Contraceptive Availability and Stock-outs Before and After the 2012 Coup in Bamako, Mali

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INTRODUCTION

Mali is typical of Francophone West Africa in terms of high fertility (TFR=6.3) and low modern contraceptive prevalence (6%). Although several NGOs began to demonstrate promising results in recent years (e.g., Marie Stopes International, PSI), with the coup of March 2012, local FP organizations greatly diminished their activity, and some international donors suspended their support, leaving many women and adolescents with little or no access to contraception. Early 2012, Tulane University, in collaboration with MARIKANI, the local implementing partner, spearheaded a series of activities in 2012 under a larger project that assesses the FP environment in Bamako: an inventory of all organizations working in behavior change communication and FP advocacy, a survey of all health facilities and pharmacies delivering contraceptives in Bamako, and the development of a website describing FP in Mali. The facility survey had just gotten underway when the coup occurred. In the fall of 2013, Tulane University and MARIKANI are conducting a follow-up survey to assess the availability and delivery of modern contraceptives in Bamako one year post-coup. This study aims to 1) describe the family planning (FP) provision environment in Bamako (Mali) right before the coup in 2012 and one year after (2013), and 2) examine facility-level characteristics that may be associated with the provision and stock-outs of modern contraceptives.

METHODS

Data came from a baseline survey of 602 pharmacies and health facilities in urban Bamako conducted in March 2012, among them 409 were providing FP services at the time of the survey, and an on-going follow-up survey of 80 pharmacies and health facilities. The 2012 survey covered the entire six communes in the District of Bamako and included all types of facilities (public, private, non-profit, etc.) A structured questionnaire was used in one-on-one interviews with a facility staff who was knowledgeable about FP service provision at the facility. Questions were asked about the facility's characteristics, the availability of modern contraceptives, whether they were available on the day of visit, and the volume of contraceptive commodities that were provided in the last three months of 2011. The same questions will be asked in the 2013 follow-up survey, which includes a random sub-sample of this universe of facilities. Descriptive and multivariate analyses were used to assess the FP provision and associations between facility-level characteristics and the two outcomes: the number of modern

contraceptives that were usually provided or prescribed at a facility, and if they were provided, whether there were any stock-outs on the day of facility visit. Data from the baseline and follow-up surveys will also be matched to examine changes in the FP environment before and after the coup. Ethical review and approval was granted by Tulane University Internal Review Board (IRB); MARIKANI also obtained local IRB approval for the fieldwork of this study.

RESULTS

This section describes the results that have been obtained so far with the 2012 data. Table 1 shows characteristics of 409 pharmacies and health facilities that were providing FP services in urban Bamako. On average, 3.7 modern contraceptives were provided or prescribed at a facility. However, nearly half (46%) of the facilities had at least one method that was out-of-stock on the day of visit.

Table 1 about here

Most (88.3%) of the sample were private facilities; they had four staff on average that were involved in the provision of FP services. Yet, just over one of them would have been trained in FP services in the last three years. The majority of them (62%) had a functional system that collected information on the number of contraceptives provided. Very few (6.6%) had a staff member dedicated to FP behavior change communication and advocacy.

Table 2 provides details on specific methods of contraception that were usually provided or prescribed at the facilities. Dépoprovera injectables seemed the most popular method as they were available at nearly all facilities (90%), followed by Pilplan oral pills, which were available at almost four in five facilities. Male condoms were also common: 59% of facilities were providing this method in 2012. Other methods, including Jadelle implants, TCu380A IUD, female condoms, Ovrette oral pills, were available for delivery or prescription at one in five to one in four facilities. Spermicides were also available at a few facilities, while the rest were uncommon.

Table 2 about here

Stock-outs were fairly significant among pharmacies and health facilities that provided the common methods of contraception. Among the facilities that provided Pilplan and Dépoprovera, nearly 30% of them did not have these methods in stock on the day of visit. Male condoms were also not available at 22% of the facilities that reported providing them on a

regular basis. Stock-outs of the other frequently provided methods were also common; as many as half (48.8%) of facilities that reported providing Ovrette pills did not have them in stock at the time of the survey.

Unadjusted and adjusted associations between the two outcomes and facility-level characteristics

Table 3 presents the variations in the two outcomes by facility-level characteristics and associations between them. The first two columns show results on the number of contraceptives provided/prescribed, while the last two columns show results on any stock-outs on the day of facility visit. It is noted that one factor – whether there was a staff member dedicated to FP behavior change communication and advocacy – was not included in the table because of the small number of facilities that reported yes to this question.

As shown in the first column, the number of methods of contraception provided varied significantly between public and private sectors: public sector facilities provided or prescribed more methods than did private sector facilities (4.64 vs. 3.58, $p<.01$). If a facility reported having a system to collect information on contraceptives provided, it also reported providing more modern contraceptives than one that did not have such a system (4.19 compared to 2.92, $p<.001$). The number of methods provided at a facility was also positively associated with the number of FP staff and the number of staff trained in FP in the last three years ($p<.001$ in both cases).

Table 3 about here

The multivariate regression model shows similar results. Having a reporting system that collected information on contraceptives seemed the strongest predictor of the number of methods provided: on average, facilities who had such as system provided or prescribed one more method than those who did not have this type of system ($p<.001$), controlling for other facility-level factors. An increase of one staff member trained in FP services was associated with a .24 increase in the number of contraceptives provided ($p<.01$), while the same increase in the number of FP providers at a facility was only associated with a .14 increase in the outcome ($p<.001$). There were no statistically significant differences between the public and private sectors once the other facility-level factors were controlled for.

Contraceptive stock-outs, on the other hand, were associated with only two facility-level factors in both the unadjusted and adjusted analyses. While more than 60% of facilities without a

contraceptive reporting system experienced at least one method stock-out on the day of visit, only 39% of those with a reporting system did so ($p<.001$). When facility-level characteristics were controlled for, having a system to collect information on contraceptives provided was associated with a significantly lowered risk of having stock-outs (O.R.=.34, $p<.001$). However, it is surprising to note that having more staff trained in FP services in the last three years were associated with an increased chance of having at least one method out-of-stock on the day of visit (O.R.=1.30; $p<.01$).

DISCUSSIONS AND NEXT STEPS

Preliminary results from the 2012 facility survey indicate that modern contraceptive choice was available from pharmacies and health facilities in the six communes of urban Bamako. Dépoprovera injectables, Pilplan oral pills, and male condoms were the three most frequently provided or prescribed methods at these facilities. However, stock-outs were common as nearly half of all facilities had at least one method out-of-stock on the day of facility visit. Having a reporting system for contraceptives was significantly associated with both an increased number of contraceptives provided and a lower risk of having stock-outs. The finding underlines the need for a functional system that regularly collects information on contraceptive commodities that are supplied to and dispensed at the facility level. To this end, Tulane University and MARIKANI are piloting an early warning system that will collect and display weekly digital reports on contraceptive availability. Staff members in charge of contraceptive supplies at FP sites will be trained in completing and submitting reports using smartphones. Key users of data will be trained on how to consult the platform to identify gaps and prepare real-time reports on contraceptive stock-outs. Results of the pilot test will become available in the end of 2013.

It is important to note an unexpected finding, in which stock-outs of contraceptives were positively associated with the number of staff members trained in FP services in the last three years. There are two possible explanations. First, it is also possible that facilities with more staff members trained in FP services were more productive in providing contraceptives (e.g. they had more clients), and thus, more likely to run into stock-outs. However, we did not find evidence that supports this hypothesis as the number of the two most frequently provided contraceptives (injectables and oral pills) provided in October, November and December of 2011 was not associated with the number of staff trained in FP (not shown). Second, it is possible that training

efforts were specifically targeting FP facilities that were more likely to have stock-outs of contraceptives. A review of the training content would be helpful to further explore this association.

Once data from the 2013 survey become available, we plan to conduct a similar analysis. In addition, data from the 80 pharmacies and health facilities included in both surveys will be combined to examine changes over time. Although the small sample size of the follow-up survey may prevent the findings from being statistically significant, the analysis will allow an assessment of any changes in patterns of the associations between contraceptive availability and stock-outs with facility-level factors. More importantly, the analysis will describe changes in the FP service environment in Bamako before and after the coup, which will have important implications for policy makers and contraceptive donors.

Table 1. Description of 409 facilities that provided FP services in 2012, Bamako, Mali.

Characteristic	**Distribution**
	% or mean (s.d.)
Number of modern contraceptives provided/prescribed (range: 0-17)	3.70 (2.31)
Any contraceptives out-of-stock on the day of visit	46.30
Type of facility	
Private	88.26
Public	11.74
Number of staff providing FP services (range: 0-21)	4.05 (2.97)
Number of staff trained in FP services in the last 3 years (range: 0-11)	1.29 (1.52)
Facility has a system to collect information on number of contraceptives provided	61.92
Facility has a staff responsible for FP behavior change communication and advocacy	6.63
N	**409**

Table 2. Method-specific availability and stock-outs on the day of visit, Bamako, Mali 2012.

Method	Provided or prescribed at facility %	Out-of-stock on the day of visit[a] %
Pills		
Pilplan	78.48	29.91
Lo-femenal	2.44	(80.00)
Microgynon	5.38	(63.64)
Ovrette	20.54	48.81
IUDs		
TCu 380A	26.41	34.26
Type 2	.73	(100.00)
Type 3	.73	(100.00)
Implants		
Implanon	.49	(100.00)
Jadelle	26.65	33.94
Norplant	2.44	(70.00)
Injectables		
Dépoprovera	90.46	27.30
Noristerol	3.42	(78.57)
Others	1.22	(80.00)
Condoms		
Male	59.17	22.31
Female	22.25	38.46
Spermicides		
Brand A	16.87	40.58
Brand B	12.96	39.62
Total	**409**	

[a] Calculated among facilities that usually provided or prescribed the method.

(%) % in parentheses denotes stock-outs among fewer than 25 facilities.

Table 3. Associations between the number of contraceptive methods provided/prescribed at a facility and any stock-outs with facility's characteristics, Bamako, Mali 2012.

	Number of methods provided		**Any stock-outs**	
	Mean (s.e.)	**Adjusted Coef. (s.e.)**	**%**	**Adjusted O.R. (s.e.)**
Type of facility				
Private	3.58 (.12)**	--	45.48	1.00
Public	4.64 (.33)**	.23 (35)	52.17	1.40 (.48)
Number of staff providing FP services	.21 (.04) [a]***	.14 (.04)***	.98 (.03) [a]	.96 (.04)
Number of staff trained in FP services in the last 3 years	.39 (.07) [a] ***	.24 (.08)**	1.22 (.09) [a] ***	1.30 (.11)**
Facility has a system to collect information on number of contraceptives provided				
No	2.92 (.21)***	--	61.24***	1.00
Yes	4.19 (.12)***	.96 (.23)***	38.87***	.34 (.08)***
R-squared		.15		

[a] Unadjusted coefficient or O.R. and standard error.

** p<.01; *** p<.001