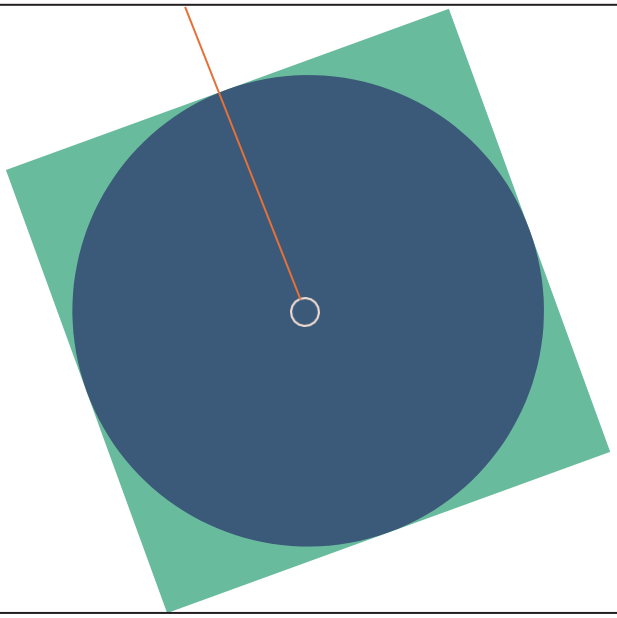
Working paper March 2023

Facility Readiness and Service Provision in Mother and Child Welfare Centers (MCWCs) in Bangladesh:

Where Do We Stand?



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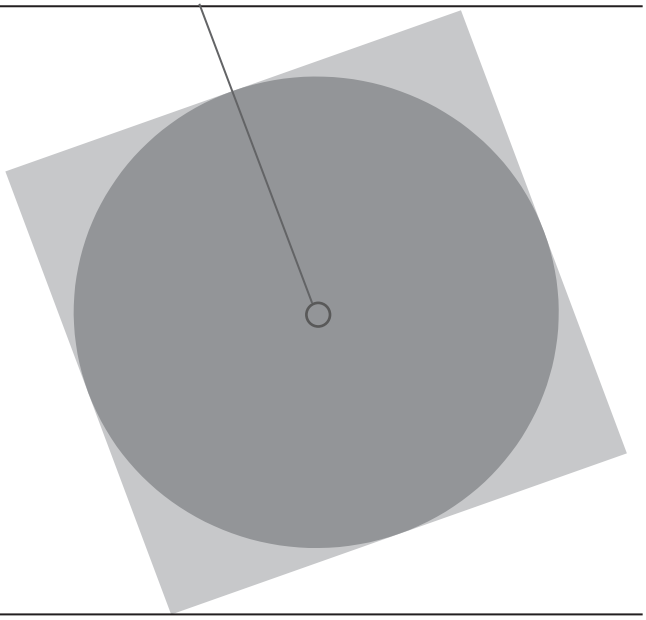

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Contents

Abbreviations

ANC	antenatal care
BEmOC	basic emergency obstetric care
BHFS	Bangladesh Health Facility Survey
BMMS	Bangladesh Maternal Mortality and Health Care Survey
CEmOC	comprehensive emergency obstetric care
CME	continuing medical education
DGFP	Directorate General of Family Planning
GOB	Government of Bangladesh
MCH	maternal and child health
MCWC	Mother and Child Welfare Center
MMR	maternal mortality ratio
MOHFW	Ministry of Health and Family Welfare
MSR	medical and surgical requisites
NIPORT	National Institute of Population Research and Training
NVD	normal vaginal delivery
PNC	postnatal care
RH-EOC	reproductive health emergency obstetric care

Introduction

Country Context—Maternal Mortality

Between 1990 and 2010, the maternal mortality ratio (MMR) in Bangladesh decreased from 574 maternal deaths per 100,000 live births to 194 maternal deaths per 100,000 live births according to the Bangladesh Maternal Mortality Survey (BMMS) 2010. This remarkable progress, a result of many health and non-health interventions, led the Government of Bangladesh (GOB) to commit to reducing the MMR to 143 deaths per 100,000 live births by 2015 and increasing skilled attendance at birth to 50 percent by 2015. The BMMS 2016, however, estimated the MMR to be 196 per 100,000 live births. This finding indicates no change between the BMMS 2010 and the BMMS 2016 MMR estimates because the 95 percent confidence intervals of these two estimates overlap. The BMMS 2016 found that almost half (49 percent) of women reported that they had at least one complication during pregnancy, delivery, or after delivery. Among women reporting maternal complications, 46 percent sought care from a health facility.

Mother and Child Welfare Centers

The GOB established Mother and Child Welfare Centers (MCWCs) in 1975 to provide specialized maternal, child health, and family planning (FP) services and to prevent complications during pregnancy and childbirth. The MCWCs are mandated to be equipped with emergency medicine, instruments, and trained and skilled staff. The MCWCs are located at the district, upazila, and union levels. The level of service provision and care is not the same at all levels due to differences in trained skilled staff, infrastructure (i.e., how many beds are allocated for service delivery), supplies, and equipment. MCWCs at the district level have more staff, equipment, and essential and emergency drugs for rendering comprehensive services to mothers and children than those at the upazila and union levels. There are, however, some common services available across all levels of MCWCs. At present, 96 MCWCs are functioning and providing reproductive health-emergency obstetric care (RH-EOC) services throughout the country under the leadership of the Directorate General of Family Planning (DGFP). There are three types of MCWCs in Bangladesh:

1. **Comprehensive Emergency Obstetric Care (CEmOC) MCWCs**: Comprehensive reproductive health (RH)/FP services including EOC are available. These CEmOC MCWCs are situated mostly at the district or upazila levels.
2. **Basic Emergency Obstetric Care (BEmOC) MCWCs**: Comprehensive RH services are not available. However, basic EOC services are available. These BEmOC MCWCs are situated at the district level, however, there are some at the Upazila level as well.
3. **Non-EOC MCWCs**: No EOC services are available. However, normal vaginal delivery (NVD) is available. These are mostly situated at upazila level.

MCWC Readiness Assessment

In 2019, the Mother and Child Health (MCH) unit of the DGFP requested assistance from MEASURE Evaluation/Data for Impact (D4I) and MaMoni MNCSP, Save the Children in development of a database on MCWCs readiness to provide health services based on the 2017 Bangladesh Health Facility Survey (BHFS) findings. The database to be developed would provide MCWC managers with up-to-date information on MCWC readiness to provide services, assist

with estimating staff and logistic needs, and improve the raising of requisitions for depleted products and supplies. Managers at regional and central levels would be able to categorize the readiness status of MCWCs and use the categorizations to make management planning decisions for service improvements in the MCWC system.

The 2017 BHFS dataset was provided by the National Institute of Population Research and Training (NIPORT) and analysis support was provided by the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b).

Objectives

The objectives of the assignment were to:

i. map the MCWCs (i.e., matching the DGFP listed MCWCs with those included in the 2017 BHFS dataset);

ii. produce a readiness inventory of required staff service provision guidelines, equipment and supplies, and medications, as per the range of services provided by an MCWC;

iii. categorize the MCWCs based on their readiness statistics; and

iv. identify gaps for each of the MCWCs based on specific services.

Methods

The service provision standards and procedures manuals of the Ministry of Health and Family Welfare (MOHFW) were used to determine the MCWC facility requirements for staff, guidelines, equipment and supplies, and medications, as well as infection prevention protocols. Variables for each requirement were created. Variables received a value of 1 if that requirement was fulfilled, and a value of 0 if not, based on the 2017 BHFS data on staff, guidelines, equipment and supplies, and medications.

A scoring scheme was developed to categorize each MCWC based on two layers of information. The first layer scores the range of services provided from that MCWC, which include:

- General service readiness
- Child health
- Family planning
- Antenatal care (ANC),
- Delivery and newborn care
- Caesarian section
- Postnatal care (PNC)
- Adolescent health
- Nutrition services

The second layer scores readiness based on the availability of the following components (as applicable[1])

- Service availability
- Guidelines
- Staff training
- Equipment and supplies
- Medications and commodities
- Standard precautions

This scoring scheme categorizes the general readiness of the facility based on selected items needed for all services, as well as readiness for the provision of particular health services.[2] To develop the scoring scheme, a weighting algorithm was used to provide appropriate weights for the services and readiness elements. This can be seen in Appendix A. Using this scoring scheme, an MCWC receives a score between 0 and 100. Within an MCWC, scoring is done for each service provided by the MCWC (such as child health, family planning, etc.), thus providing a readiness score for each specific health service.

To determine the scores and weights, a series of online and one-on-one consultations were held with the DGFP managers and subject and technical experts. Based on these consultations, each health service and its corresponding readiness component were given a weight.

The DGFP managers and technical experts came to a consensus to consider the three classification categories—A, B, and C—shown in Table 1. An MCWC classified as Category A

[1] Different sub-categories were used for general service readiness, adolescent health services, and nutrition services. See Appendix A for further details.
[2] A detailed spreadsheet with information on the total and item-specific scores for individual health facilities was developed and provided to DGFP and MaMoni for their planning purposes.

means that the facility is almost ready to provide services or needs minimal readiness inputs. Similarly, Category B MCWCs are partially ready; and a Category C facility is not ready at all and requires major inputs.

Table 1. Category and scoring table

Category type	Scoring	Status
Category A	**≥80%**	Almost ready (minimum inputs required)
Category B	**50-79%**	Partially ready (Some inputs required)
Category C	**<50%**	Not ready (major inputs required)

The study team obtained a MCWC list from the DGFP and matched it with the BHFS 2017 list. A total of 84 facilities (out of 96, according to DGFP list) were found on both lists and were assessed (Table 2).

Table 2. Number and types of matched MCWCs, by division

No	Division	Number and type of MCWCs			Total
		CEmOC	BEmOC	Non-EOC	
1.	Barishal	7	1	0	8
2.	Chattogram	12	2	3	17
3.	Dhaka	10	0	3	13
4.	Khulna	11	1	1	13
5.	Rajshahi	7	1	3	11
6.	Rangpur	10	0	2	12
7.	Sylhet	4	0	2	6
8.	Mymensingh	4	0	0	4
	Total	**65**	**5**	**14**	**84**

Findings

Based on this categorization of MCWCs, 13 percent of MCWCs were in Category A and a large majority of the facilities (76 percent; 64 out of 84) fell under Category B (partially ready, some inputs required) for general service readiness (Table 3). Eleven percent of MCWCs were in Category C, indicating the need for major inputs to make these facilities ready to provide services. The findings for readiness to provide specific health services were poorer compared to the findings of general service readiness. There were no MCWCs that were ready to provide child health services, a fundamental component of healthcare provided by MCWCs. Less than four percent of MCWCs were found ready to provide family planning or ANC services, also basic and essential healthcare components provided by MCWCs.

It is noteworthy that more than three-quarters of MCWCs were *not ready* to provide caesarian section, more than half were not ready to provide adolescent health services, and two-thirds were not ready to provide nutrition services.

Table 3. Number of MCWCs in each category for each service

Type of service	Category A Ready (minimum inputs required)	Category B Partially ready (some inputs required)	Category C Not ready (major inputs required)	Total
General service readiness	11	64	9	84
Service-specific readiness				
Child health	0	42	42	84
Family planning	3	68	13	84
ANC	3	58	23	84
Delivery and newborn care	2	53	29	84
Cesarean section	0	20	64	84
PNC	2	45	37	84
Adolescent health	6	33	45	84
Nutrition services	4	24	56	84

Among the 84 MCWCs that were analyzed for this assignment, 65 are CEmOCs, meaning they are mandated to provide comprehensive RH/FP services including an EOC program offering Cesarean sections. However, Table 4 shows that none of the CEmOC MCWCs were ready to provide Cesarean section services. A large majority, 71 percent, (46 out of 65 facilities) fell under Category C, meaning they require major inputs to provide this mandated function for CEmOC MCWCs.

Table 4. Number of CEmOC MCWCs in each category for each service

Type of service	Category A Ready (minimum inputs required)	Category B Partially ready (some inputs required)	Category C Not ready (major inputs required)	Total
General service readiness	11	53	1	**65**
Service-specific readiness				
Child health	0	34	31	**65**

Type of service	Category A Ready (minimum inputs required)	Category B Partially ready (some inputs required)	Category C Not ready (major inputs required)	Total
Family planning	3	56	6	**65**
ANC	2	46	17	**65**
Delivery and newborn care	2	44	19	**65**
Cesarean section	0	19	46	**65**
PNC	2	36	27	**65**
Adolescent health	6	25	34	**65**
Nutrition services	4	16	45	**65**

Only five MCWCs analyzed for this assignment were BEmOCs, which are mandated to provide basic RH/FP services including normal delivery. Table 5 shows that none of the BEmOC MCWCs were ready to provide delivery services. However, a majority (4 out of 5) could be classified as Category A with some inputs.

Table 5. Number of BEmOC MCWCs in each category for each service

Type of service	Category A Ready (minimum inputs required)	Category B Partially ready (some inputs required)	Category C Not ready (major inputs required)	Total
General service readiness	0	5	0	**5**
Service-specific readiness				
Child health	0	3	2	**5**
Family planning	0	5	0	**5**
ANC	0	5	0	**5**
Delivery and newborn care	0	4	1	**5**
Cesarean section	NA	NA	NA	
PNC	0	4	1	**5**
Adolescent health	0	2	3	**5**
Nutrition services	0	4	1	**5**

NA = not applicable

The remaining 14 MCWCs analyzed were non-EOC facilities, mandated to provide basic services. None of the facilities were ready to provide all services and all require at least some inputs (Table 6).

Table 6. Number of non-EOC MCWCs in each category for each service

Type of service	Category A Ready (minimum inputs required)	Category B Partially ready (some inputs required)	Category C Not ready (major inputs required)	Total
General service readiness	0	6	8	**14**
Service-specific readiness				
Child health	0	5	9	**14**
Family planning	0	7	7	**14**
ANC	1	7	6	**14**
Delivery and newborn care	NA	NA	NA	
Cesarean section	NA	NA	NA	
PNC	0	5	9	**14**
Adolescent health	0	6	8	**14**
Nutrition services	0	4	10	**14**

NA = not applicable

Discussion

The 2014 BHFS and 2017 BHFS indicated poor conditions in MCWCs in Bangladesh, with no improvement over time (NIPORT, et al., 2016; NIPORT & ICF, 2019). Our analysis echoes the same situation; for general service readiness, only about one-in-eight MCWCs were found ready, one-in-ten were not ready at all, and three-in-four were partially ready.

The detailed database provided to DGFP—a spreadsheet listing individual facilities by item-specific scores—derived from this exercise (data not shown in this report) could help identify the problems associated with readiness and assist in planning timely requisition orders to replenish supplies and medicines to avoid stockouts and thus improve the management of MCWCs. However, this spreadsheet/database is a static system. Elements of this spreadsheet base could be developed into a dynamic system aimed at improving the efficiency of MCWC management and supporting quality service delivery. This would require additional support for software programming to optimize it as an interactive dashboard-like application for use by the managers to input their needs/requisition orders directly into the system.

The DGFP managers have expressed demand for an interactive database to assist with planning for refurbishment and renovation of MCWCs' physical infrastructure. Since the BHFS does not collect information on physical infrastructure, the database developed for this exercise cannot be used for this purpose. This is a limitation of the database. However, it is possible to include additional information on infrastructure in future data collection activities and incorporate that information into future analysis.

Recommendations

Based on the overall findings of the analysis, it is evident that the readiness of MCWC facilities to provide high quality services is inadequate. To provide high quality services, emphasis should be given to the following activities:

- Ensure the availability of general amenities, skilled staff, and guidelines.
- Repair/renovate the physical facilities of the centers.
- Ensure running water and continuous electricity supply and improve the security system of the facility.
- Provide needs-based deployment of human resources and regular capacity development opportunities for service providers, including:
    - regular trainings;
    - short-term courses; and
    - continuing medical education (CME) sessions.
- Ensure timely procurement of all essential drugs, MSR, and equipment as per the standard service packages and other logistics.
- Improve minimum laboratory diagnostic services (hemoglobin test, blood glucose, urine protein, urine glucose, urine pregnancy test).
- Build on this categorization exercise to develop an interactive dashboard, where service providers and managers can directly assess the requirements and take measures for the requisition of supplies and other service-related orders.

References

National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), and ICF International. (2016). *Bangladesh Health Facility Survey 2014*. Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT, and ICF. Retrieved from https://dhsprogram.com/pubs/pdf/SPA23/SPA23.pdf

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Appendix A

MCWC's Service Readiness Categorization

Category Type and Status

Each facility was placed under a category based on its score in the exercise. Table 1 shows the category type and readiness status.

Table A1. Category type and status

Category type		Readiness status
Category A	≥ 80%	Ready (minimum inputs required)
Category B	50-79%	Partially ready (some inputs required)
Category C	< 50%	Not ready (major inputs required)

Categorization Scoring System

The first step in categorizing the services of the MCWCs was to review the BHFS 2017 questionnaire. Then specific health service indicators were grouped together by service and by sub-categories under each service. Each service was given a weight based on the number of sub-categories included under that service. That weight was used to calculate a total score (not shown in this report but included in the spreadsheet submitted to DGFP). This weighting approach was based on a series of consultation meetings among representatives from DGFP, MEASURE Evaluation/D4I, and MaMoni. Table A2 summarizes the number of sub-sections (weight) and the total number of items (indicators) for each service. The detailed scoring template for general service readiness and service-specific readiness can be found in Tables A3 and A5 of this document, respectively. Tables A4 and A6 illustrate the calculations for a hypothetical MCWC.

Table A2. Summary scoring template

	Indicators	Number of sub-categories (weight)	Total number of service items (indicators)
A	**General service readiness[3]**	**6**	**32**
B	**Service-specific readiness[4]**		
1	Child health	6	44
2	Family planning	6	133
3	Antenatal care (ANC)	6	36
4	Delivery and newborn care[5]	6	54
5	Cesarean section[6]	6	68

[3] Details for general service readiness can be found in Table A3.
[4] Details for general service readiness can be found in Table A5.
[5] Considered for BEmONC facilities, as per the DGFP list.
[6] Considered for CEmONC facilities, as per the DGFP list.

	Indicators	Number of sub-categories (weight)	Total number of service items (indicators)
6	Postnatal care (PNC)	6	18
7	Adolescent health	1	2
8	Nutrition	1	2
	Total	**44**	

Scoring for General Service Readiness

General services were divided into six sub-categories:

i. Basic amenities
ii. Basic management system
iii. Capacity to process instruments for reuse
iv. Standard precautions
v. Staffing
vi. General facility-level cleanliness

Each sub-category was given one point and the MCWCs were scored based on the scores for each of the six sub-categories (Table A3). The score for each sub-category is the sum of the 0-1 scores for each item within that sub-category divided by the total number of items in the sub-category. Table A4 illustrates the calculation of the general readiness score for a hypothetical MCWC.

Table A3. Scoring template for general service readiness

	Indicators	Score
A	**General service readiness**	**/6**
1	**Basic amenities[5]**	**/7**
1.1	Regular electricity[7]	1
1.2	Improved water source[8]	1
1.3	Privacy during consultation[9]	1
1.4	Client latrine[10]	1
1.5	Communication equipment[11]	1
1.6	Computer with Internet access[12]	1
1.7	Emergency transport[13]	1
2	**Basic management systems**	**/4**
2.1	Staff training[14]	1
2.2	Supervisory visit[5, 15]	1
2.3	Regular QA activities[5, 16]	1
2.4	Client opinion and feedback[5, 17]	1
3	**Capacity to process instruments for reuse[5]**	**/3**
3.1	Equipment and knowledge of process time[18]	1

[7] Facility is connected to a central power grid and there was no interruption in power supply lasting for more than two hours at a time during normal working hours in the seven days before the survey, or facility has a functioning generator with fuel available on the day of the survey, or else facility has back-up solar power.

[8] Water is piped into facility or piped onto facility grounds, or water is available from a public tap or standpipe, a tube well or borehole, a protected dug well, protected spring, or rainwater or bottled water, and the outlet from this source is within 500 meters of the facility.

[9] A private room or screened-off space is available in the general outpatient service area that is a sufficient distance from other clients so that a normal conversation could be held without the client being seen or heard by others.

[10] The facility has a functioning flush or pour-flush toilet, a ventilated improved pit latrine, or composting toilet.

[11] The facility has a functioning land-line telephone, a functioning facility-owned cellular phone, or a private cellular phone that is supported by the facility.

[12] The facility has a functioning computer with access to the Internet that is not interrupted for more than two hours at a time during normal working hours, or the facility has access to the Internet via a cellular phone inside the facility.

[13] The facility has a functioning ambulance or other vehicle for emergency transport that is stationed at the facility and had fuel available on the day of the survey.

[14] Derived from the Health Worker Interview Questionnaire from the BHFS 2017. At least half of all interviewed providers reported that they had received any in-service training as part of their work in the facility during the 24 months before the survey. This refers to structured sessions; it does not include individual instructions that a provider might receive during routine supervision.

[15] Facility reports that it received at least one external supervisory visit from the district, regional, or national office during the six months before the survey.

[16] Facility reports that it routinely carries out quality assurance (QA) activities and had documentation of a recent QA activity. This could be a report or minutes of a QA meeting, a supervisory checklist, a mortality review, or an audit of records or registers.

[17] Systems asked in the survey for determining client opinion are: suggestion box, client survey form, client interview form, official meeting with community leaders, informal discussion with clients or the community, email, facility's website, letters from clients/
community, and text/SMS messages. (Documentation of system not observed.)

[18] Processing area has functioning equipment and a power source for the processing method and the responsible worker reports the correct processing time (or equipment automatically sets the time) and processing temperature (if applicable) for at least one method. Definitions for capacity for each method assessed were functioning equipment and the following processing conditions:

- Dry heat sterilization: Temperature at 160°C–169°C and processed for at least 120 minutes, or temperature at least 170°C and processed for at least 60 minutes.
- Autoclave: Wrapped items processed for at least 30 minutes; unwrapped items processed for at least 20 minutes.
- Boiling or steaming: Items processed for at least 20 minutes.

	Indicators	Score
3.2	Equipment, knowledge of process time, and automatic timer[19]	1
3.3	Written guidelines for sterilization or HLD	1
4	**Standard precautions[5]**	**/6**
4.1	Sterilization equipment[20]	1
4.2	Equipment for high-level disinfection[21]	1
4.3	Safe final disposal of sharps waste[22] (dumping pit, incinerator)	1
4.4	Safe final disposal of infectious waste[23]	1
4.5	Appropriate storage of sharps waste[24]	1
4.6	Appropriate storage of infectious waste[25]	1
5	**Staffing[5, 26]**	**/3 or /2**
5.1	Medical officer (MO-CLINIC) or MO (MCH-FP)	1
5.2	Family Welfare Visitor (FWV)	1
5.3	Assistant Nursing Attendant/Midwife/Dai nurse	1
6	**General facility-level cleanliness[5]**	**/9**
6.1	Floor	1
6.2	Counter/table/chair	1
6.3	Needle/sharps waste inside sharps container	1
6.4	Sharps container not overflowing	1
6.5	Bandage/infectious waste in appropriate container	1
6.6	Wall condition good	1
6.7	Door condition good	1
6.8	Roof condition good	1
6.9	Medical waste at source segregated as per color-coded bin	1

• Chemical high-level disinfection: Items processed in chlorine-based or glutaraldehyde or CIDEX or formaldehyde solution and soaked for at least 20 minutes.

[19] An automatic timer here refers to a passive timer that can be set to indicate when a specified time has passed. It may be part of the sterilization process or the HLD equipment.

[20] Facility reports that some instruments are processed in the facility and the facility has a functioning electric dry heat sterilizer, a functioning electric autoclave, or a non-electric autoclave with a functioning heat source available somewhere in the facility.

[21] Facility reports that some instruments are processed in the facility and the facility has an electric pot or other pot with heat source for high-level disinfection by boiling or high-level disinfection by steaming, or else facility has chlorine, formaldehyde, CIDEX, or glutaraldehyde for chemical high-level disinfection available somewhere in the facility on the day of the survey.

[22] The process of sharps waste disposal is incineration and the facility has a functioning incinerator with fuel on the day of survey, or else the facility disposes of sharps waste by open burning in a protected area, dumping without burning in a protected area, or removing offsite with storage in a protected area prior to removal offsite.

[23] The process of infectious waste disposal is incineration and the facility has a functioning incinerator with fuel on the day of survey, or else the facility disposes of sharps waste by open burning in a protected area, dumping without burning in a protected area, or removing offsite with storage in a protected area prior to removal offsite.

[24] Sharps container observed in general outpatient service area.

[25] Waste receptacles observed in general outpatient service area.

[26] If there is at least one provider available, the value will be 1, i.e., if there is one MO-CLINIC or one MO-MCH available in the facility, the corresponding value is 1. Same for other positions.

Table A4. Calculation of general service readiness score for a hypothetical MCWC

	Indicators	Number of items observed (score)	Total Number of items	Sub-category Score
A	**General service readiness[27]**			
1	Basic amenities	4	7	0.57
2	Basic management systems	3	4	0.75
3	Capacity to process instruments for re-use	2	3	0.67
4	Standard precautions	4	6	0.67
5	Staffing	1+1+1	3	1.0
6	General Facility Cleanliness	7	9	0.78
	Total Score = (0.57+0.75+0.67+0.67+1.0+0.78)/6 = 0.720 = 72.0% = Category B			

Scoring for Basic Services Readiness

Basic services readiness was divided into eight services:

i. Child health
ii. Family planning
iii. Antenatal care (ANC)
iv. Delivery and newborn care
v. Cesarean section
vi. Postnatal care (PNC)
vii. Adolescent health
viii. Nutrition

Each of these services, except adolescent health and nutrition which each have only one sub-category, was divided into six sub-categories:

i. Service availability
ii. Guidelines
iii. Staff training
iv. Equipment and supplies
v. Medicines and commodities
vi. Standard precautions

The process for assigning scores for each service area was analogous to that described above for general service readiness. Each sub-category within each service was given one point and the MCWCs were scored for each of the services based on the sum of the scores for each of the of six sub-categories (Table A5). The score for each sub-category is the sum of the 0-1 scores for each item within that sub-category divided by the total number of items in the sub-category.

[27] Details for general service readiness can be found in Table A3.

Table A5. Unweighted and weighted scoring template of the service specific readiness

	Indicators	Unweighted score
B	**Service-specific readiness**	
1	**Child health**	**/6**
1.1	**Service availability[5]**	**/6**
	Child vaccination	1
	Growth monitoring and promotion (GMP)	1
	Care of sick children U5	1
	Diagnosis and or treatment of malnutrition	1
	Iron supplementation	1
	Management of sepsis	1
1.2	**Guidelines[5]**	**/5**
	EPI	1
	IMCI	1
	Growth monitoring	1
	SAM/MAM	1
	Standard precautions guideline	1
1.3	**Staff training[28]**	**/6**
	Diagnosis and/or treatment of Acute Respiratory Infections	1
	Diagnosis and/or treatment of Diarrhea	1
	Breastfeeding	1
	Complimentary feeding in infants	1
	Infant And Young Child Feeding Training (IYCF training)	1
	Comprehensive newborn care	1
1.4	**Equipment and supplies[5]**	**/10**
	Child weighing scale	1
	Infant weighing scale	1
	Height or length board	1
	Tape for measuring head circumference	1
	Growth charts	1
	Tape for mid-upper arm circumference (MUAC)	1
	Thermometer	1
	Stethoscope	1
	Staff has watch with seconds hand or other device	1
	Examination bed or couch	1
1.5	**Medicines and commodities[5]**	**/6**
	Amoxicillin syrup, suspension or dispersible	1
	Ceftriaxone injection	1
	Cotrimoxazole syrup, suspension or dispersible	1
	Gentamycin injection	1

[28] Derived from the Health Worker Interview Questionnaire from the BHFS 2017.

	Albendazole	1
	Paracetamol syrup or suspension	1
1.6	**Standard precautions[5]**	**/11**
	Running water	1
	Soap	1
	Alcohol-based solution	1
	Waste receptacle (pedal bin)	1
	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves/other gloves[29]	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gowns	1
2	**Family planning**	**/6**
2.1	**Service availability[5]**	**/11**
	Combined pill	1
	Progestin-only pill	1
	Injectable contraceptive	1
	Condom	1
	Intrauterine contraceptive device (IUCD)	1
	Implant	1
	Emergency contraceptive pill	1
	NSV	1
	Tubectomy	1
	Counseling on LAM	1
	PPFP[30]	1
2.2	**Guidelines[5]**	**/3**
	Family planning	1
	Postpartum family planning	1
	Standard precaution	1
2.3	**Staff training[31]**	**/9**
	General counseling for family planning	1
	IUCD insertion and/or removal	1
	Implant insertion and/or removal[32]	1
	Performing vasectomy (NSV)[31]	1
	Performing tubal ligation (Tubectomy)[31]	1
	Clinical management of FP methods, including managing side effects	1

[29] Non-latex equivalent gloves are acceptable.
[30] Method-specific counseling and or service
[31] Health Worker Interview Questionnaire. The denominator will vary as per sanctioned position for MO.
[32] Exclude if there is no sanctioned position for MO.

	PPFP	1
	Injectable contraceptives	1
	Emergency contraceptive pill	1
2.4	**Equipment and supplies**[33]	**/92**
	BP apparatus (manual or digital)	1
	Stethoscope	1
	Examination light/spotlight	1
	Examination bed or couch/IUD table	1
	Samples of FP methods/counseling kit	1
	Other family planning specific visual aid	1
	Pelvic model for IUCD	1
	Sterile gloves	1
	Antiseptic solution	1
	Sponge holding forceps	1
	Sterile gauze pad or cotton wool	1
	Gallipot or cup for antiseptic solution	1
	CUSCO vaginal speculum – small	1
	CUSCO vaginal speculum – medium	1
	CUSCO vaginal speculum – large	1
	Tenaculum/volsellum forceps	1
	Uterine sound	1
	Straight artery forceps	1
	Straight cutting scissors	1
	High stool for sitting	1
	IUCD in sterile packaging	1
	Kelly forceps	1
	Implant service-related[31]	
	Local anesthetic	1
	Sterile syringe and needle	1
	Canula and Trochar for inserting implant	1
	Sealed implant pack	1
	Scalpel with blade (surgical blade with handle)	1
	Arm rest/side table	1
	Marker pen	1
	Surgical drape for implant	1
	Normal bandage or butterfly bandage/band aid/elastomeric mattress dressing	1
	Vasectomy and tubectomy service-related[31]	
	Operating theatre table	1
	Operating theatre light	1
	Instrument trolley	1
	Sterilizer drum	1

[33] Inventory Questionnaire. The denominator will vary as per sanctioned position for MO.

	Big curve scissors for cutting gauze or bandage	1
	Weighing scale (adult)	1
	Kidney tray	1
	Lifter and lifter jar	1
	Dressing jar with lid/cover	1
	Talquest book	1
	Iron cot	1
	Thermometer	1
	Gown for clients	1
	Gown for provider (surgeon and assistant)	1
	Trolley sheet	1
	Draw sheet	1
	Cap	1
	Bed sheet	1
	Blanket	1
	Mattress	1
	Pillow with cover	1
	Mosquito net	1
	Curtain	1
	Cotton ball/surgical gauze	1
	Povidone iodine solution	1
	Sterile surgical gloves (size 6.5)	1
	Sterile surgical gloves (size 7)	1
	Disposable sterile syringe (5ml)	1
	Disposable sterile syringe (10ml)	1
	Uristick	1
	Elastomeric dressing mattress size 10x5 cm	1
	Disposable sterile lancet	1
	Silk thread	1
	NSV kit	1
	Ring forceps	1
	VAS dissecting forceps	1
	Small surgical scissors	1
	Tubectomy kit	1
	BP handle	1
	Needle holder	1
	Babcock tissue forceps	1
	Long straight artery forceps (medium)	1
	Curved mosquito artery forceps	1
	Alice tissue forceps	1
	Plain dissecting forceps	1
	Tooth dissecting forceps	1
	Mayo scissors	1

	Sponge holding forceps	1
	Retractor	1
	Sterile chromic catgut/PJA	1
	Sterile surgical blade size 10	1
	Saline stand	1
	Condom	1
	Injection xylocaine 1%	1
	Antibiotic (ciprofloxacin or azithromycin)	1
	Paracetamol tablets	1
	Vitamin B-complex tablets	1
	Injection atropine sulphate (0.6mg/ml)	1
	Injection promethazine (12.5mg/ml)	1
	Injection pethidine (25mg/ml)	1
	Diazepam tablets (5mg)	1
2.5	**Contraceptive commodities[32]**	**/7**
	Combined oral pills	1
	Progestin-only pills	1
	Progestin-only injectables (Depo)	1
	Male condom	1
	Intrauterine contraceptive device	1
	Implants[31]	1
	Emergency contraceptive pill	1
2.6	**Standard precautions[5]**	**/11**
	Running water	1
	Soap	1
	Alcohol-based solution	1
	Waste receptacle (Pedal bin)	1
	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves/other gloves	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gowns	1
3	**Antenatal care**	**/6**
3.1	**Service availability[5]**	**/6**
	Folic acid supplementation	1
	Combined iron and folic acid supplementation (IFA)	1
	Distribution of misoprostol for home-based deliveries	1
	Urine protein test	1
	Urine glucose test	1
	Test for hemoglobin	1
3.2	**Guidelines[5]**	**/2**
	ANC	1

	Standard precaution	1
3.3	**Staff training[34]**	**/6**
	ANC screening (e.g., blood pressure, sugar & albumin, anemia)	1
	Counseling for ANC	1
	Complications of pregnancy and their management	1
	Nutritional assessment of the pregnant woman, such as body mass index calculation and mid-upper arm circumference measurement	1
	Management of pre-eclampsia/eclampsia	1
	Antenatal corticosteroids for threatened preterm labor[35]	1
3.4	**Equipment and supplies[5]**	**/8**
	Pregnancy/ANC-related job aid/IEC materials	1
	Client card/ANC card	1
	BP apparatus (manual or digital)	1
	Stethoscope	1
	Examination light	1
	Adult weighing scale	1
	Examination bed or couch	1
	Measuring tape for fundal height	1
3.5	**Medicines[5]**	**/3**
	Folic acid tablets	1
	Combined iron and folic acid tablets	1
	Misoprostol tablets	1
	Calcium lactate tablet 300mg	1
3.6	**Standard precautions[5]**	**/11**
	Running water	1
	Soap	1
	Alcohol-based solution	1
	Waste receptacle (pedal bin)	1
	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves/other gloves	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gown	1
4	**Normal delivery and newborn care[3]**	**/6**
4.1	**Service availability[5]**	**/8**
	24/7 delivery service	1
	Parenteral administration of antibiotics (IV or IM)	1
	Parenteral administration of oxytocic (IV or IM)	1
	Parenteral administration of anticonvulsant	1
	Assisted vaginal delivery	1
	Manual removal of placenta	1

[34] Health Worker Interview Questionnaire. The denominator will vary as per BEmONC/CEmONC list.
[35] For CEmONC.

	Removal of retained products of conception	1
	Neonatal resuscitation	1
4.2	**Guidelines[5]**	**/3**
	Guideline on BEmONC	1
	Guideline on pre-term labor management	1
	Guideline on standard precaution	1
4.3	**Staff training[27]**	**/4**
	Routine care for labor and normal vaginal delivery	1
	Active management of third stage of labor (AMTSL)	1
	Post-abortion care	1
	Comprehensive newborn care	1
4.4	**Equipment[5]**	**/23**
	Examination light	1
	Suction apparatus with catheter	1
	Suction bulb or penguin sucker	1
	Manual vacuum extractor	1
	Vacuum aspiration kit or MR & MVA kit	1
	Newborn bag and mask	1
	Thermometer	1
	Thermometer for low-body temperature	1
	Infant scale	1
	Digital or manual blood pressure apparatus	1
	Stethoscope	1
	Delivery bed complete with rods and stirrups	1
	Delivery kit	1
	Cord clamp/thread	1
	Speculum	1
	Episiotomy scissors	1
	Scissors or blade to cut cord	1
	Suture material with needle	1
	Needle holder	1
	Forceps (large)	1
	Forceps (medium)	1
	Sponge holder	1
	Stairs (for climbing onto delivery bed)	1
4.5	**Medicines[5]**	**/5**
	Injectable antibiotic (e.g., ceftriaxone)	1
	Injectable uterotonic (e.g., oxytocin)	1
	IV solution (ringer lactate) with infusion set	1
	Skin disinfectant (other than chlorhexidine)	1
	7.1% chlorhexidine solution (umbilical cord cleansing)	1
4.6	**Standard precautions[5]**	**/11**
	Running water	1
	Soap	1
	Alcohol-based	1
	Waste receptacle (pedal bin)	1

	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves/other gloves	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gown	1
5	**Cesarean delivery[4]**	**/6**
5.1	**Service availability[5]**	**/12**
	Parenteral administration of antibiotics (IV or IM)	1
	Parenteral administration of oxytocic (IV or IM)	1
	Parenteral administration of anticonvulsant	1
	Assisted vaginal delivery	1
	Manual removal of placenta	1
	Removal of retained products of conception	1
	Neonatal resuscitation	1
	Surgeon	1
	Anesthetist	1
	Blood transfusion	1
	KMC	1
	Cervical cancer screening (VIA)	1
5.2	**Guidelines[5]**	**/4**
	Guideline on CEmONC	1
	Guideline on pre-term labor management	1
	Guideline on standard precaution	1
	National guideline on cervical cancer	1
5.3	**Staff training[27]**	**/3**
	Comprehensive emergency obstetric care (CEmOC)	1
	Emergency obstetric care (EmOC)	1
	Comprehensive newborn care	1
5.4	**Equipment[5]**	**/28**
	Adult weighing scale	1
	Infant weighing scale [100-gram gradation]	1
	Thermometer	1
	Stethoscope	1
	BP apparatus	1
	Self-inflating bag and mask [adult]	1
	Self-inflating bag and mask [pediatric]	1
	Pulse oximeter	1
	Anesthesia machine	1
	Tubings and connectors (to connect endotracheal tube)	1
	Oropharyngeal airway (adult)	1
	Oropharyngeal airway (pediatric)	1
	Magill forceps – adult	1
	Magill forceps – pediatric	1
	Endotracheal tube cuffed sizes 3.0 – 5.0	1

	Endotracheal tube cuffed sizes 5.5 – 9.0	1
	Intubating stylet	1
	Spinal needle	1
	OT table	1
	OT light	1
	IV stand	1
	Emergency power supply	1
	Instrument set for Cesarean delivery	1
	Air conditioner	1
	Oxygen cylinder with flowmeter	1
	Oxygen cylinder without flowmeter	1
	Sterile gloves	1
	Disinfectant	1
5.5	**Medicines[5]**	**/10**
	Injectable antibiotic (e.g., ceftriaxone)	1
	Injectable uterotonic (e.g., oxytocin)	1
	IV solution (Ringers lactate) with infusion set	1
	Skin disinfectant (other than chlorhexidine)	1
	7.1% chlorhexidine solution (umbilical cord cleansing)	1
	Normal saline 500ml, 1000ml	1
	Ringers lactate solution 1000 ml	1
	Dextrose in normal saline 0.9% (DNS) 500ml, 1000ml	1
	5% dextrose in aqua (d/a) 500ml, 1000ml	1
	Hartman's solution 1000ml	1
5.6	**Standard precautions[5]**	**/11**
	Running water	1
	Soap	1
	Alcohol-based solution	1
	Waste receptacle (pedal bin)	1
	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gown	1
6	**Postnatal care**	**/6**
6.1	**Service availability**	**/1**
	Dedicated room	1
6.2	**Guidelines[5]**	**/3**
	PNC	1
	PPFP	1
	Standard precaution	1
6.3	**Staff training[27]**	**/3**
	Postnatal care (PNC) (blood pressure checkup, examine perineum and abdomen, test urine for albumin)	1

	Postnatal care counselling (breast feeding, nutrition, FP, anemia)	1
	Prevalence of postpartum hemorrhage (management of PPH)	1
6.4	**Equipment and supplies[5]**	**/6**
	BP apparatus (manual or digital)	1
	Stethoscope	1
	Examination light	1
	Adult weighing scale	1
	Examination bed or couch	1
	Measuring tape for fundal height	1
6.5	**Medicines[5]**	**/2**
	Folic acid tablets	1
	Combined iron and folic acid tablets	1
6.6	**Standard precautions[5]**	**/3**
	Running water	1
	Soap	1
	Alcohol-based solution	1
	Waste receptacle (pedal bin)	1
	Other waste receptacle	1
	Sharps waste container (safety box)	1
	Disposable latex gloves/other gloves	1
	Disinfectant/antiseptic	1
	One-time disposable syringe with needle	1
	Medical masks	1
	Gown	1
7	**Adolescent health[5]**	**/2**
7.1	Dedicated adolescent corner with audio-visual privacy	1
7.2	Adolescent health guideline	1
8	**Nutrition services[5]**	**/2**
8.1	Dedicated room with audio-visual privacy	1
8.2	SAM/MAM guideline	1

Table A6 illustrates how the service-specific scores were combined to produce a weighted total score for each MCWC (data not shown in this report).

Table A6. Calculation of total weighted score for a hypothetical MCWC

	Indicators	Weight (number of sub-categories)	Score	Weight*Score (weight multiplied by score)
A	**General service readiness**	6	**0.74**	**4.44**
B	**Service-specific readiness**			
1	Child health	6	0.83	4.98
2	Family planning	6	0.74	4.44
3	Antenatal care (ANC)	6	0.82	4.92
4	Delivery and newborn care	6	0.64	3.84

	Indicators	Weight (number of sub-categories)	Score	Weight*Score (weight multiplied by score)
5	Cesarean section	6	0.45	2.7
6	Postnatal care (PNC)	6	0.68	4.08
7	Adolescent health	1	0.5	0.5
8	Nutrition	1	1.0	1
	Total	44		30.9
	Total Weighted Score = 30.9/44 = 0.702 = 70.2% = Category B			

Appendix B

Suggestion for Future Additions

During the stakeholder consultations and a series of meetings among the representatives of DGFP, MEASURE Evaluation/D4I, and MaMoni, the following indicators were suggested by the stakeholders, for future addition.

Table A6. List of variables to be included in future categorization activity suggested by stakeholders

A	**General service readiness**
1	**Basic amenities**
	Toilet for indoor patients
5	**Staffing**
	Aya
	Driver
	Cleaner
B	**Service-specific readiness**
1	**Child health**
1.4	**Equipment and supply**
	Newborn weighing scale
1.5	**Medicines and commodities**
	Zinc tablets or syrup
	MNP sachet
	ORS packets or sachets
2	**Family planning**
2.1	**Service availability**
	Follow-up of IUD and implant
2.3	**Staff training**
	MR, MRM, PAC, Post-MR/MRM
2.4	**Equipment and supply**
	IUCD service-related
	Eligator forceps for IUCD removal
	Sims vaginal speculum
	Implant service-related
	U-forceps
	Mosquito (straight) forceps
	Tubectomy service-related
	Elastomeric dressing mattress size 5x5 cm
	Saline set
	Butterfly and cannula
	Emergency tray with emergency medicine
	Emergency MSR
	Makintos
3	**Antenatal care**
3.1	**Service availability**

	Distribution of 7.1% chlorohexidine for home-based deliveries
	Blood sugar test
	Syphilis rapid diagnostic test
	VDRL test for syphilis
	Blood group and typing
	Ultrasound
	General examination (BP, height, weight measurement)
	Abdominal examination
	PPFP counseling
3.2	**Guidelines**
	Maternal SOP
4	**Normal delivery and newborn care**
4.2	**Guidelines**
	Maternal SOP
	Guideline on CNCP
4.4	**Equipment**
	Newborn weighing scale
5	**Cesarean delivery**
5.2	**Guidelines**
	Guideline on KMC
	Maternal SOP
5.4	**Equipment**
	Newborn weighing scale
6	**Postnatal care**
6.2	**Guidelines**
	Maternal SOP
	Breast cancer screening
	Adolescent health
	Information/counseling on (nutrition, physical change, menstrual hygiene, early marriage and pregnancy, drug addiction, violence against adolescents)
	Service (adolescent sexual and reproductive health)
	Adolescent nutrition (IFA, deworming)
	Referral for mental health (e.g., drug addiction)
	Nutrition
	Maternal nutrition (folic acid, IFA, calcium, post-partum Vit-A cap supp.)
	Adolescent nutrition (IFA, deworming)
	Child nutrition (MNP sachet, zinc supplementation, Vit-A cap)
	Counseling on nutrition for all
	Reproductive health care
	Counseling on RTI, STI, menstrual hygiene
	MR (surgical) for married adolescent
	MRM (MR with medication)
	Treatment of UTI, RTI, STI, and menstrual complication management
	Sanitary napkin distribution
	Menstrual hygiene and management
	PPFP kit box (in labor and OT room)
	Service for people with disability

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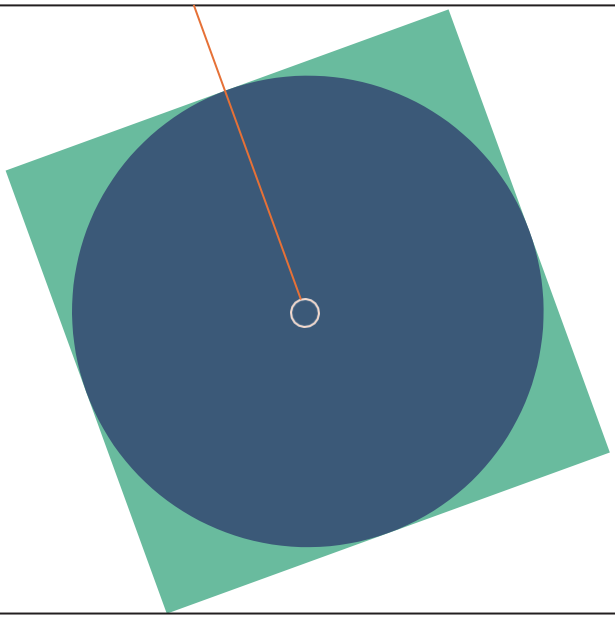

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