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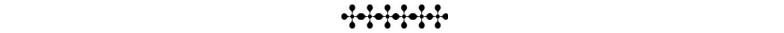

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USING A PATIENT-HELD RECORD SYSTEM TO EXAMINE FAMILY PLANNING UPTAKE, CONTINUATION OF USE, AND METHOD/PROVIDER-SWITCHING IN RURAL KARONGA

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1. INTRODUCTION

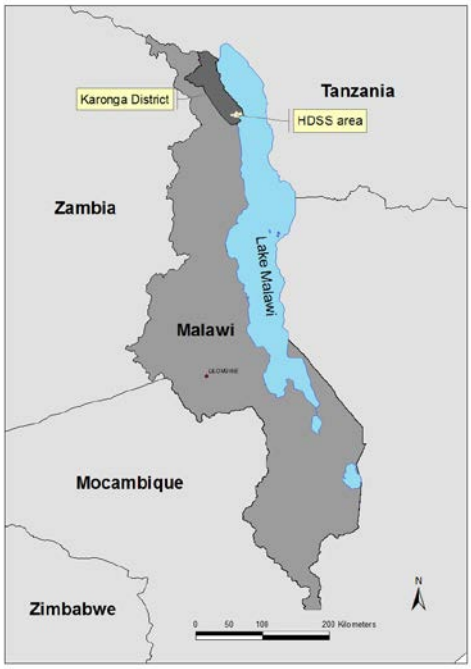
Women bear on average six children in Malawi, and many pregnancies are unintended or occur sooner than desired. Although 42% of married women use modern methods of contraception, 26% are estimated to have an unmet need for contraception for either spacing or limiting births[1]. It is important to examine contraceptive switching and discontinuation because as desired family size declines and contraceptive prevalence increases, effectiveness and duration of use become increasingly significant determinants of total fertility, unintended pregnancies and induced abortions[2]. Data on family planning (FP) come from a variety of sources; for example, surveys, routine data collected at health facilities, or using the Demographic and Health Survey (DHS) retrospective self-reported calendar method. With the exception of the calendar method, conventional assessments of FP do not always capture switching or discontinuation.

Evaluations of the calendar method suggest it is fairly robust and reliable[2], although Strickler and colleagues argue that contraceptive discontinuation and failure rates are less likely to be accurate in calendar data ([3]cited in[4]). This calls for an

exploration of other, prospective methods for collecting data, which may better capture FP switching (of methods or facilities) or discontinuation. In this paper, we describe a new method for collecting FP data, and provide early findings from the study.

The Karonga Prevention Study (KPS) operates a health and demographic surveillance site (HDSS) in northern rural Malawi[5] (figure 1). The population under observation in the HDSS on 9 February 2012 was 35,135. Recent KPS studies have focused on adult HIV, sexual and reproductive behaviour, and fertility intentions. A range of FP methods are provided in the HDSS area through different mechanisms (public, private, clinic, outreach) and service providers (clinical officers, nurses, medical assistants, health surveillance assistants (HSAs), and volunteer community-based distribution agents (CBDAs).

Figure 1: Karonga District, Malawi



Source: Karonga Prevention Study maps

The KPS is an ideal place for observational studies of FP because of a) KPS's close links with the health facilities and providers of FP, and the opportunity to collaborate with the district FP team, b) the ability to link new FP data to the HDSS database using identifying information, which will provide a wealth of explanatory variables to explore, c) the availability of related data (e.g., on fertility intentions, marital history, parity, and HIV status), and d) the large number of potential study participants living within the HDSS.

2. MATERIALS AND METHODS

This study used an innovative method for collecting FP data using patient-held records capturing provider data to build a prospective longitudinal data set that allows exploration of continuity of use and provider/method-switching, and can be linked to the HDSS database. To outline the method briefly: all 8,176 women aged 15-49 living in the Karonga HDSS were offered an FP card. When a woman accessed a FP service, the health provider recorded on her FP card the date, method received (or advice given), and provider type. After one year, the FP cards were collected by KPS for data entry, linkage to the HDSS database, and analysis.

Approval was sought from group village headmen, chiefs, and the Area Development Committee prior to starting the study. Following this, 16 community sensitization activities — combining local dance/song troupes (which attracted large audiences) and KPS staff members — were designed to explain the study aims and data collection methods, and to answer any questions. These activities were done with the aim to address potential misconceptions from the local community, and reduce refusals.

The HDSS is split into 30 reporting groups, which in turn are divided into 278 clusters (figure 2). Each cluster has a key informant who lives in the area and has been trained by KPS to use formatted registers for notifying KPS of vital events and migrations. As part of this FP study, 30 separate sessions were held for KPS staff to train the 278 key informants on how to distribute the FP cards using listings of the (approximately 25-40) women of reproductive age living in each cluster. The key informant was asked to visit all women on his/her listing between January and April 2012, explain the study, and (if she agreed) attach the FP card (with pre-printed identification information for each woman) to the inside front page of the woman's health passport (patient held medical record). The listing was updated to reflect whether or not the woman accepted the FP card. The listing was returned to KPS in a second meeting held roughly 10 days after the initial training, along with any remaining FP cards. A small payment was given to the key informants in recognition of their efforts. There were ranges in skills, education levels, and ages among the key informants. For those who struggled, a KPS staff member either re-visited them to assist with the task or matched the key informants with others who had demonstrated they were competent with the task, so that they could work together.

All 132 health providers working in the area — clinical officers, nurses, medical assistants, HSAs, and volunteer CBDAs — were trained in six separate sessions on how to record information on the FP cards (method, date, where the service was provided, and their own individual three-digit staff code) whenever they provided an FP service or gave FP advice to a woman who had an FP card. Three subsequent refresher trainings were conducted for all health providers. Motivational text messages were periodically sent to all health providers, as a way to encourage them to continue

recording information on the cards. As the Karonga District FP Coordinator (author – R.N.) was closely involved with the study and running the health provider trainings, she incorporated this task as part of their record-keeping responsibilities. All providers were given mobile phone air-time so they were able to call the study mobile phone number in case of any questions.

Figure 2: Karonga HDSS area

Source: Karonga Prevention Study maps

Allowing for one year of data collection, the FP cards were collected by KPS staff at pre-arranged gathering places from February to April 2013. Women were also asked about their FP use over the previous year. If an FP service had not already been

recorded on the card by the health provider, it was captured by KPS staff, and a note was made as to whether the information had come from the health passport or the woman told the KPS staff member verbally. Written or thumb-print consent was sought from each woman to analyse and use the data recorded for the purposes of this study. A small payment was given as compensation for their time taken to attend the collection session.

The new quantitative FP data were linked to the KPS database using unique identifying information for each woman.

3. RESULTS

Table 1 presents details of recruitment to the study. A total of 6,997 women (86%) were issued an FP card. Acceptance was highest in the 40+ age-group (91%), and lowest in the under-20 age-group (80%). The main reason for not being issued with a card was "woman not found" (6%). Frank refusals were low (1%).

Table 1: Details of Recruitment to the Study, by Age

	Age (Column %)				
Status	**Under 20**	**20-29**	**30-39**	**40-49**	**Total**
Accepted card	1,665 (79.8)	2,380 (84.9)	1,894 (89.3)	1,058 (91.4)	6,997 (85.7)
Woman left	205 (9.8)	206 (7.4)	97 (4.6)	39 (3.4)	547 (6.7)
Woman not found	187 (9.0)	184 (6.6)	96 (4.5)	38 (3.3)	505 (6.2)
Died	0 (0.0)	1 (0.0)	0 (0.0)	4 (0.4)	5 (0.1)
Refused	25 (1.2)	31 (1.1)	31 (1.5)	14 (1.2)	101 (1.2)
No health passport	4 (0.2)	1 (0.0)	2 (0.1)	1 (0.1)	8 (0.1)
Other	0 (0.0)	0 (0.0)	2 (0.1)	3 (0.3)	5 (0.1)
Total	2,086 (100)	2,803 (100)	2,122 (100)	1,157 (100)	8,168 (100)

Further results presented are restricted to those for whom data entry has already been carried out. Findings will therefore be updated in due course.

Of the 3,529 women from which KPS attempted to collect cards, cards were successfully collected from 2,380 women (67%). Of these, 654 (28%) had FP data already recorded on the card by a health provider, and 1,716 submitted a blank card. However, upon probing, some of the women who submitted blank cards were indeed FP users. Either the data had not been recorded on the card by the health provider or the woman was already a user of a long-acting method (tubal ligation, implant or IUD) prior to receiving the card, and hence the card appeared blank. Accounting for this, a total of 1,476 women (62%) had used a modern FP method at some point over the course of the study year.

We restrict the following analysis to tubal ligations, implants, injections, oral contraceptive pills (OCPs), and implant removals. We exclude data on male condoms and female condoms because they are predominantly viewed as HIV prevention rather than FP, and also it is particularly difficult to tell from these data whether they are being used consistently.

Table 2 shows the number of woman-provider contacts for FP methods, according to the facility that the provider reports to. Injectables account for the most common woman-provider contact, at 75% of all provisions, followed by OCPs, presumably because these are methods that require repeat visits.

Providers that report to Chilumba Rural Hospital (CRH) account for most service provisions (672), followed by providers reporting to Sangilo (340) and Fulirwa (116). Sangilo appears to provide more OCPs compared to providers reporting to any of the

other facilities. Also of note is that providers from Banja La Mtsogolo (the Marie Stopes provider in Malawi) tend to provide more long-acting methods, including tubal ligations and implants. It also appears that no IUDs were provided.

Table 2: Method of FP Provided, according to the Facility to Which the Provider Reports

	FP Method (Column %)					
Facility	**Tubal ligation**	**Implant**	**Injectable**	**OCPs**	**Implant / IUD removal**	**Total**
Chilumba Rural Hospital (CRH)	0 (0%)	18 (3%	560 (83%)	92 (15%)	2 (0%)	672 (100%)
Fulirwa	0 (0%)	0 (0%)	99 (85%)	17 (15%)	0 (0%)	116 (100%)
Hara	0 (0%)	1 (1%)	70 (88%)	9 (11%)	0 (0%)	80 (100%)
Sangilo	0 (0%)	4 (1%)	206 (61%)	128 (38%)	2 (1%)	340 (100%)
Garrison	0 (0%)	9 (11%)	75 (88%)	1 (1%)	0 (0%)	85 (100%)
KPS staff	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)
Banja La Mtsogolo	20 (38%)	26 (50%)	6 (12%)	0 (0%)	0 (0%)	52 (100%)
St Anne's	0 (0%)	0 (0%)	3 (100%)	0 (0%)	0 (0%)	3 (100%)
Chiza	0 (0%)	0 (0%)	14 (100%)	0 (0%)	0 (0%)	14 (100%)
Outside the study area	2 (20%)	4 (40%)	3 (30%)	1 (10%)	0 (0%)	10 (100%)
Unknown	5 (11%)	3 (6%)	34 (72%)	4 (6%)	1 (2%)	47 (100%)
Total	27 (2%)	65 (5%)	1,071 (75%)	252 (18%)	5 (0%)	1,420 (100%)

Table 3 shows where the service was actually delivered, according to the staff cadre. HSAs are responsible for the majority of woman-provider contacts (60%), followed by nurses (16%) and CBDAs (15%). This is likely to be because HSAs provide injections and OCPs, which require repeat visits, and also because there are simply many HSAs. Although there are also large numbers of CBDAs, they are only trained to provide OCPs and condoms (condom provision not reflected in this table).

Table 3: Staff Cadre that Provided the FP Service, according to the Location of Where the Service Was Delivered

Where delivered	Staff Cadre						
	Clinician	Medical assistant	Nurse	HSA	CBDA	Youth CBDA	Total
Government	49 (12%)	16 (4%)	192 (47%)	112 (27%)	3 (1%)	0 (0%)	412 (100%)
Christian Health Association of Malawi	4 (6%)	0 (0%)	31 (44%)	21 (30%)	9 (13%)	1(1%)	70 (100%)
NGO	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)
Private	0 (0%)	4 (80%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (100%)
Outreach	0 (0%)	0 (0%)	0 (0%)	187 (91%)	41 (18%)	0 (0%)	232 (100%)
Provider's home	0 (0%)	3 (1%)	0 (0%)	498 (93%)	32 (6%)	2 (0%)	537 (100%)
Woman's home	0 (0%)	0 (0%)	0 (0%)	9 (7%)	122 (92%)	0 (0%)	132 (100%)
Other	2 (10%)	0 (0%)	0 (0%)	13 (62%)	1 (5%)	0 (0%)	21 (100%)
Total	56 (4%)	23 (2%)	223 (16%)	840 (60%)	208 (15%)	3 (0%)	1,410 (100%)

Most provisions of FP tend to take place in a government facility (CRH, Fulirwa, Hara, Garrison), or otherwise at the community level, including at the provider's home, the woman's home, or at an outreach clinic/health post. Although FP is provided at Sangilo, it is restricted at St Anne's, which perhaps accounts for the lower number of service provisions at Christian Health Association of Malawi facilities.

Although health providers were trained to record all FP services on the designated FP card, 74% (1,040) of woman-provider contacts were recorded on the card, as displayed in table 4. The remaining 26% was either found in the health passport or was reported verbally by the woman to the KPS staff member upon collection of the card.

CBDAs are most likely to have recorded the service they provided, with 87% of their services captured on the FP cards. It appears that if the CBDA had not captured the service on the FP card, it was unlikely they had recorded it in the health passport either,

as only 2% had data recorded in the health passport from the CBDA if the data hadn't been recorded on the FP card.

Table 4: Source of Data, by Type of Health Provider

	Source of Data (Column %)			
Provider type	**FP card**	**Health passport**	**Verbal**	**Total**
Clinician	27 (51%)	6 (11%)	20 (38%)	53 (100%)
Medical assistant	13 (57%)	6 (26%)	4 (17%)	23 (100%)
Nurse	164 (74%)	39 (18%)	19 (9%)	222 (100%)
HSA	644 (77%)	87 (10%)	107 (13%)	838 (100%)
CBDA	180 (87%)	4 (2%)	23 (11%)	207 (100%)
Youth CBDA	2 (67%)	0 (0%)	1 (33%)	3 (100%)
Unknown provider	10 (19%)	12 (23%)	31 (58%)	53 (100%)
Total	**1,040 (74%)**	**154 (11%)**	**205 (15%)**	**1,399 (100%)**

Clinicians were least likely to have recorded the FP service on the FP card, with only 51% doing so. What was interesting to note is they were also less likely to have recorded the information on the health passport, with more than a third of their FP provisions being reported to KPS verbally by the woman. Nurses were likely to have recorded the data in the health passport, if they had not captured it on the FP card.

Continuing to exclude male and female condom use from the analysis, 6% of women switched their FP method over the course of the year. Including male and female condoms, the figure rises to 17%, suggesting that women are more likely to switch between barrier and non-barrier methods of FP. However, this might be more related to HIV prevention than reflecting a population which successfully switches between FP methods.

4. DISCUSSION

Although 42% of married women report using FP in Malawi as a whole[1], we find that 62% of our study women have used *some* method of FP at *some* stage over the study year. However, this figure does not reflect the fact that many of these women might be using FP haphazardly and inconsistently. This is particularly so for women using injectables and OCPs, who are more prone to discontinuation given these methods require repeat visits. In fact, the majority of woman-provider contacts were for injections and OCPs.

Our findings demonstrate the importance of community-based distribution of FP. Most provisions of FP services occurred either through outreach or at the provider or woman's home. The majority of woman-provider contacts were with lower cadres of health providers, including HSAs and CBDAs which underscores the importance of having well-trained community health workers, who do not suffer stock-outs.

A shortfall of the study methodology was the difficulty of monitoring condom use. Condoms in Malawi are highly linked with HIV prevention, and may sometimes be seen as inappropriate to use within marriage [6, 7]. This is a view not only held by some patients, but also with health providers. Despite training health providers to record condom provision on the FP cards, they were very commonly missed, probably because the provider considered them part of HIV prevention and not FP. Moreover, condoms may be bought from shops, and are more commonly purchased by men rather than women, which may have translated into gross underreporting of condom use on the FP cards.

A finding from a KPS qualitative study currently underway is that condoms tend to be haphazardly used, and may be associated with power and control in the relationship (unpublished findings). Therefore, even in cases where provision of condoms was recorded on the FP cards, it is not clear to what extent the condoms were actually used.

The innovative methodology that was used to collect FP data managed to capture 74% of all woman-provider contacts. For the contacts not captured on the FP card, 11% had been recorded in the health passport. However, 15% of woman-provider contacts had not been recorded anywhere on the woman's health record (neither the health passport, nor the FP card), and this was especially so where the service had been given by a higher cadre provider. This has implications for the quality of record-keeping, especially where such record-keeping is used to provide a consistent service to the client, and data linking at the facility level is not yet possible. In the absence of computer records, patient-held records may be the most reliable method for tracking a woman's service use and ensuring she is fully protected against unplanned pregnancy; and so it is important that these data are complete if they are to be useful. Therefore, repeat training sessions to health providers to ensure record-keeping is accurate may prove important.

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