



Effective Access to Long-Acting Reversible Contraceptives and Permanent Methods in Bangladesh

An Analysis of Health Facility Survey Data

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Cover photo credit:

In India, a 20-year-old implant user from Bangladesh sits with her local Field Worker Assistant at a group talk discussing family planning options. © 2011 Lynn M. Van Lith, Courtesy of Photoshare.

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ABBREVIATIONS

BHFS	Bangladesh Health Facility Survey
CCSDP	Clinical Contraception Service Delivery Project
DGFP	Directorate General of Family Planning
DH	district hospitals
EMO	emergency medical officer
FP	family planning
FWV	female wellness visitor
IMO	indoor medical officer
IUD	intrauterine device
LARC	long-acting reversible contraceptives
LMIS	logistics management information system
MCH-FP	maternal and child health/family planning medical officer
MCWC	mother and child welfare center
MO-MCH	medical officers for maternal and child health
NGO	nongovernmental organization
NIPORT	National Institute of Population Research and Training
NSV	no-scalpel vasectomy
OB/GYN	obstetrician/gynecologist
OT	operating table
PM	permanent methods
RMO	residential medical officer
UHC	upazila health complex
UHFWC	union health and family welfare center
WHO	World Health Organization

EXECUTIVE SUMMARY

We used a health systems approach to determine the *effective accessibility* of health facilities designated to provide long-acting reversible contraceptives (LARCs) and permanent methods (PMs) of contraception to Bangladeshi couples. This analysis will help identify crucial supply-side barriers to the acceptance of LARCs and PMs in Bangladesh.

Bangladesh has an extensive health infrastructure that delivers preventive and curative services, including family planning (FP). There are around 600 facilities in the public sector designated to provide all LARC and PMs, and about 4,000 Union Health and Family Welfare Centers (UHFWCs) to provide intrauterine devices (IUDs). There are also large numbers of facilities run by nongovernmental organizations (NGOs) and the private sector. The presence of this infrastructure indicates that the country should have high accessibility to LARCs and PMs. However, compared to global rates, Bangladesh has a relatively low prevalence of LARCs and PMs. This relatively low prevalence of LARCs and PMs may be the result of a number of demand-side and supply-side barriers. We examined a supply-side barrier in this report on the “effective accessibility” of LARC and PM services for consumers in Bangladesh.

We define LARC and PM services as effectively accessible to consumers if facilities that are designated to offer LARCs and PMs do indeed offer these types of contraception *and* if those facilities are ready to provide an appropriate quality of services, according to the government-validated definition of readiness presented in this report. A facility is defined as ready to provide LARC and PM services when it has *all* of the following four components: trained providers, service guidelines, equipment and supplies, and post-procedure medications. This definition of readiness also captures the physical quality of LARC and PM services that facilities are able to offer. Effective accessibility defined in this way may be low if, for example, the claimed number of facilities do not provide LARCs and PMs or if the quality of the services is so poor that consumers opt not to use them. Low effective accessibility will in turn result in low use of LARCs and PMs.

To understand the effective accessibility of LARC and PM services in Bangladesh, we analyzed data collected from 963 facilities during the Bangladesh Health Facility Survey 2014 (BHFS 2014) (National Institute of Population Research and Training [NIPORT], Associates for Community and Population Research, and ICF International, 2016). This nationally representative survey was designed to provide nationwide and facility-level estimates.

Of the designated public facilities required to provide LARC and PM services, only 69 percent offered IUDs, 78 percent offered implants, 63 percent offered tubectomies, and 62 percent offered no-scalpel vasectomies (NSVs). Of the NGO facilities, 62 percent offered IUDs, 29 percent offered implants, 18 percent offered tubectomies, and 17 percent offered NSVs. Only 8 percent of the private facilities offered IUDs and 5–7 percent offered implants, tubectomies, or NSVs.

Furthermore, only 19 percent of public facilities that offered IUDs were ready to provide them; only 34 percent were ready to provide implants; 15 percent were ready to provide tubectomies; and 23 percent were ready to provide NSVs. When facilities combined availability of LARCs and PMs with readiness to provide these methods, they were considered effectively accessible for these methods. Only 10 percent of designated public facilities were effectively accessible for IUDs. Similarly, 27 percent were effectively accessible for implants. Only 10 percent were effectively accessible for tubectomy, and 14 percent were effectively accessible for NSV. The results mean that only about 416 public facilities were ready to provide IUDs

(and only 184 out of 3,914 UHFWCs) in Bangladesh in 2014. Furthermore, only 178 out of 586 facilities (64 district hospitals, 97 mother and child welfare centers [MCWCs], and 425 upazila health complexes [UHCs]) were ready to provide implants. Only 51 out of 586 were ready to provide tubectomy, and 101 out of 586 facilities were ready to provide NSV in Bangladesh in 2014.

The recent 2017 BHFS data indicate that the overall readiness of health facilities has remained at the same level, and in some cases, it has slightly deteriorated. Therefore, our findings approximate the current situation of facility readiness for providing LARCs and PMs in Bangladesh.

The analysis also showed that facilities fared well for readiness components individually, but when readiness components were considered together as a composite, they did very poorly. This suggests that service delivery lacks a systems approach. We recommend a few simple but achievable interventions that may help improve readiness to provide LARCs and PMs and thus increase the use of these methods.

BACKGROUND

Bangladesh's highly successful FP program helped to reduce total fertility rates from approximately 7 in the 1970s to 2.3 in 2014, while achieving a contraceptive prevalence rate of 62 percent by 2017–2018 (National Institute of Population Research and Training [NIPORT], Mitra and Associates, and ICF International, 2019). However, despite Bangladesh's successes, its FP program still faces some challenges in meeting the needs of its people. In particular, there was a significant gap between the total fertility rate of 2.3 and the wanted fertility rate of 1.6 in 2014 (NIPORT et al., 2016a), and the contraceptive prevalence rate has plateaued at around 62 percent since 2011. Furthermore, Bangladesh has a 12-percent unmet need for FP and 9-percent prevalence of LARCs and PMs in 2017–2018 (NIPORT, et al., 2019). This prevalence was 8 percent in 2017–2018 (NIPORT, et al., 2019). The 8-percent prevalence of LARCs and PMs was very low in comparison to global contraceptive data, which indicates that more than one in three women globally use LARCs and PMs and that these methods account for 56 percent of global contraceptive prevalence (United Nations, Department of Economic and Social Affairs, Population Division [UN DESA], 2015). The low prevalence of LARCs and PMs in Bangladesh and the unmet need for FP is further evident in the fact that approximately 57 percent of women wanted no more children, yet only 8 percent of these women were using LARCs or PMs (NIPORT, et al., 2019).

This relatively low prevalence of LARCs and PMs in Bangladesh may result from a range of supply- and demand-side barriers. MEASURE Evaluation and Research for Decision Makers (which are both funded by the United States Agency for International Development [USAID]) conducted this analysis to explore some of the supply-side constraints that have likely affected access to LARCs and PMs and reduced their use in Bangladesh. This report presents the results of this analysis, which used a health systems approach to determine the *effective accessibility* of health facilities designated to provide LARCs and PMs of contraception to Bangladeshi couples.

METHODS

This report is based on a secondary analysis of the 2014 Bangladesh Health Facility Survey (BHFS 2014) (NIPORT, et al., 2016b). BHFS 2014 collected data from a nationally representative sample of health facilities in Bangladesh, using a tablet-based questionnaire through (1) person-to-person interviews of facility managers or their designated person(s) and (2) observations of the availability of guidelines, equipment, supplies, medicines, and other necessary items and services in the facilities. Data were collected from all types of health facilities managed by the government, NGOs, and private organizations in all the 64 districts of the country. Facility data were then analyzed for readiness to provide services related to child health, maternal and newborn care, FP, selected noncommunicable diseases, and tuberculosis. However, although BHFS 2014 involved an assessment of facility readiness to provide temporary methods of FP, there was no analysis of facility readiness to provide LARCs and PMs.

To assess the readiness of facilities to provide LARC and PM services using BHFS 2014 data, we needed an operational definition of what is necessary in a facility, to provide the different LARC and PM services. We used the following three-step process to develop this operational definition for facility readiness to provide each of the different LARC and PM services:

1. In Step 1, we prepared an initial draft version of the components and subcomponents necessary to provide each of the different LARCs and PMs (i.e., IUDs, tubectomies, NSVs, and implants). To develop this draft operational definition and identify the components and subcomponents, we reviewed the standard guidelines for the provision of each of the different LARC and PM services documented in the Family Planning Manual of the Directorate General of Family Planning (DGFP) (DGFP, 2017). Furthermore, we reviewed the World Health Organization's Service Availability and Readiness Assessment tool for other relevant indicators (World Health Organization, 2013).
2. In Step 2, we sought feedback from a technical expert from the Clinical Contraception Service Delivery Project of the DGFP and from a technical expert associated with the USAID-funded Mayer Hashi project (a large-scale project to increase the use of LARC and PM) at EngenderHealth to refine the tool. Using a refined set of components and subcomponents, we conducted a preliminary analysis of the BHFS 2014 data for readiness to provide each of the different LARCs and PMs.
3. In Step 3, we presented the operational definitions for readiness to provide each of the different LARCs and PMs and shared the preliminary results of the analysis with a wider group of CCDSP technical experts. Based on the feedback received during this dissemination, we revised the components and subcomponents to arrive at a final agreed-upon set of indicators to assess the readiness of facilities to provide each of the different LARCs and PMs. The DGFP managers and service providers reached consensus that the definition of "readiness" used in this analysis was only to be applied to facilities that were designated to provide, or did provide, some or all types of LARCs and PMs.

A facility was only considered "ready" if it had all of the following components: (1) trained providers, (2) ALL the required equipment and supplies, (3) ALL the post-procedure medicines, and (4) manuals or guidelines. Each of these components differed by the type of LARC and PM service to be provided. (The required components were different for IUDs, tubectomies, implants, and NSVs.) Furthermore, each component consisted of a number of subcomponents or indicators. Thus, for example, if a facility provided

NSV and did not have the required ring forceps for the procedure, the facility lacked ALL the required equipment and supplies to provide NSV and was thus considered not ready to provide NSV. Similarly, if a facility that provided IUDs did not have a trained provider, but it had all the other components, that facility was still assessed as not ready to provide IUDs. Appendix A presents the final set of components and their indicators for each LARC and PM.

We define LARC and PM services as effectively accessible to consumers if facilities that are designated to offer LARCs and PMs do indeed offer these types of contraception *and* if those facilities are ready to provide an appropriate quality of services, according to the government-validated definition of readiness presented in this report. A facility is defined as ready to provide LARC and PM services when it has *all* of the following four components: trained providers, service guidelines, equipment and supplies, and post-procedure medications. This definition of readiness also captures the physical quality of LARC and PM services that facilities are able to offer. Effective accessibility defined in this way may be low if, for example, the claimed number of facilities do not provide LARCs and PMs or if the quality of the services is so poor that consumers opt not to use them.

Using the BHFS 2014 data, these indicators were analyzed to assess whether facilities that provide, or are designated to provide, all of some LARC and PM services, were ready to provide the different services. The facilities assessed were district hospitals (DHs), the MCWCs, UHCs, and UHFWCs. Additionally, NGO clinics and hospitals that provide LARCs and PMs were also included in the analysis. Community clinics were not included in the analysis, because they do not provide LARCs and PMs. A very small sample of private facilities also provided LARC and PM services, and thus private facilities were not assessed for readiness to provide LARC and PM services.

Representatives of DGFP also wanted it to be noted that DHs have highly skilled clinicians and are supposed to be equipped with required equipment and supplies to provide LARCs and PMs. However, DGFP does not programmatically emphasize LARC and PM service delivery at DHs.

We conducted a simulation of service readiness achievable by ensuring availability of equipment and supplies while keeping availability of other items constant.

FINDINGS

Availability of LARCs and PMs

The analysis revealed that many facilities that were designated to provide LARCs and PMs, did not offer them (Table 1). Overall, only 63 percent of all facilities and 69 percent of public facilities offered IUDs (though all public facilities are designated to provide IUDs). Looking at the facility-level breakdown for the provision of IUDs, we found that 33 percent of the UHFwCs, amounting to about 1,260 UHFwCs in the country, reported that they did not offer IUDs, even though DGFP aims to provide IUDs at all UHFwCs in the country. Thus, the data indicate that a large number of UHFwCs did not provide IUDs in Bangladesh, even though they were supposed to provide these devices. We also found that a majority of district- or higher-level facilities did not offer IUDs, even though they were designated to provide IUDs. The fact that DGFP did not emphasize the provision of IUDs through DHs may explain some of the reason for the low provision of IUDs by DHs. However, even though a higher proportion of UHCs or MCWCs did provide IUDs compared to DHs, all of these types of facilities are supposed to provide IUDs.

The availability of implants in the government facilities that are required to provide them (i.e., DHs, UHCs, and MCWCs) was the highest of all the LARCs and PMs, at 78 percent. However, the availability of tubectomy and NSV in government facilities was lower than the availability of IUDs—tubectomy at 63 percent and NSV at 62 percent. One-third of UHCs and about half of MCWCs did not provide tubectomy or NSV services at all (though they are required to provide both).

The availability of IUDs in NGO facilities was similar to that in public facilities. However, only 29 percent, 17 percent, and 18 percent of NGOs offered implants, tubectomies, or NSVs, respectively. Finally, as Table 1 indicates, less than one in ten private facilities offered LARCs and PMs.

Table 1. Percentage of facilities that offer LARC and PM services

Facility type (unweighted N)	Percentage of facilities offering each method			
	IUD	Implant	Tubectomy	NSV
All facilities (963)	63	*38	*28	*28
All public (696)	69	*78	*63	*62
DH (62)	47	39	34	29
UHC (140)	85	84	69	69
MCWC (93)	84	80	55	53
UHFwC (401)	67	-	-	-
NGO facilities (164)	62	29	17	18
Private facilities (103)	8	7	5	6

* Calculation excludes UHFwCs, which are not designated to offer implants, tubectomies, or NSV

Readiness to Provide LARCs and PMs

In the following subsections, we assess the availability of the components and subcomponents necessary to provide each of the different LARCs and PMs in the facilities that do offer LARC and PM services. The results of this readiness analysis for provision of each of the different LARCs and PMs are presented in Table 2.

Table 2. Percentage of LARC- and PM-providing facilities that had a component of readiness, by method and facility type

Facility type (unweighted N)	Trained provider	Guideline	Equipment and supplies	Post-procedure medicines	All components available
IUDs					
All (569)	79	70	28	93	19
Public (474)	76	66	21	93	14
DH (29)	100	86	45	100	34
UHC (117)	99	76	64	100	51
MCWC (77)	92	78	62	100	47
UHF WC (251)	71	64	12	92	7
NGO facilities (95)	92	87	61	93	40
Implants					
All (262)	80	76	53	97	34
Public (211)	83	79	57	100	39
DH (24)	100	92	63	100	58
UHC (113)	89	78	57	100	41
MCWC (74)	49	78	53	100	23
NGO facilities (45)	63	83	46	92	26
Tubectomy					
All (203)	76	81	27	94	15
Public (166)	84	81	20	98	14
DH (21)	100	90	24	100	19
UHC (94)	89	80	18	98	13
MCWC (51)	51	84	29	94	16
NGO facilities (32)	57	81	44	87	18
NSV					
All (199)	71	77	38	97	23
Public (161)	82	81	38	97	28
DH (18)	100	94	44	100	39
UHC (94)	87	80	36	97	28
MCWC (49)	49	82	49	96	24
NGO facilities (32)	48	70	39	97	13

Note: UHF WCs do not offer implants, tubectomies, or NSVs.

Availability of Trained Providers

As evident in Table 2, 16–24 percent of all public facilities reported that they did not have a trained provider for the LARC and PM services that they are supposed to offer. Examining the differences between the different facility levels and types of LARCs and PMs that are provided, we found that 29 percent of the primary sites for IUDs, the UHFWCs, did not have the necessary trained provider. Similarly, about half of the MCWCs—a primary site for implants, tubectomies, and NSVs—did not have the required trained providers for those methods. NGOs also faced a challenge in having trained providers available for implants, tubectomies, and NSVs. Overall, the analysis indicated that often the facilities closest to the consumers did not have the necessary trained staff to provide the LARC and PM services.

Availability of Service Delivery Guidelines

The availability of guidelines was similar to availability of trained providers—one in five of implant-, tubectomy-, and NSV-providing public facilities did not have guidelines, and one in three IUD-providing facilities did not have guidelines (Table 2).

Availability of Equipment and Supplies

As an individual component, the unavailability of equipment and supplies appears to be the biggest challenge to the readiness of facilities to provide LARCs and PMs. About 72 percent of IUD-providing facilities reported that they did not have equipment and supplies, and 47 percent of implant-providing facilities did not have the equipment and supplies (Table 2). Similarly, 73 percent of tubectomy-providing facilities and 62 percent of NSV-providing facilities reported that they did not have the required equipment or supplies. 88 percent of UHFWCs, a primary site for IUD provision, did not have the required equipment and supplies. Similarly, 82 percent of UHCs, a primary site for tubectomy, did not have the required equipment or supplies. The deficiency in this component for all methods and types of facilities was very high.

We illustrate the availability of individual items of equipment and supplies necessary to provide IUD services in UHFWC, a primary site for IUD service (Table 3). Availability of all items but autoclave or sterilizer is high. But only 27 percent of UHFWCs had an autoclave or sterilizer, the most important equipment for quality provision of IUD, on the day of survey visit. As a result, the equipment-supplies availability drops to only 12 percent when all items are considered together. This scenario is common in other facilities. Individual items' availability varies between 72 and 100 percent in district hospitals. However, availability of all items together is only 45 percent.

Table 3. Percentage of IUD-providing facilities that have the necessary equipment and supplies

Equipment and supplies	DH	UHC	MCWC	UHFWC	NGO
All items	45	64	62	12	61
Examination flashlight	100	99	95	65	98
Gallipot	90	100	99	84	93
Tenaculum	86	94	95	82	89
Cusco Vaginal Speculum medium	97	99	100	93	95
Uterine sound	72	92	86	80	85
Straight artery forceps	86	99	99	87	94
Straight cutting scissors	79	99	95	83	96
Any bucket	93	97	96	84	96

Autoclave/IUD sterilizer/sterilizer	93	76	83	27	87
Povidon iodine solution	97	97	94	83	98
Sterile surgical gloves	100	100	99	93	98
Gauze/cotton	93	100	99	84	95
IUD package	93	98	99	96	98
(Number of facilities that provide IUD)	(29)	(117)	(77)	(251)	(95)

Availability of Post-Procedure Medications

As evident in Table 2, post-procedure medication was widely available, and most facilities performed well on this indicator for readiness.

Overall Readiness of Facilities that Provide LARCs and PMs

Table 2 identifies the percentage of facilities with individual component readiness and the percentage of facilities that were ready on all four components. For overall readiness, a facility that provided a particular LARC or PM service needed to have all the indicators for each of the four components of each type of LARC and PM service available. Any missing indicator from any of the components indicates a facility is not ready to provide LARC or PM services. The overall readiness for providing IUDs, implants, tubectomies, and NSVs was extremely poor; it was the lowest for tubectomies (15%), followed by IUDs (19%), NSVs (23%), and implants (34%), among public and NGO facilities that offered these methods.

UHFWCs were the primary venue for IUDs, yet, of the UHFWCs that offered IUDs, the readiness of these facilities was the least—only 7 percent of UHFWCs that offered IUDs were ready to provide them. UHCs and MCWCs were the primary venues for implants, yet, of facilities that offered the method, only 23 percent and 41 percent, respectively, were ready to provide it. Similarly, UHCs and MCWCs are also primary sites for tubectomy, but only 13 percent to 16 percent of these facilities that offered tubectomy were ready to provide the method. NGO facilities fared relatively better than the public-sector facilities for readiness to provide IUDs, implants, and tubectomies, but not for NSVs.

Table 2 shows that readiness was moderate to high for each of the following elements of effective service provision: trained providers (71–79%), guidelines (70–81%), and post-procedure medications (93–97%). But it was poor for equipment and supplies (27–53%). The finding of very poor readiness, despite moderate to high levels of availability of three individual components (trained provider, guidelines, and post-procedure medications), can be explained as follows: most facilities had individual components, but only a few had ALL the components required for effective delivery of a service with appropriate standards and protocols and acceptable quality. For example, when we look at the readiness of UHCs to provide tubectomy, we found that 89 percent had trained providers, 80 percent had the necessary guidelines, 18 percent had the necessary equipment and supplies, and 98 percent had the necessary post-procedure medications. Yet, the overall readiness of UHCs to provide tubectomies was 13 percent—i.e., only 13 of 100 UHCs had all four components in place, and thus readiness was only 13 percent.

Effective Accessibility of LARCs and PMs

Figure 1 illustrates the joint effect of LARC and PM service unavailability and lack of readiness on the effective accessibility of these methods. For each method, facilities of each type are divided according to (1)

service unavailability (“Don’t provide,” red color stack), (2) lack of readiness (“Not ready,” yellow stack), and (3) readiness (“Ready,” green stack). We found the following levels of effective accessibility for each method, among facilities designated to provide that method: only 10 percent of IUD-providing public facilities were effectively accessible for IUDs, 30 percent for implants, 9 percent for tubectomies, and 17 percent for NSVs. We calculated these percentages of effective accessibility by combining all types of facilities and taking survey weights of facility types. These findings mean that nationwide only about 184 UHFWCs were ready to provide IUDs, and of the designated public facilities, only 178 were ready to provide implants, 52 were ready to provide tubectomies, and 100 were ready to provide NSVs (Table 4).

Figure 1. Percentage of facilities that are effectively accessible (services are provided/offered and are ready to provide services) for LARCs and PMs services

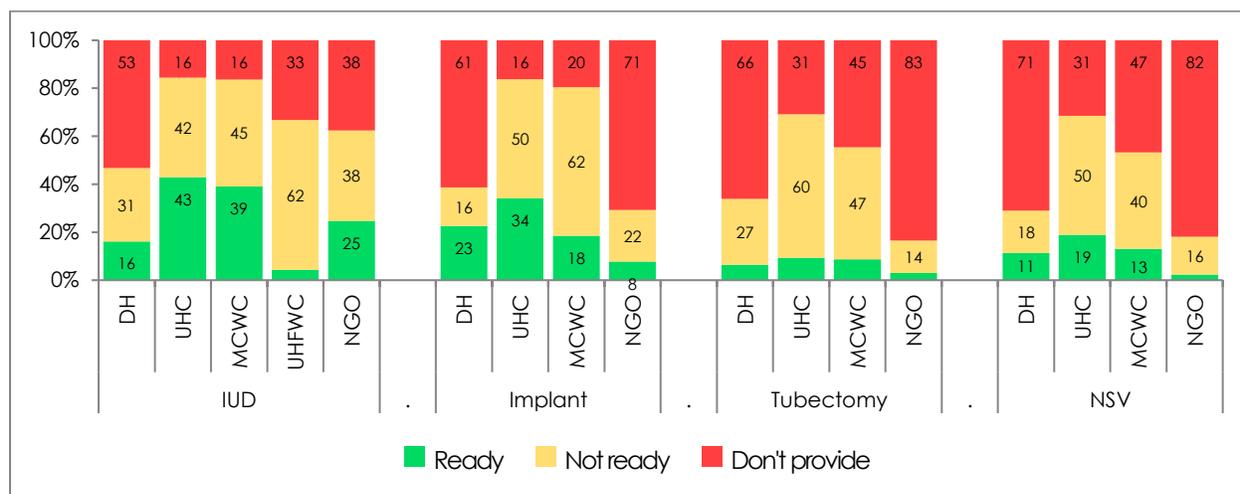


Table 4. Number of facilities ready to provide LARC and PM services, countrywide

	IUD	Implant	Tubectomy	NSV
DH (n=64)	10	14	4	7
UHC (n=425)	184	146	38	82
MCWC (n=97)	38	18	9	12
UHFWC (n=3914)	184	-	-	-
Total	416	178	51	101

Source of total number of facilities: Table 1.1, BHFS 2014

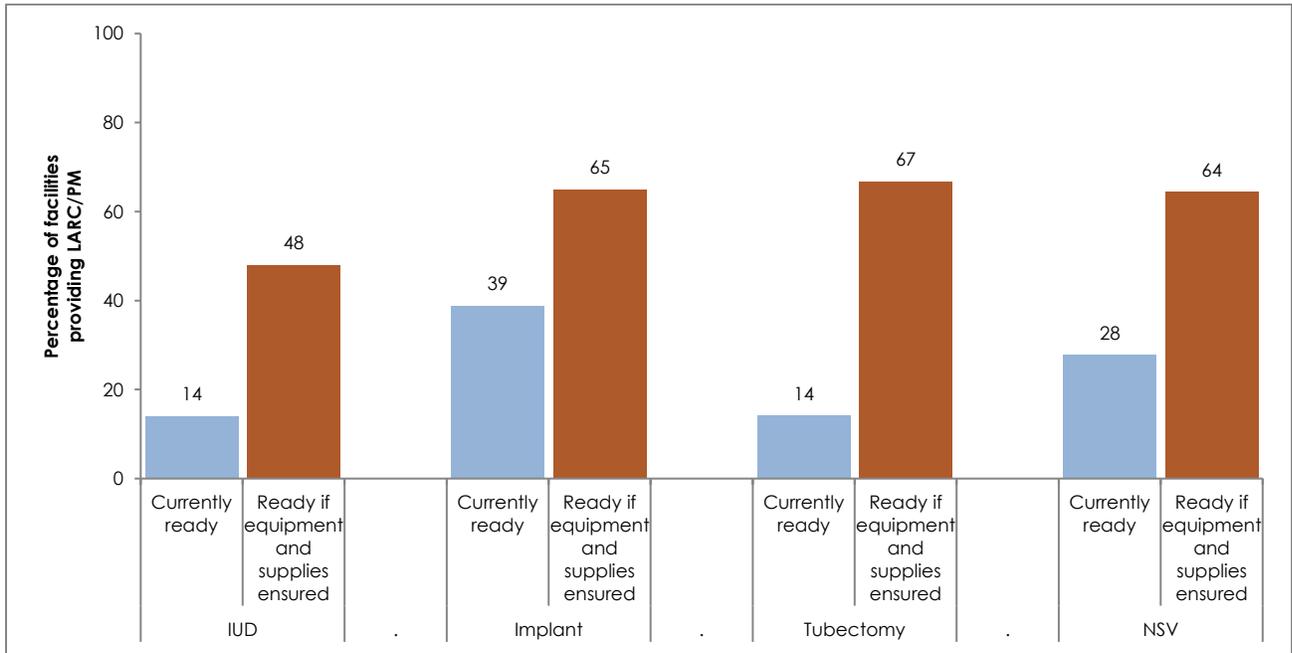
Note: DH—district hospitals and district general hospitals; UHC—50-bed, 31-bed, and 10-bed UHC; MCWC—district-level, upazila-level, and union-level MCWC

The Impact of Improving the Availability of Equipment and Supplies

Because the unavailability of equipment and supplies was the most common component responsible for lack of readiness, and because this might be tackled relatively easily, we wanted to see to what extent overall readiness could be improved by ensuring the availability of all the required equipment and supplies in each facility. We did a simulation exercise to assess the effect of the availability of equipment and supply on the overall readiness statistics for facilities (Figure 2). We found that, for implant- and NSV-providing facilities,

readiness could be increased from its current level of around 25 percent to about 50 percent or higher for public facilities. For IUDs and tubectomies, it could be increased from around 15 percent to about 33 percent and 50 percent, respectively.

Figure 2. Percentage of public facilities that would become ready if the availability of equipment and supplies were ensured



DISCUSSION

Our analysis identified the extent to which the LARC and PM services were available in facilities in Bangladesh and the extent to which facilities were effectively accessible. The first challenge to providing LARCs and PMs in Bangladesh was that large proportions of public facilities that were designated to provide implants, tubectomies, and NSVs reported that they did not offer the methods (22%, 37%, and 38%, respectively), and 31 percent of facilities that were designated to offer IUDs did not provide them. This high degree of unavailability of LARCs and PMs in facilities that are supposed to provide these services has likely contributed to their low prevalence in Bangladesh.

The DGFP carries out various behavioral change communication activities to increase the use of LARCs and PMs and conducts outreach to FP workers who counsel couples about the use of LARCs or PMs. The catchment population of the designated facilities is informed that LARC and PM services are available at the nearby facility. However, because about one in three facilities reported that they did not provide an LARC or PM, many who seek an LARC or PM may find that the method is not offered at that facility as expected. Such a high level of unavailability of LARCs and PMs in the facilities designated to provide these services is undesirable and principally incorrect. To avoid this issue, the DGFP should proactively inform the community about the unavailability of specific LARCs or PMs in facilities.

DGFP will need to investigate the reasons for this high unavailability of services in institutions that are supposed to provide them and take the necessary actions to ensure service delivery. We found that none of the facilities that reported not offering LARCs or PMs had a trained provider. Therefore, the primary reason for not offering designated services is the lack of a trained provider.

The high unavailability of LARCs or PMs in Bangladesh was compounded by poor facility readiness in those facilities that did offer LARCs or PMs. This further lowered the effective accessibility to appropriate quality LARC and PM services in Bangladesh and likely further contributed to the low prevalence of LARCs and PMs in Bangladesh. The biggest contributors to the lack of readiness were found to be the unavailability of the required equipment and supplies, followed by a lack of availability of trained providers in certain facilities (especially those closest to the communities which they were meant to serve). This meant that, even if someone wanted an LARC or PM in Bangladesh, the person either would have difficulty finding the needed LARC or PM service, or if he or she found a facility offering it, the service would be of poor quality associated with lack of readiness to provide the service. Effectively, the potential consumers of LARCs and PMs would have to travel some distance to find an appropriate-quality LARCs or PMs, because facilities closest to the consumer were often the least accessible for LARCs or PMs (in terms of both availability of service and the readiness to provide it).

The unavailability of providers has remained a chronic health system challenge for years. We also found the problem of unavailability of *trained* providers which compounds the issue of provider availability and thus the lack of provision of quality LARCs and PMs. This suggests that the establishment of an annual or biannual provider hiring mechanism may be necessary so that a pool of providers is readily available for deployment, whenever there are vacancies.

The high level of unavailability of equipment and supplies is unfortunate and is likely to be the result of a loophole in the existing logistics management information system (LMIS). We checked, as a test case, the availability of the autoclave/sterilizer (necessary for the sterilization of equipment used for IUD insertion) in

the UHFWCs according to DGFP's LMIS. In our analysis of data from the BHFS 2014, we found that about three out of four UHFWCs did not have an autoclave/sterilizer. When we checked the government LMIS for the central warehouse stock status of autoclave, the LMIS database showed that there were sufficient number of autoclaves/sterilizers in the central stock to fulfill the needs of all facilities. Something in the supply chain management was causing the unavailability of these autoclaves at the facility level. Further enquiry revealed that there was no systematic and routine (e.g., monthly) requisition system for equipment and supplies considering a reasonable buffer stock of items. A routine and mandatory requisition and stock reporting system is easy to establish and may solve this issue.

Equipment and supply are one component of readiness. The availability of functional equipment depends on its on-time supply and required regular maintenance. Therefore, routine and mandatory requisition of equipment maintenance and replacement is important to be in place, but its frequency may be less than that of supply. The current system is inefficient. Ad hoc requisition of equipment should be replaced by a routine reporting of the availability of functional equipment to the central or regional warehouse with immediate placement of the required equipment. An appropriate frequency for reporting and requisition is 4–6 times per month. Similarly, there should be more frequent reporting of availability of supplies (e.g., twice per month) and the regional or central warehouse should replenish the supplies in a routine basis. A good example is the routine reporting and replenishment of contraceptive products in the current LMIS.

In conclusion, development of new approaches to ensure the availability of trained provider and equipment and supplies will likely have a significant positive impact on LARC and PM uptake in Bangladesh.

RECOMMENDATIONS

We offer the following recommendations:

1. *Enhance the facility readiness in the area of availability of equipment and supplies*
 - DGFP should institute a routine and mandatory requisition and stock reporting system. (It is easy to establish such a system and will remarkably improve facility readiness to provide LARCs and PMs.) A paper-based checklist of all equipment required for providing LARC or PM should be developed and filled out every 4–6 months to be sent to regional or central warehouse, and the warehouse can replenish the required items. A similar supply checklist should be developed and filled out twice per month to request supplies from the warehouse. These two checklists can be transformed into an electronic database to make it a complete online system. Implementation research can help DGFP implement this system.
2. *Ensure the availability of trained providers in facilities that are designated to provide LARC and PM*
 - DGFP should identify the reasons for the mandatory facilities not being able to provide LARCs and PMs. (This study found that about one-third of the public facilities reported that they do not provide LARCs and PMs because they do not have trained providers.)
 - The Ministry of Health and Family Welfare should institute a twice-yearly recruitment system based on the projection of providers' retirement and turnover owing to other reasons to have a pool of female welfare visitors (FWVs) and medical officers for maternal and child health (MO-MCHs) who can be deployed as necessary. The disruption of health service provision owing to lack of providers is a serious issue that has continued for years. We found that just half of MCWCs do not have the required trained providers for implants, tubectomies, and NSVs. Although a sufficient number of medical doctors graduate from medical schools in the country to fill them, MO-MCH positions are vacant.
 - DGFP should ensure providers have appropriate training on clinical practice and pre- and post-procedure counseling. Regular refreshers and orientations should introduce new approaches and technologies.
 - DGFP should emphasize hands-on training on LARCs and PMs. In many cases, FWVs do not receive adequate clinical training of IUD insertion, owing to a lack of clients, nor do they receive any mentorship on insertion technique and other aspects. This results in FWVs' lack of confidence in their ability to perform this procedure, thus they are unlikely to provide IUDs, because they may feel uncomfortable doing the procedure. Similarly, MO-MCHs, the provider of tubectomies and NSVs do not receive adequate training.
 - DGFP should institute a mentoring program to ensure that the skills learned through the training are practiced by the trained providers, usually the relatively young and junior providers. The existing supervisors can undertake this mentoring task.
3. *DGFP should introduce an accountability system that will enhance the key aspects of service provision—such as provider availability and training, service readiness (in terms of equipment and supplies), and quality of care—as a package, to increase demand for LARCs and PMs and thus increase the use of public facilities for FP. Implementation research can help such a system.*

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APPENDIX A: FINALIZED COMPONENTS NECESSARY TO PROVIDE LARCS AND PMs IN BANGLADESH

Components Necessary to Provide IUDs in Bangladesh

1. At least one trained female provider consisting of either an FWV, a paramedic, a nurse, a doctor, a sub-assistant community medical officer, or a midwife.
2. FP guidelines
3. Equipment and supplies required for the procedure:
 - a. **Equipment**
 - Examination flashlight/torch light
 - Galipot
 - Tenaculum
 - Cuscovaginal speculum medium
 - Uterine sound
 - Straight artery forceps
 - Straight cutting scissors
 - Any bucket
 - Autoclave/IUD sterilizer/sterilizer
 - b. **Supplies**
 - IUD package
 - Povidon iodine solution
 - Sterile surgical gloves
 - Gauze/Cotton
4. Post-procedure medicines
 - a. Paracetamol or Ibuprofen with ranitidine
 - b. Iron folic

Components Necessary to Provide Implants in Bangladesh

1. At least one trained physician:
 - a. Medical specialist (medicine, surgery, obstetrician/gynecologist [OB/GYN], other)
 - b. Medical officer (nonspecialist doctor, emergency medical officer [EMO], indoor medical officer [IMO], maternal and child health/family planning medical officer [MCH-FP], residential medical officer and others [RMO])
2. FP guidelines
3. Equipment and supplies required for the procedure:
 - a. **Equipment**
 - Sponge-holding forceps
 - Bucket
 - b. **Supplies**
 - Implant
 - Xylocaine/1-percent lidocaine, without adrenaline
 - Povidon iodine solution
 - Hand wash/handwashing soap
 - Surgical gloves
 - Gauze/cotton
 - Surgical drapes
 - Bandage/butterfly bandage/elastomeric dressing
 - Disposable syringe
4. Post-procedure medicines:
 - a. Paracetamol

Components Necessary to Provide Tubectomy in Bangladesh

1. At least one trained physician:
 - a. Medical specialist (medicine, surgery, OB/GYN, other)
 - b. Medical officer (nonspecialist doctor, EMO, IMO, MCH-FP, RMO, and others)
2. FP guidelines
3. Equipment and supplies required for the procedure:
 - a. **Equipment**
 - Operating theatre (OT) table
 - OT light
 - Autoclave/sterilizer
 - B.P. handle
 - Needle holder
 - Babcock tissue forceps
 - Straight artery forceps
 - Curved mosquito artery forceps
 - Tissue forceps
 - Plain dissecting forceps
 - Scissor
 - Sponge-holding forceps
 - Retractor
 - Lifter jar with lifter
 - Instrument trolley
 - Cutting curved needle
 - b. **Supplies**
 - Physician gown
 - Trolley sheet
 - Draw sheet
 - Cap
 - Mask
 - Gauze/cotton
 - Any suture (catgut/Dexon/Vicryl/silk thread)
 - Surgical gloves
 - Syringe
 - Surgical blade
 - Inj. Xylocaine 1 percent 50mL
 - Inj. Atropine
 - Inj. Prometazine
 - Inj. Pethidine
 - Povidon iodine solution
 - Diazepam
 - Tubectomy sheet [not included in analysis owing to unavailability of data]
4. Post-procedure medicines:
 - a. Antibiotic (Ciprofloxacin/Azithromycin)
 - b. Paracetamol
 - c. Iron folic
5. Emergency services [not included in analysis due to unavailability of all necessary data]

Components Necessary to Provide NSV in Bangladesh

1. At least one trained physician:
 - a. Medical specialist (medicine, surgery, OB/GYN, other)
 - b. Medical officer (nonspecialist doctor, EMO, IMO, MCH-FP, RMO and others)
2. FP guidelines
3. Equipment and supplies for the procedure:
 - a. **Equipment**
 - OT table
 - OT light
 - Autoclave/sterilizer
 - Ring forceps
 - Vas dissecting forceps
 - Small surgical scissor
 - Galipot
 - Lifter jar with lifter
 - b. **Supplies**
 - Physician gown
 - Trolley sheet
 - Instrument trolley
 - Cap
 - Mask
 - Gauze/cotton
 - Gloves
 - Syringe
 - Silk thread
 - NSV sheet
 - Povidon iodine solution
 - Inj. Xylocaine 1 percent 50mL
 - NSV sheet [not included in analysis owing to unavailability of data]
4. Post-procedure medicines:
 - a. Antibiotic (ciprofloxacin/azithromycin)
 - b. Paracetamol
5. Emergency services [not included in analysis owing to unavailability of all necessary data]

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