however, the average number of months those medicines were out of stock ranged from 1 month to 2 months—less than the MCWC stock-outs.

Table 5. Availability of Maternal Health Medicines within the Past 12 Months of the Assessment, by Facility Type

	DGHS			DGFP		
	DRS	District Hospital	UHC	MCWC	UFPS	Total
Oxytocin						
Number of facilities that experienced stock-outs of oxytocin within the past 12 months	3/4	4/4	1/3	3/3	1/1	12/15
Average number of months that oxytocin was out of stock within the past 12 months (range of months)	9.0 (3.6–12.0)	7.3 (2.0–11.0)	0.8	2.6 (0.2–6.0)	2.0	4.3
Misoprostol						
Number of facilities that experienced stock-outs of misoprostol within the past 12 months	2/3	0/1	NA	1/2	2/2	5/8
Average number of months misoprostol was out of stock within the past 12 months (range of months)	8.9 (8.8–9.0)	NA	NA	12.0	1.5 (1.0–2.0)	7.5
Magnesium sulfate						
Number of facilities that experienced stock-outs of magnesium sulfate within the past 12 months	4/4	1/3	3/3	NA	NA	8/10
Average number of months that magnesium sulfate was out of stock within the past 12 months (range of months)	6.8 (1.0–8.7)	12.0	5.0 (1.0–12.0)	NA	NA	7.9

Overall, the availability of essential maternal health medicines is limited across all divisions and facility types. Neither the service delivery points, (such as district hospitals, UHCs, and MCWCs) nor the entities that procure or supply the maternal health medicines or that do both (DRSs, CSOs, and MCWCs) have the medicines available 100% of the time. Those life-saving medicines should be available across all facilities mandated to manage PPH and PE/E; however, as box 2 summarizes, universal availability is not the case. Women seeking maternal health services in Dhaka, Khulna, and Sylhet do not have regular access to the medicines and either have to purchase the medicines themselves from local outlets—adding to out-of-pocket expenses associated with delivering at health facilities—or go without them.

Box 2. Availability of Maternal Health Medicines

Key findings include the following—

- Across all divisions and at sites within both directorates, availability of maternal health medicines was limited both on the day of the visit and in the 12 months before the assessment for all medicines.
- Overall availability of the three maternal health medicines, as measured by availability over the past 12 months, was low among DGHS sites. However, two service delivery sites notably differed: UHCs had oxytocin available 98% of the year, whereas district hospitals had it available only 40% of the year.
- Stock-outs of oxytocin and magnesium sulfate were common and relatively prolonged (ranging from 1 month to a whole year).
- For each of the medicines, less than 40% of facilities had a continuous supply.
- Magnesium sulfate was the maternal health medicine with the lowest availability and was rarely available at the UHCs, where PE/E is managed at the upazila level.

Sources of Medicines

Three sources of maternal health medicines were assessed: central level, local procurement, and donations. Results indicate that most maternal health medicines came from the central level or were directly procured. Less than 1% was received through donations. The data were analyzed by determining the sources of all maternal health medicines obtained in 2013 within each division and then by comparing the source of medicines between the two Directorates.

Figure 6 shows the percentage of all maternal health medicines in each district were received from the central level, locally procured, or both. Of all medicines acquired in 2013 in the three division combined, 87% were supplied by the central level and 13% were locally procured by either the CSOs or MCWCs.[30] The majority of maternal health medicines in Dhaka and Sylhet—97% and 82% respectively—were received by the central level. The opposite was found in Khulna, where 70% of all maternal health medicines were locally procured, while only 30% was received from the central level.

[30] Of all the maternal health medicines acquired in the three divisions in 2013, only 0.4 percent was received through donations.

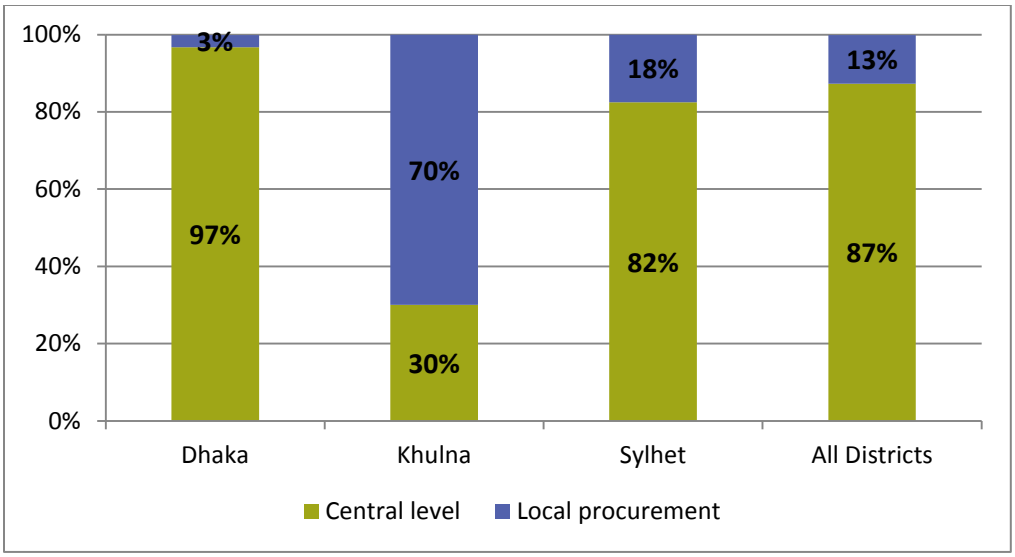


Figure 6. Source of all maternal health medicines acquired in 2013, by division

Figure 7 shows the sources of each maternal health medicine for all districts combined. Whereas oxytocin is almost equally acquired from the central level and through local procurement (58% and 42%, respectively), the central level supplies almost all misoprostol and magnesium sulfate (99% and 100%, respectively).

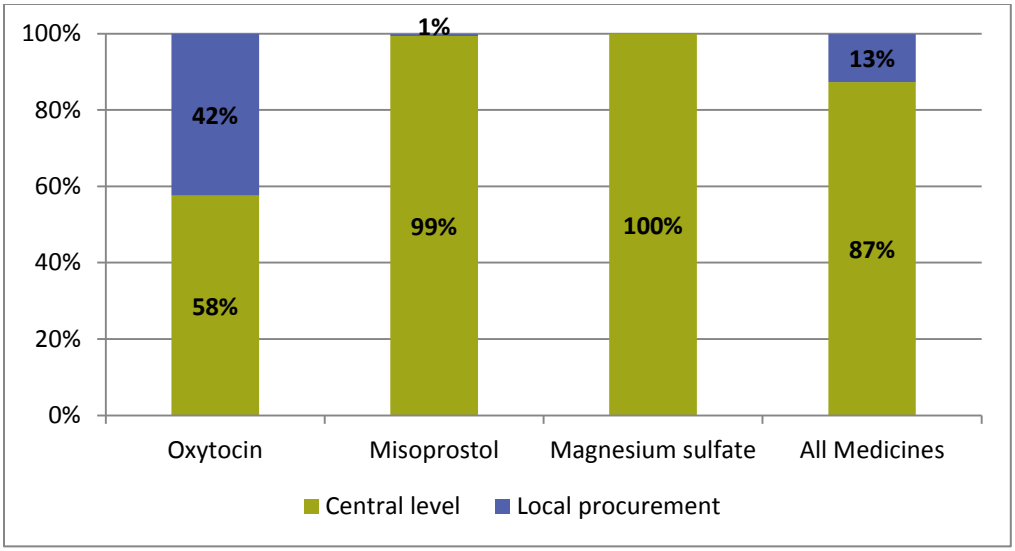
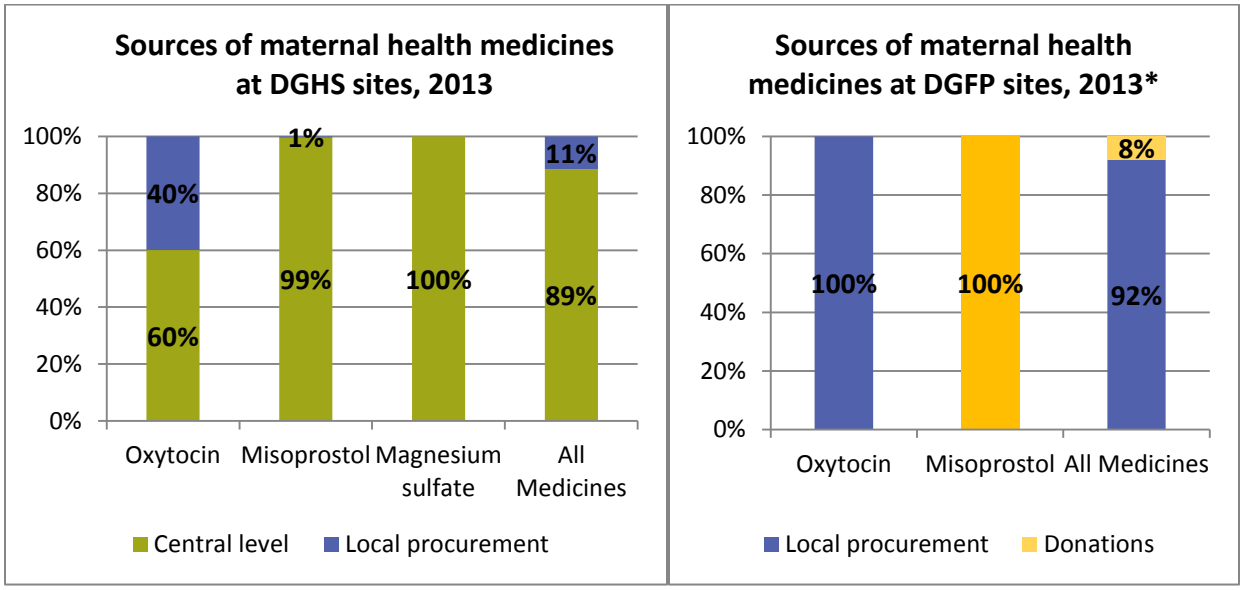


Figure 7. Sources of maternal health medicines in all districts, 2013

There were notable differences in the primary sources of maternal health medicines at DGHS sites as compared to DGFP sites. The central level, specifically CMSD, supplied 89% of all maternal health medicines at DGHS sites in the study, with the remaining 11%, locally procured

by CSOs. In contrast, 92% of all those medicines at DGFP facilities were locally procured, with the remaining 8% received through donations. The central level did not supply any of the medicines obtained from DGFP sites.

The sources of each maternal health medicine among DGHS and DGFP sites were also compared. Figure 8 shows the source of each maternal health medicine, which was combined for all three districts and was disaggregated by DGHS and DGFP. Among DGHS sites, oxytocin was both supplied by the central level and locally procured (60% and 40% respectively), and misoprostol and magnesium sulfate are almost exclusively supplied by the central level (99% and 100%, respectively). The 1% of misoprostol that was locally procured was done by the CSO in Khulna due to ad hoc requests from the UHCs. However, at DGFP sites, oxytocin and misoprostol are almost exclusively locally procured, with misoprostol accounting for 8% of total maternal health medicines received from donations. The nongovernmental organization titled Ipas donated misoprostol to the Dhaka MCWC for post-abortion care; however, the medical officer at that facility indicated the misoprostol was also used for managing PPH.



*PE/E, and thereby magnesium sulfate, is currently not being treated or managed at DGFP sites.

Figure 8. Sources of maternal health medicines at DGHS and DGFP sites, 2013

The assessment found that although local procurement appeared to account for only a small portion of maternal health medicines available at the district level (13%), local procurement accounted for a substantial proportion of the source of medicine—depending on the type of medicine, district, and directorate. For example, at DGHS sites, 40% of oxytocin was obtained through local procurement, compared with only 1% of misoprostol. For DGFP sites, 92% of all maternal health medicines were obtained through local procurement. Similarly, among DGHS sites, the contribution of local procurement to the districts' supply of maternal health medicine varied depending on the district. For example, the majority of maternal health medicines were locally procured in Khulna, compared to only 3% and 18% of medicines being locally procured

in Dhaka and Sylhet, respectively, where the central level supplied the majority of maternal health medicines. Box 3 summarizes the medicine source findings.

Box 3. Sources of Maternal Health Medicines

Key findings include the following—

- Local procurement accounted for 13% of the three maternal health medicines.
- The percentage of maternal health medicine provided by the central level versus the percentage that is locally procured varied among the districts.
- DGFP sites exclusively depended on subnational procurement for the three maternal health medicines assessed.
- Donations were not a significant source of maternal health medicines at the district level, and they accounted for merely 0.4% of all maternal health medicines combined for all districts.

Central-Level Requisition and Distribution

As demonstrated in the previous section, DGHS facilities received a significant proportion of maternal health medicines from the central level. As mentioned earlier, CMSD procured medicines on behalf of LDs, which also included maternal health medicines within their procurement plans. Discussions with CMSD found that when the procurement plans were developed, the LDs did not consider local procurement. To better understand the relationship between the supply provided by the central level and local procurement, data were collected on (a) the estimated needs at each facility and (b) the quantities requested and acquired from the central level and through direct procurement to determine how much the central level meets district level needs and how local procurement is utilized to meet these needs. The findings presented here are relevant only for DGHS because maternal health medicines were both locally procured and supplied by the central level, unlike within DGFP where they were only locally procured.

Table 6 shows the percentage of the quantity of medicines requested that the central level supplied. The quantity requested was obtained by reviewing copies of requisition forms that CSOs sent to CMSD. Although in some cases the CSO received exactly what was requested, CSOs sometimes received more or fewer medicines than requested or even received medicines without requesting any at all. Informants reported that, in those cases, CMSD may have distributed medicines that had been procured at the request of LDs for use in district service delivery points. Informants from the visited sites reported that they are told neither how much medicine the CMSD would supply nor whether the amounts would be equal to, more, or less than they requested.

Table 6. Percentage of Medicine Quantity That Was Requested and Received from the Central Level

	Dhaka			Khulna			Sylhet		
	2013	2012	2011	2013	2012	2011	2013	2012	2011
Oxytocin (%)	100	Received but NR*	NR	18	8	30	3,400	NR	100
Misoprostol (%)	100	NA		NR	NA		NR	NA	
Magnesium sulfate (%)	100	Received but NR	NR	NR	NR	Received but NR	100	525	14

*NR, none/not requested

Data gathered directly from CMSD showed that no established system exists for communication and coordination related to supplies sent from the central level to the districts. Discussions held with representatives of DGHS revealed that no systematic method was used to determine how much medicine was supplied to the district level. However, the representatives did cite budget restrictions as a factor in supplying less than what was requested. CMSD said that it would either increase or decrease the amounts of medicines supplied to the district level according to the approved CSO budget that the MoHFW sends.

Discussions with CMSD also revealed that LDs' requisitions for maternal health medicines are not compared to or consolidated with CSOs' requisitions for the same medicines. Thus, CSOs receive more or less amounts of medicines than requested. Communication of how much medicine will be supplied to the CSO comes directly and only from the supplier once CMSD purchases the medicines. CSOs are not aware of the quantities of medicines that LDs request on their behalf. Box 4 summarizes the findings.

Box 4. Central-Level Requisition and Distribution

Key findings include the following—

- Among DGHS sites, no established system existed for determining how much of each medicine the CMSD supplied to the district level. Moreover, the quantities were not based on what the central level requested.
- Because of little or no communication between the central level and district sites regarding the quantity of medicines to be provided, little or no advance planning exists for local procurement at the district level.
- The LDs, CMSD, and CSOs did not coordinate to determine medicine needs or to request medicines from the CMSD.

Local Procurement Practices

Because local procurement accounts for some proportion of maternal health medicines at the district level, the assessment aimed to evaluate local procurement practices by using international guidelines as well as national guidelines, namely PPA and PPR. This section discusses results

related to procurement practices at the district level—specifically quantification, requisition, tender process, product specification, supplier selection, procurement price, and quality assurance.

Guidance

Informants at all of the DGHS and DGFP sites referred to Bangladesh's PPR and PPA as the guidelines they use for local procurement. However, none mentioned the existence of official guidelines or standard operating procedures that are specifically for local procurement. One facility, Sylhet MCWC, indicated that it has developed its own guidelines, which consider guidelines from the Central Procurement Technical Unit. Those guidelines were not available for review and verification during the data collection visit.

All sites also reported that they use standard bidding and tender documents for procurement. However, a review of such documents clearly showed that facilities are using different versions as well as collecting different types of documents from the suppliers.

Procurement Committees

A review of national guidelines and policies, as well as discussions at the central level, indicated that all facilities procuring medicines should have a procurement committee that is responsible for the entire procurement process—from quantification to supplier selection to quality assurance. The procurement committee usually comprises 3 to 5 people, including the head physician or nurse, the chief pharmacist, the store keeper, and the head of the facility (e.g., the civil surgeon for DGHS or the medical officer at the MCWC).

All sites reported that they have a committee that is responsible for the procurement process, including medicine selection and quantification; preparation of tender documents; supplier selection (evaluation of bids and final selection); and approval of specifications such as product description, packaging and labeling, and quality assurance standards.

According to informants at CSOs and MCWCs, at least one committee member had been to one or more procurement trainings. Whereas none of the MCWC informants reported receiving training in quantification, all three civil surgeons reported that at least one person from the procurement committee had received training for quantification, but not all procurement committee members had attended quantification training. Only the informants at CSOs indicated that quantification is part of the 22-day procurement training conducted by the Central Procurement Technical Unit. None of the informants indicated that they received any refresher training on either procurement or quantification.

Quantification

Quantification—which encompasses forecasting of medicine needs and supply planning—at the district level was assessed according to the data and methods used to estimate needs and available capacity.

Forecasting Process

The forecasting process for CSOs differs significantly from the process used at MCWCs. Although CSOs must forecast medicine needs for both the UHCs and district hospitals for their district, MCWCs forecast the medicine needs only for their facility. For DGHS, all CSOs indicated that they forecast medicine needs annually, beginning with collecting medicine demands from the UHCs and district hospitals for each medicine. After consolidating those needs, the total amount for the district is reportedly adjusted and finalized. However, during discussions with informants about the process, no standard method or rationale emerged for adjusting the amounts to reflect actual need. For example, an informant at one site indicated that he generally adds 10% to the quantities that UHCs and district hospitals request, while another informant at another site said that he reduced the amount requested from the UHCs because the CSO had supplied the UHCs with excess amounts the previous year and he assumed they had stock remaining.

All CSOs indicated that they consider past consumption data when estimating medicine needs. In most cases, the data were used in combination with other data sources. Although CSOs reported using past consumption, an informant at the central level who was familiar with medicine information systems at the district and upazila levels indicated that the existing systems do not capture past consumption. Thus, CSOs may be using distribution quantities as a proxy for consumption. Once the annual forecast was finalized, a requisition was sent to CMSD. In all cases, the requisition included the total need calculated for each medicine and did not consider medicines that might be locally procured.

The CSO in Sylhet, in addition to using past consumption and morbidity data, indicated that the staff calculated upcoming expected deliveries by maintaining a newly married couples list from field workers. That list also recorded the expected date of delivery and collected data on pregnancy status in a register.

Although the assessment did not cover quantification methods and procedures at the upazila level, whether the demands that UHCs submit to the CSO consider stock on hand is questionable. For example, at the Dhaka CSO, the estimated need for oxytocin in 2012 was 6,000 ampoules. However, the CSO said that they decided not to request any oxytocin from the central level because they assumed the upazilas already had enough stock after receiving excess amounts the previous year. The assessment compensated by comparing the amounts supplied to the CSO to (a) the medicine demands the UHCs submitted to the CSO and (b) the total amounts of each maternal health medicine requested by CMSD at the central level.

Among MCWCs under DGFP, medicine needs are estimated quarterly because the MCWCs develop and receive their budgets for medicines on a quarterly basis. One facility indicated that it does not go through a formal process for quantifying its maternal health medicine needs. Although none of the sites had documentation illustrating how maternal health medicine needs are forecast, respondents described how medicine needs for PPH are determined.

The assessment found that no standard, evidence-based method was used to forecast medicine needs. For example, the MCWC in Dhaka estimates oxytocin needs according to the number of

caesarean sections performed in a quarter and assigns one full recommended dose of the medicine to each case. For cesarean sections, the staff estimates a cost of 2,500 Bangladesh takas (BDT) (USD 33), further indicating that this amount is an overestimate to cover costs related to normal deliveries. Therefore, the number of cesarean section cases is used to make budget requests, but how staff members determine the exact amount to procure once they receive their budget is unclear. Finally, although the sites reported that they are aware that a buffer stock should be maintained, no site within DGHS or DGFP reported taking buffer stock into account when forecasting needs.

Unfortunately, documentation or sample calculations were not available for review from any sites. DGFP sites rely mostly on health facility data on cases of PPH and PE/E and the number of registered patients. Table 7 indicates the data that the DGHS and DGFP sites reportedly use.

Table 7. Data Sources Used for Estimating Maternal Health Medicine Needs for DGHS and DGFP Facilities

Data	DGHS	DGFP	Total
Previous year's consumption for each medicine	3	0	3
Past distribution data	2	0	2
Hospital and health facility data on cases of PPH or PE/E	2	1	3
Number of beds in the facility	2	0	2
Number of registered patients	2	1	3
Maternal morbidity data that is based on national- or district-level health data	1	0	1
Population	1	0	1
Population growth rate	0	0	0
Birth rate	1	0	1
Other: number of expected deliveries (antenatal visits, annual marriages)	1	1	2

Procurement Procedures

The assessment used the procurement practices and the supplier selection criteria recommended and outlined in *MDS-3: Managing Access to Medicines and Health Technologies*—which is a leading reference about managing essential medicines in developing countries—as the standard for evaluation.[31] The assessment also compared reported practices to the national regulations and guidelines, notably PPR, PPA, and DGFP PPM. Each site was assessed according to how many of the 13 recommended good procurement practices were reportedly used at their site. Table 8 shows the number of sites that reported following those practices. Of the 13 good procurement practices, most sites indicated adhering to the following practices: procuring medicines by generic name, using formal supplier qualification and monitoring, using competitive procurement, and having written procedures.

[31] Management Sciences for Health (MSH), *MDS-3:Managing Access to Medicines and Health Technology*, 3rd ed. (Sterling, VA: Kumarian Press, 2013).

None of the facilities reported having a product quality assurance program. Only one site reported ordering quantities on the basis of reliable estimates of need, and one site regularly reported on procurement performance.

Table 8. Number of Facilities Reportedly Following Good Procurement Practices

Good Procurement Practices	DGHS (n = 3)	DGFP (n = 3)	Total
Procurement by generic name	2	3	5
Procurement limited to essential medicines list or formulary list (if not, uses formal approval procedures)	1	0	1
Procurement in bulk	2	0	2
Formal supplier qualification and monitoring	2	2	4
Competitive procurement	2	2	4
Sole-source commitment	1	0	1
Quantities ordered on the basis of a reliable estimate of need	1	0	1
Reliable payment and good financial management	1	2	3
Transparency and written procedures	2	2	4
Separation of key functions	2	1	3
Product quality assurance program	0	0	0
Annual audit with published records	2	2	4
Regular reporting on procurement performance	1	0	1

Table 9 shows the average percentage of good pharmaceutical procurement practices reportedly followed at DGHS and DGFP sites, separated by district. Overall, an average of 54% of the good procurement practices (7 of 13) was used at sites, with notable discrepancies between DGHS and DGFP sites. Although DGHS sites reportedly follow an average of 72% (9/13) of practices, DGFP sites reported following only 36% (5/13) practices. Specifically, the MCWC in Sylhet indicated following only 1 of the 13 good procurement practices.

It should be noted that low reporting about certain procurement practices could have resulted, in part, from a lack of technical knowledge or experience, in combination with language barriers, which could have limited the respondent's comprehension of certain technical terms.

Table 9. Percentage of Good Pharmaceutical Procurement Practices Reportedly Followed during Subnational Procurement

Directorate	Dhaka	Khulna	Sylhet	All districts
DGHS	62% (8/13)	69% (9/13)	85% (11/13)	72% (9/13)
DGFP	54% (7/13)	46% (6/13)	8% (1/13)	36% (5/13)
Total	58% (8/13)	58% (8/13)	46% (6/13)	54% (7/13)

Product Specifications

For both DGHS and DGFP sites, the only product specification included in tender documents was formulation, according to reviews of tender documents and informant reports. Tender documents include general specifications applicable to all medicines—such as a minimum of a two-year shelf life and a stipulation that "packaging must be in good condition"—as well as a list of medicines, formulations, and quantities needed. For oxytocin, which requires cold storage, cold chain requirements were not specifically mentioned. Similarly, for misoprostol, double-sided aluminum packaging is recommended to protect the medicine from moisture, but the tender document did not specify this requirement.

Supplier Selection

The criteria used to assess and select local suppliers were based on guidelines from the *MDS-3*,[32] which were also recommended within the national and international guidelines used in Bangladesh. The guide recommended 15 supplier selection criteria for procuring medicines. Table 10 indicates the number of sites that reportedly applied each criterion when selecting suppliers. Overall, some of the most common criteria used were certification documents, financial status of the supplier, and reputation. All DGHS and DGFP sites reported using all the criteria for past performance.

Table 10. Recommended Supplier Selection Criteria Reportedly Incorporated during the Supplier Selection Process

Supplier selection criteria	DGHS (n = 3)	DGFP (n = 3)	Total (n = 6)
Supplier that uses good manufacturing practices	2	1	3
Certification documents from regulatory agency regarding supplier status and compliance with good manufacturing practices	3	2	5
References from other local or foreign public procurement offices or hospitals regarding supplier's quality and service	2	1	3
Financial status of supplier	3	2	5
Reputation of supplier	3	3	6
Past performance sub-criteria:			
Participation record (whether supplier has previously failed to deliver products or has dropped bids)	3	3	6
Response to inquiries (whether supplier has responded to all inquiries or provided regular information about status of outstanding orders)	3	3	6
Delivery time	3	3	6
Adherence to delivery instructions	3	3	6
Provision of all documents at time of delivery	3	3	6
Packaging and labeling	3	3	6
Product shelf-life	3	3	6
Compliance with financial terms	3	3	6
Quality standards (whether supplier has met specifications and packaging standards, whether batch analysis was provided, and whether product exhibited high quality)	3	3	6

[32] Ibid.

Table 11 indicates the average percentage of recommended supplier selection criteria used at DGHS and DGFP facilities. Overall, more than 70% of suppler selection criteria are used at each sampled site, with only slight differences between DGHS and DGFP sites as well as among districts. The assessment also asked the informants if they have experienced any issues with the suppliers. No sites have experienced issues with suppliers for maternal health medicines.

Table 11. Percentage of Recommended Standard Supplier Selection Criteria That Are Reportedly Used by Each District

Directorate	Indicator	Dhaka	Khulna	Sylhet	Average
	Total number of good practices reported (n)	15	15	15	15
DGHS	Number of selection criteria followed	12	14	14	13
	Percentage (%)	80	93	93	89
DGFP	Number of selection criteria followed	11	12	13	12
	Percentage (%)	73	80	87	80

Quality Assurance

CSOs and MCWCs were asked (a) what actions are taken, if any, to inspect deliveries for quality issues once they receive maternal health medicines from the central level and local suppliers and (b) whether they have ever detected any quality issues with the medicines they received or procured. All sites reported that they inspect stock upon delivery; none reported the detection of quality issues or suspected quality issues at the time of delivery for any maternal health medicines managed at their facility. Also, none of the CSOs reported ever having received complaints about quality issues from the facilities they supply medicines to, such as the UHCs and district hospitals.

Regarding the testing of medicines with questionable quality, only one CSO (in Khulna) indicated that in the past it had sent through CMSD samples of suspicious products to the Bangladesh Standards and Testing Institution located in Dhaka. However, the CSO never received a response. Whether this lack of response is standard operating procedure is unknown, because no other CSOs indicated following this process.

Procurement Prices

At each facility, invoices were collected to determine the procurement price per unit for each maternal health medicine. The prices were compared to the international median supplier price as well as to the procurement price that the CMSD paid at the central level. Table 12 indicates the international supplier median price and the 2013 central and district level procurement prices per unit (in BDT) for each maternal health medicine.

Table 12. International, Central-Level, and District-Level Procurement Prices for Maternal Health Medicines (per unit BDT; USD 1 = 76 BDT)

Indicator	Oxytocin (per ampoule)	Misoprostol (per tablet)	Magnesium sulfate (per ampoule)
International supplier median price	15.2	21.5	10.1
Central level (CMSD, 2013)	7.5	9.6	66.0
District level (2013)			
DGHS			
Dhaka	9.3	NA	NA
Khulna	7.8	20.0	
Sylhet	5.0	NA	
DGFP			
Dhaka	13.9	21.0	NA
Khulna	9.2	15.0	
Sylhet	18.5	NA	

* Local procurement prices for magnesium sulfate are not applicable because it is procured only at the central level. Local procurement prices of misoprostol were used only for Khulna CSO and MCWCs in Dhaka and Khulna because they are the only sites that locally procured the medicine in 2013.

Local procurement prices were assessed only for oxytocin and misoprostol because those are the only maternal health medicines that CSOs and MCWCs locally procure. Figure 9 compares the local procurement prices for oxytocin within each district and directorate to the international median supplier price and the price CMSD paid in 2013.

Although most sites procured oxytocin for less than the international price, the prices paid locally were usually higher than the prices paid centrally by CMSD (BDT 7.5). For DGHS sites, although all sites procured oxytocin for much less than the international price, in Dhaka and Khulna, the price paid per ampoule of oxytocin was slightly higher than the price paid per unit by CMSD. Similarly, among the DGFP sites, the local procurement price for oxytocin was lower than the international price but was much higher than the CMSD price in both Dhaka and Khulna. In Sylhet, the price paid locally for oxytocin was even higher than the international median price. DGFP sites may pay higher prices because the sites procure smaller quantities of oxytocin as a result of procuring only for their own facility and only quarterly.

Regarding procurement prices for misoprostol, local prices were only slightly lower than the international median supplier price but were almost twice as high as the price paid by CMSD (BDT 9.6). For example, the MCWC in Dhaka and Khulna procured misoprostol for BDT 21 and BDT 15, respectively, compared to CMSD's price of BDT 9.6. Only one CSO (in Khulna) locally procured misoprostol. Figure 10 compares the local procurement prices for misoprostol to the international price and the price CMSD paid in 2013.

The key findings for local procurement practices are summarized in box 5.

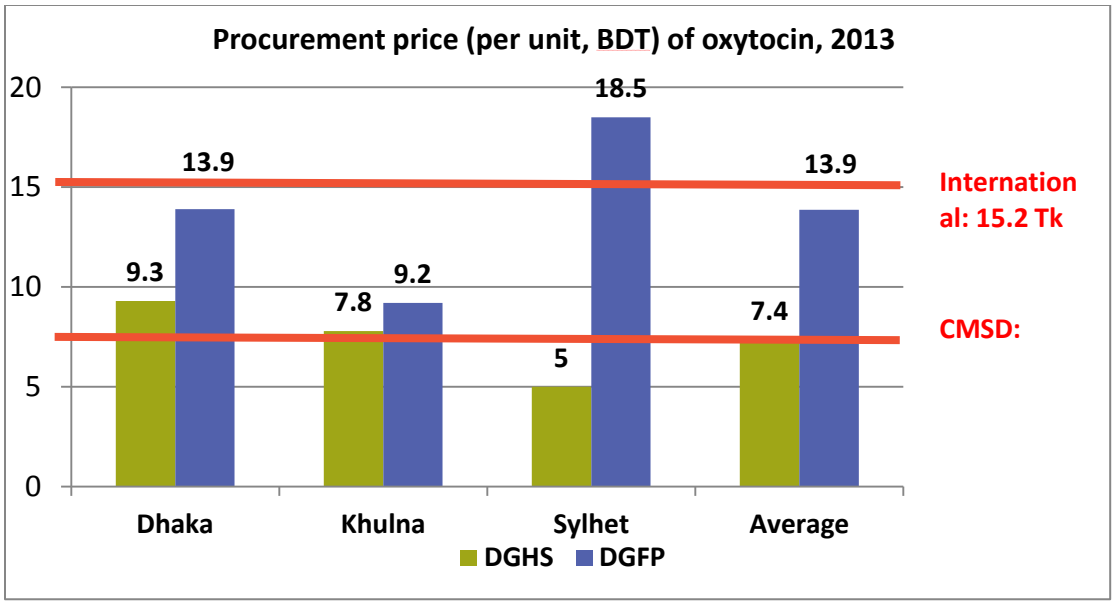


Figure 9. Local procurement prices for oxytocin compared to those of CMSD and international median supplier price, 2013

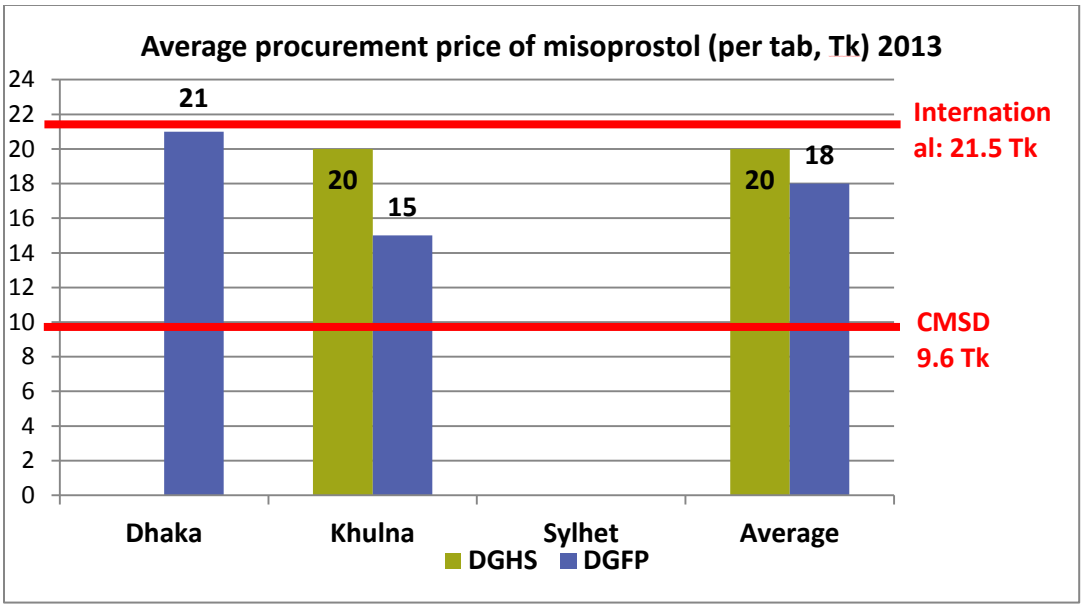


Figure 10. Local procurement prices for misoprostol compared to CMSD and international median supplier price, 2013

Box 5. Local Procurement Practices of Maternal Health Medicines

Key findings include the following—

Guidance

- All sites reported adhering to the rules and regulations under the PPR and PPA.
- Local procurement guidelines, standard operating procedures, and standardized procurement forms and documents were lacking.

Procurement committees

- All sites had operational procurement committees, but not all members of the committee had received training on procurement.

Quantification

- Both DGHS and DGFP facilities lacked specific training about quantification.
- Standard quantification methods were not being used systematically; CSOs and MCWCs applied assumptions in their forecasting that were not necessarily based on reliable data or evidence.
- It is unclear how medicine needs submitted by UHCs to the CSO were calculated and whether those calculations considered stock on hand.

Procurement practices

- The most common good procurement practices that were followed included procuring medicines by generic name, using formal supplier qualification and monitoring, using competitive procurement, and having written procedures.
- DGHS sites reportedly followed, on average, more of the good procurement practices (72 percent) than did DGFP sites (36%). The variation could be due to informants having a limited understanding of technical terms or limited experience with procurement terminologies.

Supplier selection

- All facilities used more than 70% of the recommended supplier selection criteria with only slight differences between districts and directorates.
- No sites reported having any issues with suppliers.

Procurement specifications

- District-level sites were not including product specifications specifically for cold chain storage of oxytocin and double-sided aluminum packaging for misoprostol.

Quality assurance

- All facilities reported doing a visual inspection of medicines upon delivery, but none reported having any issues with questionable quality of maternal health medicines.

Procurement prices

- Prices of medicines procured at the district level were below the international median price but were higher than central-level procurement prices, in most cases.
- MCWCs may have paid higher prices for maternal health medicines than did CSOs because of the smaller quantities procured on a quarterly basis.

Budget and Financing

The assessment sought to determine what percentage of the district-level budget for medicines is dedicated to procuring oxytocin, misoprostol, and magnesium sulfate. Unfortunately, the way budgets are structured at the district level does not allow for this type of analysis. Each medication does not have its own line item. Additionally, the budgets for CSOs and MCWCs vary in their development, organization, and allotment.

For CSOs, the budgets are developed annually and at the central level. According to discussions with the CMSD and CSOs, the MoHFW develops and approves the budget for CSOs. The budgets include a line item for medicines. That amount is disaggregated according to medicines supplied by the Essential Drug Company Ltd. and from CMSD—accounting for 75% and 20% of the medicines needs, respectively. Only 5% of the district-level budget is reserved for local procurement.

For MCWCs, the budget is developed quarterly and at the district level. The MCWCs develop their budget according to need and send the budget request to the central level for approval. The central level makes any necessary adjustments and then sends the final budget to the MCWCs.

For each site, researchers collected a copy of the facility's budget from fiscal year 2012–13 and extracted different types of data. Table 13 indicates the data extracted from the CSO and MCWC budgets.

Table 13. Data Extracted from the CSO and MCWC Budgets, Fiscal Year 2012–13

CSO	MCWC
• Total budget of the facility • Budget for all medicines only • Budget allocated for CMSD medicines • Budget for local procurement (5% of the total budget) • Total amount spent on local procurement of oxytocin and misoprostol • Total amount spent (by CMSD) on oxytocin, misoprostol, and magnesium sulfate	• Total budget of the facility • Budget for all medicines only • Total amount spent on local procurement of oxytocin and misoprostol

For both CSOs and MCWCs, because their budgets contain no line item for maternal health medicines, the assessment was able to determine how much of the budget was spent on maternal health medicines. It used only the actual quantities of those medicines that the central level supplied to the facility or the actual amounts spent locally procuring the medicines or both. Table 14 shows the percentage of the district-level budget spent on maternal health medicines from 2012 to 2013 for each district. The total percentage of the local procurement budget spent on maternal health medicines varies between districts. For example, Khulna CSO and Khulna MCWC spent 4% and 8%, respectively, of that budget on maternal health medicines while both the CSO and MCWC in Sylhet and CSO in Dhaka spent only about 1%. For the MCWC visited in Dhaka, researchers could not obtain the total budget for local procurement. Box 6 summarizes the key findings related to budget and financing.

Table 14. Percentage of the District-Level Budget Spent on Maternal Health Medicines, 2012–13

	DGHS			DGFP		
	Dhaka	**Khulna**	**Sylhet**	**Dhaka**	**Khulna**	**Sylhet**
Percentage of the total budget for the facility spent on maternal health medicines (%)	0.76	0.23	0.24	2.80	1.20	0.70
Percentage of total district budget for medicines spent on maternal health medicines (%)	1.05	0.32	0.32	17.60	9.00	0.90
Percentage of the total budget allotted for CMSD-supplied medicines that accounted for maternal health medicines (DGHS only) (%)	5	1	1	Not relevant for DGFP.		
Percentage of direct procurement budget spent on maternal health medicines (%)	1	4	1	Total budget for direct procurement unknown	8	1

Box 6. Budget and Financing

Key findings include the following—

- Budgets were developed annually at the central level for DGHS sites. The budgets were developed quarterly at the district level for DGFP sites.
- During the budget development and approval process at the central level, the district and central levels rarely, or never, coordinated.
- The total percentage of the local procurement budget spent on maternal health medicines varied between districts. For example, Khulna CSO and Khulna MCWC spent 4% and 8%, respectively, of its local procurement budget on maternal health medicines while the CSO and MCWC in Sylhet and the CSO in Dhaka spent only about 1%.

DISCUSSION

The local procurement of essential medicines—as an alternative to the more traditional practice of procuring those products for the public sector exclusively at the central level—presents both advantages and disadvantages that need to be considered carefully in the context of the overall health system. One of the potential benefits is that local procurement may be more responsive to the actual health needs of the population in a targeted geographic area, particularly when those needs differ from the national health situation.

In many settings, medicines are distributed from the central level uniformly without considering local disease patterns or epidemiology. With local procurement, the medicines and supplies most needed in a designated coverage area can be more easily prioritized. This targeting, in turn, can reduce waste and associated costs and can promote more efficient and cost-effective use of limited resources. Related to this targeting, local procurement can also allow for a faster response to needs by reducing procurement lead times and other potential delays. Thus, distribution of procured commodities to service delivery points may be faster and potentially less expensive. In addition, local procurement can facilitate maintenance of the cold chain for products that require cold storage, thereby eliminating the need to maintain cold storage for potentially long trips from the central to the regional or district levels.

However, disadvantages to local procurement must be weighed against the potential benefits. For instance, local procurement may lead to higher prices of medicines because of the smaller volumes procured or to reliance on distributors who act as intermediaries and increase prices to cover their costs. Also, capacity may be insufficient at the local level to manage procurement and may have limited mechanisms in place for building capacity (e.g., orientation of new staff members or in-service training may be lacking). Even when capacity-building opportunities exist, adequate monitoring or supervision of procurement processes might be necessary but might prove difficult to conduct. Furthermore, the local level may not be able to implement appropriate quality assurance and quality control systems because of competency and infrastructure limitations.

The assessment's purpose was to understand what the advantages and disadvantages of local procurement are in Bangladesh and how local procurement contributes to access to maternal health medicines. The assessment was not intended to define firm recommendations as to whether more central or more local procurement of maternal health medicines is advisable; rather, it sought to inform a broader discussion on potential strategies to improve access to those medicines, thereby continuing to reduce maternal mortality in Bangladesh.

An important component of enhanced access to medicines is increasing their availability within a health system, particularly at service delivery points. The three maternal health medicines—oxytocin, misoprostol, and magnesium sulfate—that were the focus of this assessment needed to be 100% available when and where women are giving birth. Although the assessment found that availability was suboptimal in all three districts visited—Dhaka, Khulna, and Sylhet—no consistent or overarching differences in availability were found when examining the source of those medicines, either from central-level or local procurement.

Among the factors that contribute to availability, or lack thereof, in all three districts and in both DGFP and DGHS sites is the blatant lack of coordination and the sharing of information between the central and subnational level, especially during the procurement, distribution, and budgeting processes. Decisions made at the central level do not take into account realities at the local level and vice versa. Local level procurement make decisions on the basis of assumptions about what the central level will procure and distribute. Even information regarding budgets allocated to the local level for medicine procurement is communicated at the last minute or not at all. Coordination between levels as well as within levels (e.g., between CMSD and LDs) is key to ensuring efficiency and cost-effectiveness within the system and ultimately is important in ensuring the availability of medicines.

Another factor that affects the availability of maternal health medicines, according to the assessment's findings—and which is likely exacerbated by the lack of coordination and information sharing—is poor quantification. Quantification includes forecasting needs and planning supply, which consider the budget available, the on-hand stock, and the stock that will be coming. The assessment found that forecasting at both the central and local levels is greatly limited by weak information systems that do not produce the information needed for good forecasting. The lack of reliable data about consumption of those medicines impedes the calculation of a robust forecast. As a result, forecasts of maternal health medicines, whether for central- or local-level procurement, are mostly based on past procurement or past distributions. This poor quantification—coupled with the lack of coordination among and within levels—creates a vicious cycle of decision making that is not based on evidence but on assumptions and guesses.

Lack of information sharing also impedes the supply-planning step in quantification. DGHS, where both central and local procurement are occurring, particularly faces supply-planning challenges. CSOs do not know how much medicine they can expect from the central level with any degree of certainty. As such, planning for local procurement either is based on their best estimates of what could be sent to them or is not planned beforehand at all, but rather is conducted on an ad hoc basis once medicines arrive from the central level or is determined in response to stock-outs.

Similarly, lack of advance information about the budget allocation for local procurement hinders the ability of both CSOs and MCFWs to plan their supply. The budget allocated for local procurement has a major effect on the availability of medicines, especially because the findings show that medicines procured at the local level cost more than those procured at the central level. This assessment did not include a thorough cost analysis to determine whether the higher local price offsets the cost of distribution from the central level, but such an analysis should be further explored.

Finally, controlling and ensuring the quality of the medicines and supplies in circulation within a health system—both in the private and public sectors—is a challenge for all countries. Ideally, an effective and efficient system should include strong product registration processes, inspection of manufacturers, and regular quality control sampling and testing to ensure that the medicines allowed to enter the country's supply system are of good quality. Moreover, countries should address quality concerns in tender documents, enforce inspection of received commodities,

encourage good storage and distribution practices, and promote pharmacovigilance to further monitor and ensure the quality of medicines once they are in circulation. To ensure that locally procured commodities are of good quality, many of the aforementioned components must be functional at the central level and, to some degree, at the local level.

Although the assessment's findings indicate that there have not been any known or suspected quality issues with maternal health medicines in the selected districts in the past three years, additional findings in this and other assessments have focused more specifically on quality assurance. Furthermore, pharmacovigilance systems have shown that the systems for preventing, detecting, and reporting problems in Bangladesh are weak.[33, 34] For example, no quality control testing is performed on locally procured medicine, and medicines are not routinely sampled once they are distributed. Also, until recently, no adverse event reporting was in place, particularly for the maternal health medicines assessed. For oxytocin, quality is of particular concern given (a) its need for cold storage and (b) anecdotal evidence of providers giving more than the recommended dose because of perceived low potency of the medicine stemming from degradation in the supply system. On the basis of oxytocin storage conditions observed in the districts visited, more product quality problems were expected.

Despite the weaknesses described earlier, many good procurement practices were observed during the assessment. Given the potential benefits of local procurement, especially as a means of avoiding stock-outs of the life-saving medicines for women, current processes and procedures could be strengthened so that the benefits can be reaped. Some suggestions for improvements are detailed in the next section.

[33] Nwokike, J., H. L. Choi. 2012. Assessment of the Regulatory Systems and Capacity of the Directorate General for Drug Administration in Bangladesh.
[34] Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program. 2013. Comparative Analysis of Pharmacovigilance Systems in Five Asian Countries

RECOMMENDATIONS

Improve coordination between the central and district levels—and even within levels. For both DGHS and DGFP, communication about procurement, distribution, and budgets needs to flow more consistently between the central and district levels to ensure the availability of maternal health medicines. Because decisions made at the central level affect the success of local procurement, central-level offices and units must coordinate and communicate better. For example, LDs and the CMSD need to work more closely so that procurement and distribution decisions, as well as program plans, are mutually understood. The various procurement and supply chain coordination groups that exist within the DGHS, DGFP, and MoHFW, such as the Logistics Coordination Forum and the Procurement and Logistics Management Cell, provide an opportunity to advocate for increased coordination and to develop strategies to this end.

Strengthen pharmaceutical information systems to provide the data needed for robust forecasting and supply planning. For both central-level and local-level procurement with DGFP as well as DGHS, pharmaceutical information systems are required to capture consumption and inventory management data. The Supply Chain Information Portal already in place in DGFP is a good start, with misoprostol being recently included. DGFP should consider including oxytocin in this system, followed by magnesium sulfate, so that consumption of those commodities can be tracked at all levels and used for quantification.

For DGHS, need for an improved information system is particularly important because medicines are being procured at both the central and local levels. Ideally, with improved information systems, LDs would have access to consumption data that would assist them in creating more accurate forecasts, which could then be reconciled with inventory management data, such as stock on hand, to inform CMSD procurement decisions. All of this information could be available to civil surgeons to inform their decisions regarding local procurement.

Improve the capacity of staff members at the local level to manage procurement processes. Although the assessment indicates that many good procurement practices are followed at the local level, mechanisms have been established to build or maintain the capacity of staff members involved in procurement. People engaged in procurement at the local level—for example, members of the procurement committees—should be trained about procurement of essential medicines, including quantification, in a simplified and targeted course that addresses their specific responsibilities and conditions. Guidance materials about local procurement should also be developed so that procurement committees have a more practical reference than the PPRs and PPAs. SIAPS recently developed a POM to provide practical guidance about implementation of the PPA and PPR. A companion piece that is specifically focused on local procurement could be an excellent resource for local procurement committees.

Strengthen oversight of local procurement processes. In addition to the obvious transparency and accountability benefits of increasing oversight, an improved oversight—particularly through supportive supervision—could contribute to building the capacity of staff members engaged in local procurement. The MoHFW should consider incorporating supervision of local procurement practices in regularly scheduled supervision visits. Simple checklists could be developed to

facilitate those visits. Such checklists would allow supervisors to advise local procurement committees about areas for improvement and to provide direct instruction. Periodic audits of local procurement that assess what medicines and supplies were procured, in what volume, and at what cost should also be considered.

Strengthen quality assurance and control systems for essential medicines. The systems need to be strengthened and expanded at all levels of the health system, especially where procurement of medicines is occurring, including the district level. Strengthening the quality assurance and quality control systems will require (a) training, (b) development of standard operating procedures and other reference materials, (c) supervision, and (d) creation of information systems. The role of subnational health offices, store houses, and facilities in ensuring product quality—as well as the mechanisms in place for them to report suspected product quality issues to the central level—should be clearly defined and documented.

Review the sources of maternal health medicines and procurement mechanisms currently in place, and define a holistic strategy that ensures access to quality maternal health medicines. As Bangladesh continues its efforts to reduce maternal mortality, equitable access to quality maternal health medicines and supplies is critical. The MoHFW should reexamine the intent of local procurement of those medicines in the context of the health system and its goal of mortality reduction, and it should define expectations for the contribution that local procurement will make to improve access to the medicines. DGHS will need to decide if the budget allocated for local procurement is meant to cover procurement in response to emergency stock-outs alone, if the budget is meant to procure items that are not procured at the central level, or if the local procurement of some medicines (such as oxytocin) is meant to address other challenges (e.g., cold chain distribution).

DGFP will need to decide if local procurement alone is sufficient to ensure access to maternal health medicines at its facilities or if some centralized procurement is merited. Regardless of whether more or less local procurement is encouraged, the country should have a clear understanding of how local and central procurement interact and contribute to ensuring access. Once this understanding is reached, the procedures and systems to support the procurement mechanisms need to be established or strengthened.

ANNEX A. LIST OF ALL INFORMANTS INTERVIEWED AT THE CENTRAL LEVEL

Name	Title
Dr. Mohammad Sharif	Director -Maternal And Child Health (MCH) & Line Director-Maternal, Child, Reproductive, Adolescent Health From(MCRAH), DGFP
Dr. Tapash Ranjan Das	Deputy Director-MCH, DGFP
Dr. Fahmida Sultana	Deputy Director (DD)-Services, MCH Unit, DGFP
Dr. Munir Ahmed	DPM-Local Purchase and Assistant Director (AD)-S&D, CMSD
Ms. Shamsunnahar	Desk Officer, Procurement, CMSD

ANNEX B. PROCUREMENT ASSESSMENT TOOL

Data Collection Tool for Assessing Sub-National Procurement Practices for Maternal Health Commodities in Bangladesh

PURPOSE AND OBJECTIVES:

A methodology and set of tools have been developed to facilitate the investigation of the sources of essential maternal health commodities at the sub-national level, and where relevant, the practices employed to procure these commodities. The purpose of this assessment is to identify options for the government to increase access to quality maternal health commodities through improved procurement practices and more efficient use of existing funds.

Specifically, the objectives of this assessment are to:

- To understand the procurement practices being employed at the district levels for essential maternal health commodities and compare those practices to national and international standards and guidelines;
- To measure the availability of essential maternal health commodities at select storage and health care facilities and the source(s) of those commodities; and
- To develop recommendations and options for strengthening local procurement practices and overall procurement strategies in order to improve access to quality maternal health commodities.

QUESTIONNAIRE

The main questionnaire is specific to the direct procurement of maternal health medicines. In the case where a facility does not directly procure maternal health medicines BUT directly procures other medicines, there is a second questionnaire to assess procurement practices for medicines in general. In order to determine which questionnaire to use, ask the following questions:		
A.	**Does this facility directly procure maternal health medicines?** *If yes, please continue with this questionnaire.	☐ Yes ☐ No
B.	**If not, does this facility directly procure any medicines in general?** *If yes, continue with the GENERAL PROCUREMENT questionnaire.	☐ Yes ☐ No

Section 1: General Information

1.	Date:	
2.	Interviewer:	
3.	Division:	
4.	District:	
5.	Upazila:	
6.	Name of the facility:	
7.	DGHS or DGFP:	
8.	Respondent Name:	
9.	Number of years/ months working in this facility:	

Section 2: Sources of Medicines

1. **Ask the following questions in the table regarding sources of maternal health medicines.**
   **Ask for data from 2010 only if there is no data for 2013. When information is given, ask the respondent to show you where he/she is getting this information. These data can be found in the following forms: Requisition forms (DGFP); Receipts/ invoices; stock registers.*

	Oxytocin				Misoprostol				Magnesium sulfate			
	2013	2012	2011	*2010*	2013	2012	2011	*2010*	2013	2012	2011	*2010*
Did you request from the central level? (Y/N)												
If yes, how much did you request? *Ask to see the requisition forms showing how much they requested from the central level and collect copies of this.												
Did you receive from the central level within the last three years? (Y/N)												
(DGFP only) If yes, did you receive from the Central Warehouse for Family Planning?												
If yes, how much did you receive?												
(DGHS) If yes, did you receive from Central Medical Stores Depot (CMSD)?												
If yes, how much did you receive?												
(DGHS) If yes, did you receive from the Essential Drugs Company Limited (EDCL)?												
If yes, how much did you receive?												
Did you procure directly within the last three years? (Y/N)												
If yes, how much did you procure directly at the local level?												

	Oxytocin				Misoprostol				Magnesium sulfate			
	2013	2012	2011	*2010*	2013	2012	2011	*2010*	2013	2012	2011	*2010*
Did you receive any donations directly from donors at the district level? (i.e. not supplied from central level) (Y/N)												
If yes, how much did you receive?												
Stock out data												
Was there a stock out? (Y/N)												
If yes, how many days/ months was the stock out?												
What did you do when there was a stock out of maternal health medicines in your district?												
Did you request emergency stock from the central level? (Y/N)												
Did you procure emergency stock? (Y/N)												
Was stock shifted to your district from another district? (Y/N)												
Did you make adjustments in the next forecast												
Nothing												
Other, please indicate												

Section 3: Financing

1. **Price of medicines procured locally.**
   **Ask to see the invoices from 2013, 2012, 2011, and 2010 and record the formulation, unit (amp/ vial, tablet) and procurement price per unit.*
   **Ask if the costs include CIF* *CIF (cost, insurance and freight); note that "freight" in regards to local procurement is similar to any transportation costs.

Medicine	Formulation	Unit	PROCUREMENT PRICE PER UNIT					
			2013	2012	2011	***2010***	CIF (Y/N)	International median price
Oxytocin								
Misoprostol								
Magnesium sulfate								

2. How is the annual budget for medicines developed? Please describe what aspects are included in the budget.
*Because there is very little information on budgets at the local level, record what the respondent describes and prompt for more information (using the questions below to guide you)

	Details/Notes:
Is your budget for medicines on an annual, semi-annual or quarterly basis? *This question is based on the differences we saw in Sylhet and Dhaka MCWCs visited. Ask them to show you the budgets from the most recent year and collect a copy of the documents.* ***Indicate the year of the budget that is provided.***	
Do you develop your own budget or does the central level develop the budget for you? Do you develop your own budget for medicines and then ask for approval from the central level or is the budget developed for you at the central level and given to you? **If they develop their budget and then ask for approval, ask them to describe the process for developing their budget.*	

Record the total budget for medicines in 2013 or 2012 (depending on the most recent data they have available).	
If they receive their budget from the central level, ask the following information:	
What is this budget for medicines based on?	
What information do you provide to the central level to help them determine your budget? *For example do you provide the central level with information on:* - Coverage population - # of patients in the last year - # of hospital beds at the facility or upazila (s) - Amount spent in the prior year (including any adjustments for money not spent and/or additional money requested to address shortages) - Demand from the Upazilas or service facilities	

A. Budget information (Civil Surgeon):

	Civil Surgeon, DGHS
Budget Period	
Total Budget	
Total budget for all medicines, only	
Total budget allocated for EDCL medicines	
Total budget allocated for CMSD medicines	
Of this, how much was allocated for oxytocin or how much was provided by the central level?	
Of this, how much was allocated for misoprostol or provided by the central level?	
Of this, how much was allocated for magnesium sulfate or provided by the central level?	
Total budget for direct procurement of medicines	
How much was allocated for or spent on direct procurement for oxytocin?	
How much was allocated for or spent on direct procurement for misoprostol?	
How much was allocated for or spent on direct procurement for magnesium sulfate?	

B. Budget information (MCWC):

*If the budget is quarterly, input the information for each quarter and if it is annual, input the information in the "Total" column.

	MCWC, DGFP				
Budget Period (year)					
	Q1	**Q2**	**Q3**	**Q4**	**Total**
Total Budget					
Total budget for medicines, only					
Total budget for central level					
How much was allocated for oxytocin or provided by central level?					
How much was allocated for misoprostol or provided by central level?					
How much was allocated for magnesium sulfate or provided by central level?					
Total budget for direct procurement of medicines					
How much was allocated for or spent on direct procurement for oxytocin?					
How much was allocated for or spent on direct procurement for misoprostol?					
How much was allocated for or spent on direct procurement for magnesium sulfate?					

Section 4: Quantification and Forecasting

1.	Do you calculate the total amount of maternal health medicines needed in your (district)**?** Mark the MH medicines for which needs are calculated (based on which medicines are managed at this facility)	☐ Oxytocin ☐ Misoprostol ☐ Magnesium sulfate
2.	**If yes, how often are needs estimated?**	☐ Quarterly ☐ Semi-annually ☐ Annually ☐ Other, indicate how often: _____
3.	**Who is responsible for calculating needs?**	
	a. Name of lead person:	
	b. Title	

Notes on the quantification and forecasting process

Now I will be asking for information on the process for estimating the maternal health medicine needs for the district.

	Details/Notes:
1. When do you begin estimating needs for medicines or determining how much to request from the central level? Also, indicate which month this typically begins.	
2. What types of information do you collect when determining how much to order from the central level? **Based on what the respondent says, mark which data sources apply in the second table below.** Calculating medicine needs will most likely be the same for all medicines, but ask whether there are any differences between each medicine.	
3. Do you collect data from the upazilas/ service facility? What types of data do you collect? How often do you collect it?	
4. What do you do once you receive the data from the upazilas/ or service facility (for MCWCs)? How do you consolidate this data? Is this the final number that you request to the central level? If not, what changes do you make? ***Civil Surgeon**: Do they collect demand from the upazilas (similar to Dhaka case)? Collect copies of the demand from the upazilas from 2010-2013. Record the demands from the Upazilas below	

(number 6), for each year and medicine (depending on which medicines are managed at this level). ***MCWC**: What types of documentation, if any, do they have for actual need? Do they collect demand from the service facility? Based on this, collect copies of the type of documentation they have. For example, in Manikgonj, the MCWC determined actual need using total number of CS cases and cost for treatment.	
5. Do you take into account stock data in your calculations?	
Do you consider stock on hand when estimating needs?	
Do you account for/make adjustments for any stock outs that occurred in the previous year?	
Do you consider buffer/ safety stock?	

	Oxytocin (Y/N)	**Misoprostol (Y/N)**	**Magnesium sulfate (Y/N)**
Past Consumption/ Distribution Data			
a. Did you request quantities based on how much was consumed the prior year?			
b. Did you request quantities based on past distribution?			
Health Facility Data/ Service Data			
c. Hospital/ health facility data on cases of PPH or PE/E?			
d. Number of beds in the facility			
e. Number of registered patients			
f. Other			
Morbidity Data			
g. Maternal morbidity data based on national or district level health data			
h. Maternal mortality data based on national or district level health data			
i. Other			
Demographic Data			
j. Population			
k. Population growth rate			
l. Birth rate			
m. Other			

6.	Can you provide me with a copy of the tool or calculation sheet that is used for quantification of maternal health medicines? *Ask to see a calculation sample from the last procurement. - Civil Surgeon office might have this in the form of demand received from the upazilas (like in Gazipur). Collect copies of this from the last three years because this will also have data on the demand and estimated actual need. - MCWC: Ask for copies of the last calculation done.	☐ Yes ☐ No
7.	Have you received any training in quantification?	☐ Yes ☐ No
	a. If yes, how often?	1. Quarterly 2. Semi-annually 3. Annually 4. Other, indicate how often: - _____
	b. When was the last training and who conducted the training?	

Total actual estimated need:

Ask them to show you the calculations they did for estimating the total actual need and make copies of this.

*Civil Surgeon: Do they collect demand from the upazilas (similar to Dhaka case)? Collect copies of the demand from the upazilas from 2010-2013. Record the demands from the Upazilas below, for each year and medicine (depending on which medicines are managed at this level).

*MCWC: What types of documentation, if any, do they have for actual need? Do they collect demand from the service facility? Based on this, collect copies of the type of documentation they have.

Medicine	Total Actual Estimated Need			
	2013	**2012**	**2011**	***2010***
Oxytocin				
Misoprostol				
Magnesium sulfate				

Section 5: Procurement Guidelines

1.	**Who is responsible for procuring medicines at this facility?**	
	a. Name of lead person:	
	b. Title:	
2.	**Is there a procurement committee that specifically works to procure medicines?**	☐ Yes ☐ No
	a. If yes, what are the responsibilities of the committee? Mark all that apply.	☐ Drug selection ☐ Quantification/ forecasting of needs ☐ Determining procurement quantity ☐ Preparing tender documents ☐ Supplier selection (evaluating bids and final selection) ☐ Approval of specifications (product description, packaging and labeling and quality assurance standards)
	b. How often does the committee meet?	☐ Quarterly ☐ Semi-annually ☐ Annually ☐ Other, indicate how often: - _____
	c. When did the committee meet last?	
3.	**Have you received any training on procurement procedures?**	☐ Yes ☐ No
	a. If yes, how often are the trainings?	☐ Quarterly ☐ Semi-annually ☐ Annually ☐ Other, indicate how often: - _____
	a. When was the last training?	
4.	**Are there standard operating procedures or guidelines for procuring medicines?**	☐ Yes ☐ No
	Are the reference guidelines PPR 2006 and PPA 2008? Ask the respondent to show you the copies of these guidelines.	☐ Yes ☐ No
	Do they refer to any other guidelines or documents?	☐ Yes ☐ No
	a. If yes, ask the respondent to show you and provide a copy of the guidelines. If the guidelines are too long, then only record the information in question 5, below.	☐ Yes ☐ No
5.	**Details for the SOPs/ guidelines** *If there is a copy on hand, record each of the following. If not, only ask about the source.	
	a. Title:	
	b. Year:	

	c. Source: **For other, indicate,* for example, Save the Children, EngenderHealth, WHO, UNFPA, etc.	☐ MoHFW ☐ DGHS ☐ DGFP ☐ Other: _____
6.	**Contents of the guidelines.** *If you have a copy of the guidelines then mark all that apply. If they are unable to show or give you the guidelines or able to refer to guidelines you are unable to obtain a copy of, then ask what topics are covered in the SOPs or guidelines	☐ Estimating needs ☐ Bidding ☐ Tendering ☐ Evaluating and selecting suppliers ☐ Other topics:

Section 6: Procurement Process

Notes on Procurement Procedure

Now I will be asking you to describe the procurement process and steps in detail:

Procurement process/ steps	**Details/ Notes**
1. When the procurement committee first meets, what is the first thing that is done? For example, you mentioned earlier, needs are calculated annually/ quarterly. Once you have estimated your needs, what do you do next?	
2. After the demand is sent to the central level and you receive the budget from the central level, how do you determine how much MH medicines to directly procure?	
3. When you have determined how much is needed for direct procurement, what do you do next? For example, do you develop a request for quotes (RFQ)? Can you give me an example of the last RFQ done for oxytocin? Collect a copy of this.	

In general, do you use the following procurement procedures practices?

Indicate all that apply (Y/N) and NA for those not applicable:

Procurement Practices	(Y/N)
a. Procurement by generic name (INN, specifies quality standards not specific brands)	
b. Procurement limited to EML or formulary list (selects safe, effective and cost effective drugs; if not, uses formal approval procedures)	
c. Procurement in bulk	
d. Formal supplier qualification and monitoring (based on drug quality, reliability of services etc.; approve suppliers before tendering [prequalification] or after [post-qualification])	
e. Competitive procurement (i.e. competitive bidding, use only selected supplies for restrictive tenders and evaluate suppliers if open tenders)	
f. Sole-source commitment (i.e. all contracted goods come from selected suppliers)	
g. Orders quantities based on reliable estimate of need	
h. Reliable payment and good financial management (prompt payments made)	
i. Transparency and written procedures	
j. Separation of key functions	
k. Product quality assurance program(sending samples to laboratory)	
l. Annual audit with published records (i.e. to show compliance with procurement procedures)	
m. Regular reporting on procurement performance	

Section 7: Product Specifications

**Only fill this section out if the tender documents have specific product specifications for the MH medicines. Most likely they will only contain the formulation and shelf-life, but double check to make sure.*

Procurement process:	Details/ notes:
1. Do the tender documents contain specific product specification or only the formulation and quantities needed? What other types of information is included in the tender/ bidding documents?	
2. Once the RFQ is sent out, what is the next step? What documents/ information do you collect from the supplier? Collect an example (preferable a supplier for oxytocin) and list out the different information collected.	

3. Are there specific tender documents for MH commodities? If yes, collect a copy of the tender documents that indicate specifications and indicate for which medicine it was given:	☐ N/A ☐ Oxytocin ☐ Misoprostol ☐ Magnesium sulfate
4. Do the tender documents contain any specifications for the three commodities?	☐ Yes ☐ No
a. If yes, what are they based on?	☐ MoHFW agency o *Guidance from DGHS* o *Guidance from DGFP* o *Guidance from DGDA* o *Other:* _____ ☐ International guidelines o *WHO* o *US Pharmacopeia* ☐ Recommendations/criteria determined by lead pharmacist/medical officer in the facility ☐ Other: _____

Product Specifications	**Oxytocin**	**Misoprostol**	**Magnesium sulfate**
5. In the tender documents given, are their specific product specifications for the maternal health medicines? (Y/N)			
a. Formulation			
Are there any specifications about formulation? (Y/N)			
If so, what are they?			
b. Storage			
Are there any specifications about storage conditions? (Y/N)			
If so, what are they?			
c. Shelf-life			
Are there any specifications about shelf-life? (Y/N)			
If so, what are they?			
d. Packaging			
Are there any specifications about packaging? (Y/N)			
If so, what are they?			
e. Pre-shipping and shipping			
Are there any specifications about Pre-shipping and shipping? (Y/N)			
If so, what are they?			

Section 8: Supplier Selection

Procurement process:	**Details/ notes:**
1. In general, what is the time frame for when you have sent an RFQ/ advertisement and received the quotes and documents from the suppliers?	
2. How do you decide which suppliers to select? Is there a pre-selected list of suppliers? Who gives this to you? Do you have the list with you? Can you provide me with a copy of this list?	
3. Do you do a competitive assessment for supplier? What is the criteria you use for this? Can you provide me with a copy of the competitive statement for the last procurement? Refer to questions below regarding supplier selection to guide you on the criteria used.	
4. In general, how long does it take to select the supplier?	
5. Are there standard bidding documents? Please provide copies of all standard documents used in the procurement process.	
6. How long does it take for you to make the payment to the supplier? Are there any procedures done prior to payment to the supplier? What are they?	

7. What are the criteria by which suppliers are evaluated and selected?
*Instructions: Based on the responses given above, mark Y/N/ NA for each of the following good practices. If the respondent did not address any of the following or if you need the respondent to confirm then ask whether the criteria is followed. Mark 'NA' for those procedures that are not applicable for Bangladesh.

Criteria	(Y/N)
a. Supplier uses Good Manufacturing Practices (GMPs)	
b. Certification documents from regulatory agency regarding supplier status and compliance with GMPs	
c. References from other local or foreign public procurement offices or hospitals regarding supplier's quality and service	
d. Financial status of the supplier (i.e. financial stability, will the supplier remain in existence for the entire procurement period?)	
e. Reputation of the supplier (i.e. among knowledgeable physicians/ pharmacists; information from public sources concerning supplier's performance locally or in other countries)	
Past performance:	
f. Participation record (has the supplier previously failed to deliver product or dropped bids?)	
g. Response to inquiries (supplier responds to all inquiries and provides regular information on status of outstanding orders)	
h. Delivery time (delivers on time, lead time for last procurement, % of late shipments and additional costs incurred)	
i. Adherence to deliver instructions	
j. Provision of all documents at the time of delivery	
k. Packaging and labeling (correct dosage form, correct quantity and package size, labeling complete and adequate for proper use, language)	
l. Product shelf-life (meets contractual terms, replaced products or returned credit for those that did not meet specifications)	
m. Compliance with financial terms	
n. Quality standards (meets specifications, batch analysis provided, product quality, meets packaging standards)	

	Oxytocin	Misoprostol	Magnesium Sulfate
8. Have you ever encountered problems identifying a supplier with sufficient quantities? (Y/N)			
9. Have there been any issues with supplier performance? (Y/N)			
a. If yes, please describe:			

Section 9: Quality Assurance

1.	**Are the shipments visually inspected upon arrival to check if they meet specifications and quality standards?**	☐ Yes ☐ No
2.	**Have you experienced any quality issues with any of the maternal health commodities?**	☐ Yes ☐ No

3. What do you do when you know or suspect, based on your visual inspection that the stock received is of bad quality?

4. Quality issues detected for maternal health medicines.

If the facility has experienced quality issues with any of the three maternal health commodities, describe what quality issues were detected for:

	Oxytocin	**Misoprostol**	**Magnesium sulfate**
a. Detected at the time of delivery from central level? (Y/N)			
Please describe:			
b. Detected at the time of delivery of locally procured medicines? (Y/N)			
Please describe:			
c. Have any quality issues been reported by any facilities? (Y/N)			
Please describe:			

Section 10: General Questions

1. Would you prefer to handle procurement of maternal health commodities at local level? Why?

2. What have been the greatest challenges in procuring maternal health commodities at the local level?

3. Would you prefer more maternal health commodities to be supplied from central level? Why?

Facility Checklist for Documents Needed for Sub-National Procurement Assessment

	Document	*Examples*	*Check if received:*
1.	**Tender documents:**		
	Tender requests		
	Purchase orders		
	Supplier evaluation forms (or equivalent)		
	Purchases/receipts/invoices (for maternal health medicines)		
2.	**Procurement guidelines/manual/SOPs** (or any other guidance docs, training materials, etc.) used at the facility		
3.	**Quantification/ forecasting tool** and/or copy of last quantification calculation		
4.	**Budget information for local procurement:** ***** *Please make sure to clarify what the budget amount they're giving you is for, i.e. does it include just meds, meds and supplies, or meds, supplies and equipment.*		
	Total budget for local procurement of all medicines		
	Budget specifically for MH commodities		
5.	**Requisition forms** (what was requested from central level)		
6.	**Delivery receipts from the central level**		
7.	**Delivery receipts (or equivalent term) for any DONATIONS** received at the district level, and not from CMSD (would likely be directly from the donor).		
8.	**Stock Registers** (data on stock status, stock-outs)		

ANNEX C. STOCK STATUS TOOL

Stock Status Data Collection Form

Facility Name: _____ Date: _____

District: _____ Interviewer: _____

Division: _____ Type of Facility: _____

Upazila: _____

Product	Unit of count	Managed at this facility? (Y/ N)	Formulation (s)	Product Brand	Stock-outs with in the last 12 months (note how far back the data goes)	Physical inventory (Quantity)	Stock-out today (on physical count) (Y/ N)	Quantity of expired product	Avg. monthly consumption (if they have it)
1	2	3	4	5	6	7	8	9	10
Misoprostol	Tab								
Oxytocin	Amp								
Magnesium Sulfate	Amp								

Storage conditions	Oxytocin	Misoprostol	Magnesium sulfate	Comments
1. Are products stored and organized according to First Expiry First Out (FEFO) procedures? (Y/N)				
2. Are boxes and products in good condition? (Y/N) (i.e. are there any torn, stained, waterlogged, leaking products, etc.)				
3. Are boxes and products protected from water and moisture? (Y/N) 4. (i.e. is there any shelving or pallets to keep products off the floors)				
5. Are products protected from direct light and the sun at all times? (Y/N)				
6. Are there thermometers and/or temperature records within the facility to record/ monitor the temperature? (Y/N)				
If yes, record the current temperature of the storage facility.				
7. Is oxytocin stored in cold chain between 2 and 8°C? (Y/N)				
If yes, indicate how it is stored (i.e. in a refrigerator, cool box, in the shade)				
If yes, record the temperature that it is stored.				
8. Have there been any product quality issues with the three commodities? (Y/N)				
If yes, please describe.				

ANNEX D. LIST OF INDICATORS

1. **Availability:**

   - Total number of each MH medicine in each district (disaggregated by year)
   - Unmet need (or excess) in each district
   - % of sites with stock-out of each medicine, total and by district (3 study districts, as well as other districts pending availability of baseline assessment data)
   - % of stores with stock-out of each medicine, by district and central level

2. **Sources of medicines:**

   - % of total of each medicine received from central level, by district
   - % of total of each medicine procured at district level, by district
     - % of sites that procured MHs medicine locally – all MH medicines combined (i.e. any MH medicine); disaggregated by medicine; disaggregated by DGHS/DGFP
   - % of total of each medicine received through direct donation (if/where applicable), by district
   - % of quantity *requested* from central level of each medicine that was *received* from central level, by district

3. **Budget/Financing**

4. **Procurement**

   a. Quantification and Forecasting

   - Number/% of districts for which a quantification has been done
   - Number/% of district-level sites that received some kind of training in quantification

b. Procurement Procedures

- Number/% of district-level sites that have/use a procurement committee
- Number/% of sites that have received training in procurement procedures/guidelines
- Number/% of sites that have/use copy of procurement guidelines
- Number/% of sites that reported using standard tender/bidding documents
- % of good procurement practices (13) reportedly followed by each of the districts
- % of standard supplier selection criteria (15) reportedly used by each of the districts
- Number/% of sites that reported problems with suppliers having sufficient quantities of MH medicines
- Number/% of sites that reported problems with supplier performance with respect to MH medicines

5. Prices

- Central level price of each medicine as a % of the international median price
- District-level prices of each medicine as a % of the international median price
- District-level prices of each medicine as a % of the central level price
- Note any significant price differences year to year

6. Quality assurance

- Number/% of sites (procurement sites and facilities) that reported a quality problem of any kind with MH medicines
- Narrative on testing requirements as outlined in procurement procedures for central-level, district-level
- Number/% of sites that reported quality analysis requirement as part of local procurement process