Evaluation of Community-Based Distribution of DMPA by Health Surveillance Assistants in Malawi

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Executive Summary

Background

Malawi is one of the fastest growing and poorest countries in the African region (Haub and Kent 2008), and the Malawian government has identified increasing contraceptive prevalence as a priority in the country's Growth and Development Strategy. In 2004, modern contraceptive prevalence among married women was 35% in urban areas, 27% in rural areas, and 28% in total (Malawi NSO and ORC Macro 2005). The Malawi Growth and Development Strategy goal is to increase contraceptive prevalence to over 40% by 2011.

Unmet need for contraception remains particularly high in rural areas, where over 80% of Malawians live (Malawi NSO and ORC Macro 2005). To meet the needs of rural women, community-based distribution (CBD) of family planning has been available in Malawi for some time. To date, the CBD program has focused on provision of oral contraceptives and condoms.

Evidence from a number of countries and settings shows that community-based provision of depot-medroxyprogesterone acetate (DMPA) can lead to increased uptake of family planning (WHO 2009). This strategy is likely to succeed in Malawi, where unmet need is high in rural areas and where injectables are the most popular type of contraceptive method identified for current and future use.

Health Surveillance Assistants (HSAs), the lowest-level cadre in Malawi's public health system and the group that provides the majority of primary health care services, have provided community-level family planning services in a few districts that opted to train them. In 2007, the Health Policy Initiative conducted a feasibility study to assess the need for provision of injectable contraceptives at the community level and to gauge the acceptability of using HSAs to provide these services (Richardson et al. 2009). The study documented strong desire for injectable contraceptive services at the community level and reported that rural women prefer injectables because they are long-lasting, require fewer trips to the clinic, are convenient and private, and have few side effects (Richardson et al. 2009). A majority of rural women in the study were in favor of provision of injectables by HSAs. Providers favored training HSAs for the role because they already provide immunization injections.

As a result, a pilot program was designed to improve access to DMPA services in rural communities. In nine pilot districts, HSAs in hard-to-reach areas or areas where family planning services were not available were selected to participate in a six-day DMPA training program. Through the pilot program, HSAs have provided DMPA services in the community and in health facilities on specific days. Community-based distribution agents (CBDAs) have continued community-based provision of condoms and oral contraceptives.

In early 2009, the U.S. Agency for International Development (USAID) office in Malawi asked FHI to develop and implement an independent evaluation of the pilot program after one year of service provision. The evaluation was designed to address salient issues at the client and provider levels as identified by the Ministry of Health (MOH), USAID, and program stakeholders.

Study objectives
The goal of the evaluation was to provide information to help the Malawi MOH decide whether the pilot program should be brought to scale and to provide guidance for scale-up, if warranted. Objectives for the evaluation were developed in consultation with the Reproductive Health Unit of the MOH, USAID, and the two organizations that implemented the pilot, Adventist Health Services (AHS) and Management Sciences for Health (MSH).

The specific objectives of the evaluation were:

- To assess the HSA DMPA program training, supervision, and supply systems and their coordination with other community- and facility-based family planning services;
- To assess the service delivery environment, including accessibility and the quality of DMPA services provided by HSAs; and,
- To determine the number of clients obtaining DMPA from HSAs and classify them as new, restarting, continuing users, or users who switched to DMPA from another method.

Study Design and Methods
This study was a non-experimental, post-test evaluation. Cross-sectional measurements of evaluation outcomes were obtained from observations of client-provider interactions and from structured interviews with HSAs, CBDAs, HSA supervisors, and HSA DMPA clients. Clients were recruited in two ways: from the HSA registers and after HSA direct observation visits (exit interviews). Key informant interviews were conducted at the district, zonal, and central levels. In addition, program records and service statistics were examined to assess the program retrospectively. This evaluation was approved by FHI's Protection of Human Subjects Committee and the Malawi National Health Sciences Research Committee.

The evaluation focused primarily on four of the nine districts where HSAs were providing family planning: Zomba, Karonga, Chikwawa, and Kasungu Districts. Four study teams were responsible for structured interviews, observations, and data collection from program records. The local principal investigator was responsible for key informant interviews at the district, zonal, and central levels. Data collection was conducted from February 22 to March 24 in 2010. Interviews were conducted with 368 clients, 32 HSAs, 20 HSA supervisors and 34 CBDAs. In addition, there were 236 observations of HSAs providing DMPA, 43 key informant interviews and a review of program records from 32 HSAs.

Results
The results are divided into five sections: the scope of the program; community perceptions and client satisfaction; the quality and safety of HSA provision of DMPA; HSA training, supervision, and supplies; and the impact of the program on the health system. Highlights are as follows:

Scope of program

- Program records from fourteen months of data for the 32 HSAs (from December 2008 through January 2010) show a total of 5,998 new clients seeking family planning. Of these, 2,074 were new DMPA (and new family planning) users, 2,881 were continuing users, and 1,043 were either switching to DMPA or restarting it.
- The client surveys show that 25% of clients said that their first DMPA injection from the HSA was also the first time they had ever used family planning.

- For those clients who had previously had a DMPA injection from another source, the main reason for switching to an HSA (over 70%) was for convenience.

Community perceptions and client satisfaction

- Most reports on community perceptions of the program were positive. All of the CBDAs had heard positive things in the community about HSA provision of DMPA. The remark heard most often was that women do not have to travel as far to access the method.

- Over three-fourths of clients interviewed felt that people in the community approve of the program; very few felt that people disapprove, and the rest had mixed opinions. The most positive thing that most people heard about the program was that women can get DMPA services more easily (about 70%).

- About one-fourth of CBDAs said they heard some complaints, as did some clients. The complaint most often heard, according to CBDAs, was about the side effects of DMPA.

- Over 90% of clients reported that they were very satisfied with the counseling and information they received from the HSA during their first visit. Close to 100% reported that they would recommend to a friend that she get a DMPA injection from the HSA who gave them their injection.

The quality and safety of HSA provision of DMPA

- Observations of the injection show that HSAs usually follow correct safety procedures. Out of the 16 steps observed, the HSAs on average performed 13 with a range of 0 to 16. There were four steps that fewer than 70% were observed to perform: allows water on arm to dry before giving the injection (57%), checks vial for content, dose, and expiration date (67%), aspirates to ensure needle is not in a vein (52%), and washes hands with soap and water after the injection (47%).

- On average, HSAs were observed to follow four out of six postinjection procedures with a range of 0 to 6. Three procedures were followed by over 90% of HSAs. Only 37%, however, instructed the client not to massage the injection, 56% encouraged the client to return if there were any problems and 60% recorded information on the tally sheet.

- HSAs confirmed they had some difficulties following safety or infection prevention guidelines (53%). The main challenge was hand washing before and after each injection.

- Nearly all HSAs who were observed established and maintained rapport with the client (99%), showed respect and did not judge the client (99%), and ensured privacy (90%).

- Only 42% of HSAs were observed to use the checklist to rule out pregnancy for new clients, and 61% used the checklist to screen for eligibility for DMPA. Only about one-third believe that if a new client is not menstruating that it is possible to determine that she is not pregnant and give her an injection.

- Client knowledge of DMPA is mixed. Only 80% of clients from the register and 70% from exit interviews knew that DMPA provides protection from pregnancy for three months or about 12 weeks. About 80% knew that they should go to a clinic if they experienced very heavy bleeding, although only 9% said they should go to the clinic for severe headaches. Over 90% knew that DMPA does not protect against STIs including HIV/AIDS. In addition, 19% of the clients from the register reported that they were not told about any side effects; this is in contrast to direct observations, which showed that 94% of new and restarting clients were counseled on side effects.

HSA training, supervision, and supplies

- While most HSAs and supervisors felt prepared to begin offering DMPA at the beginning of the program, over half of the HSAs felt their DMPA training was too short.

- On average, supervisors oversee 3.7 HSAs who provide DMPA. Nearly half meet with the HSAs once every 1 to 2 months. While one supervisor meets every week, the rest meet once every 3 to 4 months or even less frequently. Nearly three-fourths felt they should be directly observing the HSAs more often and cite distance, time constraints, and lack of transportation as obstacles.

- Thirty-five percent of the supervisors reported that keeping the HSAs supplied with DMPA is "somewhat of a problem," and one supervisor said it is a "big problem." Similarly, one-fourth of HSAs reported that they sometimes turn clients away because they do not have DMPA.

- Over one-third of HSAs said they do not have all of the informational and educational materials that they need. Missing materials include the training manual, the checklist for method suitability, and the checklist to rule out pregnancy, posters or flipcharts, and informational pamphlets for clients.

Health Systems

- Since HSAs started providing DMPA, the majority of CBDAs (77%) stated that they now spend less time on their CBDA responsibilities. The main reason why CBDAs felt their workload decreased was because women are switching to DMPA now that it is available in the community (67%). Most supervisors reported that the number of family planning clients at their health center has decreased since HSAs starting providing DMPA.

- In contrast, half of the HSAs said that they spend more time working since they started providing DMPA. The rest said that they spend the same amount of time. About 40% felt that providing DMPA in addition to their other HSA duties has caused some problems with their workload; the main problem cited was the need to travel to far-away clients.

- Linkages among the programs include referrals between CBDAs, HSAs, and health facilities. On average, each CBDA referred 16 clients to HSAs for DMPA in the past six months and referred 12 clients to a clinic. Nearly two-thirds of HSAs reported that they either often or sometimes have clients who want a method other than DMPA, usually oral contraceptives or a long-acting or permanent method. Most (84%) say they have either

very often or sometimes referred a client to another provider for contraceptives; half have referred to a CBDA.

- There is support among the HSAs, CBDAs, and supervisors for the HSA DMPA program. Most HSAs say they would like to continue providing DMPA, and three-fourths also want to provide oral contraceptives. However, most (81%) do not believe that CBDAs should also provide DMPA. While all but one of the CBDAs think HSAs should continue to provide DMPA, the majority of them also think they should be trained to provide DMPA. In contrast, only a little over half think HSAs should also provide oral contraceptives in their communities.

Summary and Recommendations

The three main findings of this evaluation are that HSA provision of DMPA is acceptable, is safe, and expands access to family planning. While the results are mostly positive, they also point to some programmatic aspects that need to be strengthened.

The survey results show that communities and clients find the program acceptable and that clients are satisfied with it. Most supervisors, CBDAs, and HSAs support continued HSA provision of DMPA. While the support for the program is clear, the impact on the HSA workload is an issue that needs to be addressed. In addition, the respective roles of CBDAs and HSAs in future provision of DMPA and oral contraceptives is a potential area of conflict which should be dealt with.

Direct observations show that most HSAs are following most of the procedures for safe provision of the injection. But, while the average number of procedures followed is very good, the range of the number of steps followed shows that not all HSAs are following the safety procedures. This suggests the need for additional supervision visits to identify which HSAs need the most guidance. Finding ways to enable supervisors to make more supervisory visits is another issue for consideration.

While the results show that the HSAs are creating a good counseling environment, the results also suggest that the specific content of the counseling sessions should be strengthened. It is possible that HSAs provided counseling but clients did not remember what they were told. This possibility highlights the need for reinforcing messages at different visits. All clients should be counseled until they understand that DMPA protects against pregnancy for three months. The direct observations only recorded counseling on side effects for new or restarting clients—supervisors should verify that HSAs are also providing or reinforcing messages to continuing clients. Improving the stock of educational materials that many HSAs report missing might also help convey information to clients. Supervisors should also reinforce use of the pregnancy checklist.

Finally, program records and client surveys suggest that HSA provision of DMPA is increasing access to contraceptives in rural Malawi. Not only is the program making it easier for women to get their re-injections, it has also attracted new users to family planning.

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List of Acronyms & Abbreviations

AHS	Adventist Health Services
CBD	Community-Based Distribution
CBDA	Community-Based Distribution Agent
CHAM	Christian Hospital Association of Malawi
CMS	Central Medical Stores
DEHO	District Environmental Health Officer
DFPC	District Family Planning Coordinator
DHO	District Health Officer
DMPA	Depot-Medroxy Progesterone Acetate
DPT	District Pharmacy Technician
FP	Family Planning
HCT	HIV counseling and testing
HMIS	Health Management Information Services
HPI	Health Policy Initiative
HSA	Health Surveillance Assistant
IUD	Intrauterine Device
LMIS	Logistics Management Information System
MSCE	Malawi School Certification of Examinations
MOH	Ministry of Health
MSH	Management Sciences for Health
NGO	Non-Governmental Organization
NSO	National Statistical Office
NHSRC	National Health Sciences Research Committee
PI	Principal Investigator
STI	Sexually transmitted infection
TB	Tuberculosis
USAID	United States Agency for International Development
WHO	World Health Organization

I. INTRODUCTION

Malawi is one of the fastest growing and poorest countries in sub-Saharan Africa (Haub and Kent 2008), and the Malawian government has identified increasing contraceptive prevalence as a priority in the country's Growth and Development Strategy. In 2004, modern contraceptive prevalence among married women was 35% in urban areas, 27% in rural areas and 28% in total (Malawi National Statistical Office [NSO] and ORC Macro 2005). The Malawi Growth and Development Strategy goal is to increase contraceptive prevalence to over 40% by 2011.

Unmet need for contraception remains particularly high in rural areas where more than 80% of Malawians live (Malawi NSO and ORC Macro 2005). To meet the needs of rural women, community-based distribution (CBD) of family planning has been available in Malawi for some time. To date, the CBD program has focused on provision of oral contraceptives and condoms. The majority of CBD services have been provided by volunteer community-based distribution agents (CBDAs) affiliated with non-governmental organizations (NGOs).

Health Surveillance Assistants (HSAs) have also provided family planning services at the community level in a few districts that opted to train them as "Core Family Planning Providers." HSAs are the lowest level cadre in the public health system and provide the majority of primary health care services in Malawi. The Ministry of Health (MOH) target is to employ one HSA for every 1,000 Malawians, for a total of 12,615 HSAs (Public Service International HIV/AIDS Southern Africa Project 2008). By 2008, the number of HSAs increased to nearly 11,000 thanks to a donation from the Global Fund to Fight AIDS, Tuberculosis (TB) and Malaria (Hermann et al. 2009). At present, HSAs receive 10 weeks of basic training (Hermann et al. 2009) and are expected to have a grade 12 level of education (Malawi School Certificate of Examination [MSCE]). All HSAs are engaged in disease surveillance, environmental health promotion, demographic surveillance, vaccination, and growth monitoring. In addition, they are often trained in other specialties ranging from TB treatment to laboratory assistance. While some HSAs have provided family planning, CBDAs have been the main type of family planning service provider at the community level.

A body of evidence from a number of countries and settings shows that community-based provision of depot-medroxy progesterone acetate (DMPA) can lead to increased uptake of family planning (World Health Organization [WHO] 2009). This strategy is likely to succeed in Malawi, where unmet need is high in rural areas and where injectables are the most popular type of contraceptive method identified for current and future use. In the 2004 Malawi Demographic and Health Survey, 14% of women aged 15 to 49 reported currently using injectable contraceptives – over half of women using any method.

Malawi's newly revised Sexual and Reproductive Health and Rights Policy acknowledge the potential to meet the needs of rural women by increasing community-based access to injectables. The policy calls for broadening the range of family planning methods at the community level and states: "Injectable contraceptives shall be available through the community-based delivery system using appropriately trained providers." The cadre of community-based providers of DMPA is not specified by the policy.

In 2007, the Health Policy Initiative (HPI) conducted a feasibility study to assess the need for provision of injectable contraceptives at the community level in Malawi and to gauge the acceptability of using HSAs to provide these services (Richardson et al. 2009). The study documented strong desire for injectable contraceptive services at the community level and reported that rural women prefer injectables because they are long-lasting, require fewer trips to the clinic, are convenient and private, and have few side effects (Richardson et al. 2009). A majority of rural women in the study were in favor of provision of injectable contraceptive services by HSAs. Providers favored training HSAs for the role because they already provide injections as part of their immunization services.

As a first step in increasing community-based access to injectables in Malawi, in March of 2008, the MOH endorsed a pilot program of provision of DMPA by HSAs. A study tour of the Madagascar CBD of DMPA program in June of 2008 informed the collaborative development of guidelines for the Malawi pilot by the MOH Reproductive Health Unit, the United States Agency for International Development (USAID), Futures Group International, and Management Sciences for Health. The pilot program was designed to improve access to DMPA services in rural communities that are located farthest from health centers and in areas where health services are provided by religious groups who do not offer family planning services. In nine pilot districts, HSAs in hard to reach areas or areas where family planning services were not available were selected to participate in a six-day DMPA training program.

Through the pilot program, HSAs have provided DMPA services in the community and in health facilities on certain days of the week or month. CBDAs have continued community-based provision of condoms and oral contraceptives (OCs). Together these two groups provide all government community-based family planning services. Both HSAs and CBDAs are supposed to refer clients to each other or to higher level providers for methods that they themselves do not offer and for further management of any problem they may encounter with clients in the community. Providing DMPA through HSAs represents a significant alteration to the system of reproductive health services in Malawi at both community and health facility levels. It is essential that the pilot program coordinate HSA DMPA services with CBDAs and with clinic providers through a functioning referral system. Moreover, the pilot program involves significant addition to the duties of HSAs. It is therefore critical to understand the effect of the integration of DMPA services into the HSA program, including the impact on HSA workloads.

An independent evaluation of the pilot program was called for after one year of service provision. In early 2009, USAID/Malawi requested assistance from FHI to design and implement the evaluation. Evaluation planning was guided by Holden and Zimmerman's "Evaluation Planning Incorporating Context" model (2009) which stresses the importance of understanding the organizational and political context for an evaluation, identifying the level of evaluation that will meet local needs, and ultimately focusing the evaluation with a list of prioritized questions. The evaluation was designed to address salient issues at the client and provider level as identified by the MOH, USAID, and programmatic stakeholders.

Study Objectives

The goal of the evaluation was to provide information to help the Malawi MOH decide whether the pilot program should be brought to scale and to provide guidance for scale-up, if warranted. Objectives for the evaluation were developed in consultation with the Reproductive Health Unit of the MOH, USAID, and the two organizations that implemented the pilot (Adventist Health Services [AHS] and Management Sciences for Health [MSH]), to address stakeholder concerns.

The specific objectives of the evaluation were:

1. To assess the functioning of HSA DMPA program training, supervision, and supply systems, and their coordination with other community- and facility-based family planning services;

2. To assess aspects of the service delivery environment, including accessibility and the quality of DMPA services provided by HSAs; and,

3. To determine the number of clients obtaining DMPA from HSAs and classify them as new, restarting, continuing users or users who switched to DMPA from another method.

II. STUDY DESIGN

This study was a non-experimental, post-test evaluation. Cross-sectional measurements of evaluation outcomes were obtained from observations of client-provider interactions and from structured interviews with HSAs, CBDAs, HSA supervisors, and HSA DMPA clients. Key informant interviews were conducted at the district, zonal, and central levels. In addition, program records and service statistics were examined to assess the program retrospectively. This evaluation was approved by FHI's Protection of Human Subjects Committee and the Malawi National Health Sciences Research Committee (NHSRC).

1. Study setting

The evaluation focused primarily on four of the nine districts where HSAs were providing family planning. Zomba District was a focus district because of its uniquely high level of program saturation. In Zomba, AHS trained 180 HSAs to provide DMPA, while in most of the other eight districts, MSH trained 40 HSAs. In addition to Zomba, one northern, one central, and one southern MSH district were included to ensure representation of these areas with diverse terrain and social characteristics. Karonga District along Lake Malawi was included as the northern district, Chikwawa District was chosen in the south, and Kasungu District in the central region. The selected districts had different durations of program implementation. For example, HSAs began providing DMPA in Karonga in December of 2008, in Chikwawa in January of 2009, and in Zomba and Kasungu in May of 2009. Limited data collection took place in the other five pilot districts of Balaka, Mangochi, Nkhotakota, Phalombe, and Salima.

2. Study population

The target population for this study were individuals who could provide information to help understand the functioning, quality, and usefulness of the HSA program for providing family planning. Surveys were conducted with HSA clients, who were between the ages of 16 (the age of majority in Malawi, i.e. the age at which a child is considered an adult) and 49, HSAs who have been providing DMPA, HSA supervisors, and CBDAs. In addition, key informant interviews were conducted with stakeholders in each of the nine pilot districts as well as stakeholders at the zonal and central level.

3. Study methods

This evaluation was composed of four main components as described below:

Structured interviews were conducted with HSAs, CBDAs, and HSA supervisors to understand the functioning and needs of the HSAs and to understand the referral process between HSAs and CBDAs. HSAs and CBDAs selected to be in the evaluation were informed by their supervisors. Client interviews were designed to examine their experiences with HSAs, previous experiences with obtaining family planning services in clinics, satisfaction with the HSAs, and service preferences. Clients were recruited in two ways, from HSA registers and during HSA visits (see observation section below). Anyone asked to participate in an interview was administered informed consent and told that their participation was voluntary.

Observations of client-provider interactions were conducted to assess HSA service delivery. A structured checklist was developed to guide observations of HSA counseling and injection techniques and adherence to safety procedures. Clients selected for observation were invited to participate in the study on a voluntary basis by a study team member and were asked for their informed consent. After their DMPA session with an HSA was observed, clients were asked to participate in a brief exit interview (see above).

Key informant interviews were conducted with district, zonal, and central level officials and included: District Health Officers (DHOs), District Pharmacy Technicians (DPTs), District Family Planning Coordinators (DFPCs), District Environmental Health Officers (DEHOs), Health Management Information Systems (HMIS) Officers, MSH District Officers, a representative from Central Medical Stores (CMS), and other stakeholders. Informants at the district level were accessed through the DHO and MSH district coordinator who helped guide the investigator in how best to schedule the interviews at the District Health Office or District Hospital. At the zonal and central level, interviews were scheduled by the in-country Principal Investigator.

Interviews were focused on the individuals' particular areas of expertise and used to elicit responses about program successes, problems and suggested solutions, and discussion of subject areas that might be of importance in the evaluation but that were not already incorporated into data collection instruments. Semi-structured guides were developed for these interviews.

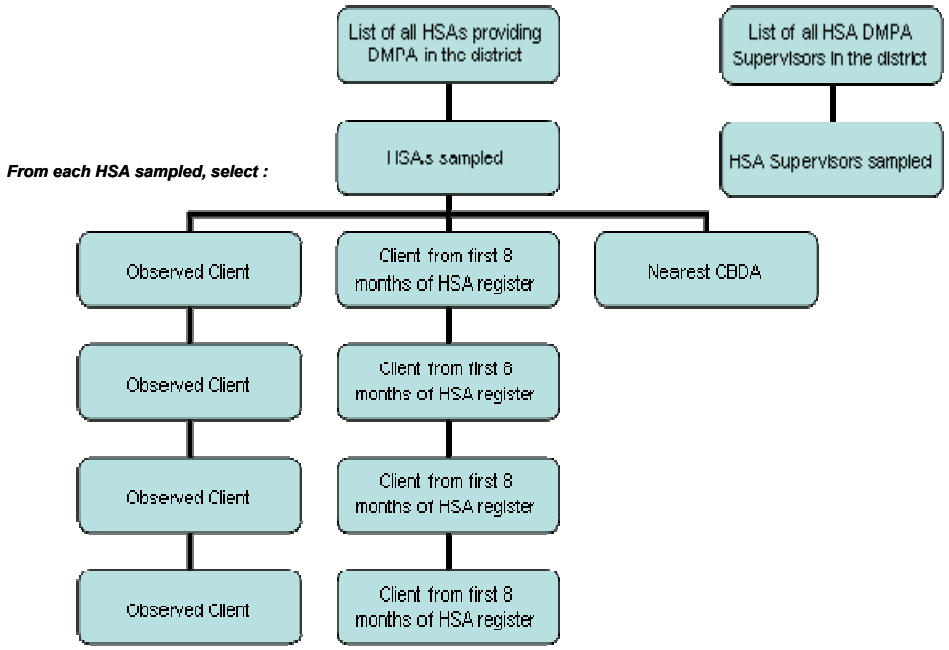
Program Records and Service Statistics: A review of program records and service statistics was planned to provide a retrospective review of program function and service utilization. In the

four evaluation focus districts, the records of every HSA interviewed were reviewed, and information was collected on the number of clients new to the HSA for family planning, the number of new DMPA users, and the numbers of clients who were continuing, restarting or switching to DMPA. We planned to also obtain the monthly DMPA worksheets that HSAs turn in to their supervisors, but due to time constraints, these were not collected.

Furthermore, in all nine pilot districts, service statistics or Logistics Management Information System (LMIS) data were collected at the district and health center level. The collection of this data proved to be challenging in that it involved the compilation of statistics from multiple sources. The quality of the data were variable, not always available and not always in a consistent format. We realized that to conduct this activity and obtain meaningful results would far exceed the time and budget available for this evaluation and therefore the data from this activity was dropped.

Sampling
The sampling strategy for data collection for each selected HSA is summarized in Figure 1.

Figure 1: Sampling Strategy



A stratified two-stage random sample was implemented for observations of provider-client interactions and interviews with clients seen within the first eight months of the pilot. The sample was stratified by district and a sample of HSAs from all HSAs providing DMPA in the district were selected randomly in the first stage. For the 2nd stage of the sample selection, every

other client waiting to receive DMPA services from selected HSAs during a pre-identified 3-hour high volume service period was selected for direct observation.
For clients who received DMPA services in the first eight months of the program, the sampling frame for the 2nd stage of the cluster sample was a list of every client seen in the relevant time period. This list of client names was obtained from HSA registers. A random sample of 10 clients was selected from each HSA. Clients were invited to participate in the exact order in which they were selected until four agreed to take part. The CBDA providing services nearest to each selected HSA was chosen for the study. If the nearest CBDA was not available, participation of the second or third nearest CBDA was sought.

Sample sizes were determined based on available resources and the need to sample clients from as many different HSAs as possible, making the client sample as representative as possible. The size of each sample frame and sample is presented in Table 1, below.

4. Data collection

Four study teams were responsible for structured interviews, observations, and data collection from program records at the sub-district level in the four focus districts. The local PI was responsible for key informant interviews at the district, zonal, and central levels and the US PI and a local statistician were responsible for collecting service statistics.

Research Assistant training for the four teams took place at Stansfield Motors Cottage in Senga Bay, Salima District from February 15th through February 19th, 2010. A total of 16 Research Assistants were trained. Four of the Research Assistants were team supervisors, and each team was composed of one supervisor and three data collectors. The Research Assistants were nurses on leave from districts all over Malawi. Training focused on research ethics, the background and purpose for the evaluation, careful review of the translated study instruments to identify any ambiguities, and in-depth practice of multiple study instruments. Pre-testing of the Direct Observation form and survey questionnaires (for the structured interviews) took place in Salima district during the training. After the pre-test, meetings were held with each study team and as a larger group to discuss any difficulties encountered with the study instruments or procedures. Revisions were made and final versions of the questionnaires were printed in Tumbuku and Chichewa. A letter of approval from the NHSRC was provided on February 22, and the data collection teams departed for the field a day later.

Data collection by the four teams was completed on March 9, 2010. Interviews were conducted with 368 clients, 34 CBDAs, 32 HSAs, and 20 HSA supervisors. In addition, 236 observations were made at either the homes of the HSAs or at various health facilities. The data from the HSA program records were collected by the interview team supervisors during this time.

Key Informant interviews and the collection of service statistic data were completed by March 24, 2010. A total of 43 key informant interviews were conducted in Zomba, Chikwawa, Kasungu, Karonga, Balaka, Nkhotakota, Salima, Phalombe, Mangochi, and Lilongwe. Not all of the planned interviews were conducted due to staff unavailability.

Table 1 summarizes the sample size targeted for the evaluation and the actual numbers obtained. The table shows that for the surveys, program records and observations, the evaluation met or exceeded its goals. As previously noted we were not able to conduct all of the planned key informant interviews or the supervisor worksheets.

Table 1: Summary of Targeted and Actual Sample Sizes

Method	Targeted Sample	Number Targeted	Actual Numbers
Survey	Clients-register	96-128	140
	Clients-exit interview	96-160	228
	HSAs	32	32
	HSA supervisors	20	20
	CBDAs	32	34
Observations	Clients	96-160	236
Key informants interviews	Various stakeholders	53	43
Program records	HSA registers	32	32
	Supervisor worksheets	130	0
Service statistics	District LMIS data	9 districts	9 districts

Outcome measures for clients allow for statistical precision of at least 10.5 percentage points, based on a minimum of 96 clients interviewed in 30 clusters. For example, for an outcome of 50%, the 95% CI would be between 39.5% and 60.5%. These calculations adjust for cluster effects and assume an intra-class correlation of 5%. Precision is higher for proportions that are further from 50% (e.g., 15% or 90%). Precision is much lower for other groups that have a smaller sample size.

5. Data entry and analysis

Quantitative data were entered using EpiInfo version 6.04d DOS. Analysis was conducted using SAS version 9.2. Key informant interviews were recorded using detailed field notes. Shortly after the interview, the in-country PI typed the field notes in English, paraphrasing the content of each key informant interview. The data was entered using ATLAS.ti version 4.2, and this program was also used to code the transcripts. The results were summarized in tables and figures according to themes.

Descriptive statistics were generated from the survey data for each indicator in the form of proportions, averages, and total numbers. Results from different districts were presented in aggregate form. Client measures used appropriate weights to account for unequal sampling probabilities used between the districts.

Open-ended questions were used during both structured and semi-structured interviews. Short answer responses that can easily be categorized (e.g., description of problems with training) were tallied and categorized with the most frequent responses identified and counted. Semi-structured interviews were summarized and responses organized according to topic areas of inquiry.

Analysis was conducted to meet the objectives of the evaluation. Indicators of particular interest included:

- Quality of HSA service delivery including counseling
- HSA and supervisor DMPA knowledge and skills
- Safety of HSA DMPA provision
- Impact on workload
- Referrals to and from the CBDA program and clinics
- Client satisfaction with HSAs
- Client service preferences
- Number of HSA FP clients
- Program acceptability

Program record data were also collected to get a crude estimate of DMPA discontinuation after the first injection. For each HSA in the study sample, three months of data from 2009 were collected and the number of new DMPA users for those months recorded. The records were then reviewed to see if each client came back for a second injection (and whether they came back, early, on time, or late) or if she did not return to the HSA for a second injection. The data from one HSA were not used because the months collected were from late 2009 to early 2010, and most of the clients were not due for their next injection at the time the data were collected.

6. Characteristics of study participants

Clients interviewed both from the registers and the exit interviews were on average 27 or 28 years old and had about three children (Table 2). Over 60% wanted to have another baby in the future. Clients recruited from the register were far more likely to have just received a DMPA injection for the first time and for this injection to be the first family planning method ever used compared to the clients from exit interviews. For both groups, the majority of clients reported that their partners supported their use of DMPA; few reported that they were using it without their partner's support.

The HSAs were predominantly male with a mean age of 34 years old. They were well educated and nearly all have completed secondary school. On average, they have been working 8.5 years as an HSA with a range from 1 to 40 years. The majority of HSA supervisors were female (60%), and most are nurses or midwives. The supervisors have many years of work experience with an average of 12 years of supervisory experience and a range from 3 to 36 years.

There were slightly more female CBDAs than males and the mean age was 34 years old (with a range from 20 to 52 years). Nearly three-fourths have a secondary level education while most of the remaining agents have a primary school education. On average, they have worked as CBDAs for 4.5 years (with a range from less than one year to 23 years).

Table 2: Basic Characteristics of Study Participants

Characteristic	% or Average (range)
Clients from register (n=140) [1,2]	
Average age in years (range)	28.0 (16.0- 46.0)
Average number of children (range)	3.3 (1.0-8.0)
Want another baby in future	61%
Clients exit interviews (n=228) [1,2]	
Average age in years (range)	26.7 (17.0- 45.0)
Average number of children (range)	3.2 (1.0-9.0)
Want another baby in future	65%
HSAs (n=32)[2]	
Gender	
Male	69%
Female	31%
Average age in years (range)	34 (23.0- 60.0)
Highest level of schooling completed	
Primary school	6%
Secondary school	94%
Average number of years as HSA (range)	8.5 (1.2 – 40)
HSA Supervisor (n=20)[2]	
Gender	
Male	40%
Female	60%
Average years as HSA supervisor (range)	12 (3.0- 35.8)
CBDAs (n=34) [2]	
Gender	
Male	47%
Female	53%
Average age in years (range)	33.8 (20.0- 52.0)
Highest level of schooling completed	
Primary school	24%
Secondary school	73%
Other	3%
Average number years as CBDA (range)	4.5 (0.5- 23.0)

1 Weighted percentages and means are presented for client data

2 Missing responses vary across questions

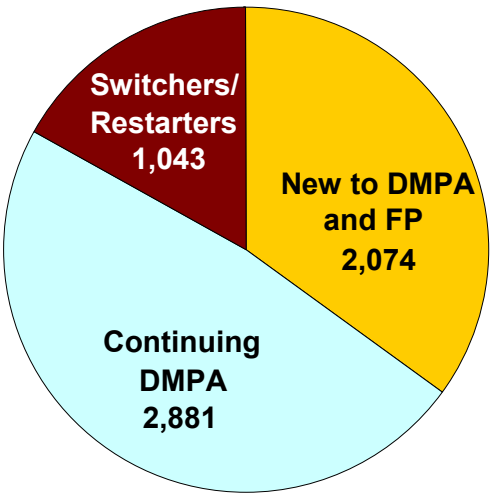
III. RESULTS

The results are divided into five sections. The first section looks at the scope of the HSA DMPA provision in terms of the number of new acceptors of DMPA and of family planning and the number of clients who are switching to HSAs from other sources. It also examines the issue of women's access to family planning in these rural communities. The next section explores community perceptions of the pilot program and client satisfaction. The results then turn to the specifics of HSA service provision of DMPA. The third section examines issues of safety and quality of services with a focus on the safe provision of the DMPA injection and the quality of counseling provided. The following section looks at the HSAs' and supervisors' perspectives on the training they received, the extent of supervision that is provided to HSAs, and the issue of supplies. The final section examines the interrelationship between HSAs, CBDAs, and health facilities in terms of workload, referrals, and perspectives on the DMPA pilot program.

1. Scope of program

The results suggest that the program has been successful in recruiting new users to family planning and also in providing more convenient services to women from the pilot districts who were already using DMPA. Program records reveal the scope of the DMPA program from the sample of 32 HSAs. Fourteen months of data (from December 2008 to January 2010) were collected from their program records, though each HSA contributed a varying number of months of data. During this time for the months recorded, they served 5,998 new clients for family planning (Figure 2). Of these 2,074 were new DMPA users (and also new family planning users), 2,881 were continuing DMPA users and 1,043 were clients who were either switching to DMPA or restarting it. On a per month basis, each HSA had an average of 21 new family planning clients, eight of whom were new to DMPA (and family planning), 10 who were continuing users, and the rest of whom were switching or restarting.

Figure 2: Number of New Family Planning Clients by Type of User*



* Program record data for 32 HSAs 12/08-1/10

For about half of the register clients and just 7% of exit interview clients, the first time they received DMPA from an HSA was also the first time they had ever used a family planning method (Table 3). Many key informants believe that the introduction of DMPA in the communities has motivated those who were unable to access modern contraceptives due to costs (financial as well as distance and waiting time), the effect being an increase in the demand for the service. They specifically attributed this increase in demand to the HSAs. In the words of an official from Karonga: "*Services were at low rate before the pilot started because health centers are far from where people live. Additionally, family planning is not like a disease that people need to seek attention to get well i.e. do not value it as an essential service. With sensitization the communities responded well and started taking modern family planning services.*"

Table 3: Client Family Planning Use Prior to First HSA Visit

	Register clients (n=140)[1] %[2]	Exit interviews (n=228)[1] %[2]
Never used FP before	50	7
Received DMPA before	33	89
Received DMPA 3 months ago from different provider	37	87
Main reason switched (for those who switched):	(n=49)	(n=187)
Convenience	78	70
Preferred location		
Under 5 clinic/outreach event	11	16
HSA health post	21	29
HSA home	61	37

[1] Missing responses vary across questions
[2] Client data has weighted percentages

Despite the apparent success of the program, some key informants pointed out that modern family planning use is still hindered by the lack of male acceptance and that gaining male acceptance is a challenge. One key informant in Chikwawa, however, pointed out that the pilot program was making some headway in this area because men were being included when providers met with couples in their homes.

About one-third of register clients and most of the exit interview clients had used DMPA before; most of these women had received DMPA three months prior to the first HSA injection (Table 3). The main reason for switching was that traveling to the HSA is more convenient. The three locations where clients most prefer to get their DMPA services from the HSA are the HSA's home, the HSA's health post, and an under 5 clinic or other community health outreach event. Client preferences are driven primarily by convenience and privacy (data not shown).

HSAs reported that they provide DMPA at a variety of locations, and where they provide it matches the client preferences indicated above. Table 4 shows the three main sites where they provide DMPA; in the last month, half or more provided DMPA at their own home, at a health post, at an under 5 clinic, and at a health center. At these sites, on average, in the past month HSAs served 9 clients in their own homes, 15 at an under 5 clinic, and 12 at a health center or other health facility. For the most part, HSAs are trying to meet clients' needs in providing DMPA. On average they provide DMPA services 5 days a week (range of 1 to 7) and 59% say that the client can see them any time they want; the rest say that they keep certain hours. Over three-fourths say most injections they provide are in the community; 16% provide most in a clinic or health facility.

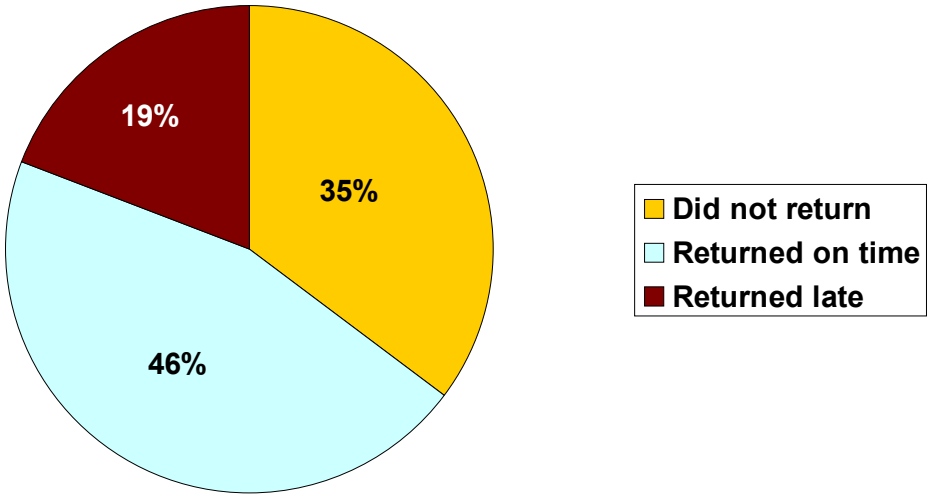
Table 4: Access to HSA DMPA Provision According to HSAs

	HSAs (n=32)[1]
Main sites where provided DMPA in last month[2]	
Home	59%
Health post	50%
Under 5 clinic	75%
Health center	22%
Avg. (range) clients served per location in past month	
Home	9.1 (0-36)
Under 5 clinic	14.9 (0-86)
Health center	12.2 (0-90)
Days and hours of service	
Avg. (range) days per week of service	5 (1-7)
Hours providing DMPA	
Keep hours	41%
Any time client wants	59%
Where provide most DMPA injections	
Clinic or health facility	16%
In the community	78%
Half clinic & half community	6%

[1] Missing responses vary across questions
[2] More than one response possible

While nearly all of the clients (99%) reported that they intend to get another DMPA injection in three months from an HSA, the program record data on continuation for a second injection paint a different picture. Figure 3 shows that 35% of new clients did not return for a second injection. Forty-six percent of the new clients came back either early, on time, or within the grace period for their next reinjection. Nearly one-fifth came back later (i.e. more than 16 weeks after their initial injection). Many reasons were recorded by the HSAs to explain what appears to be a high rate of discontinuation. In some cases clients probably did in fact receive a reinjection but some clients went to health facilities (and therefore, the reinjection was not in the HSA records), and also some reinjections were not accurately noted in the HSA records. In other cases, clients may have wanted reinjections but were unable to obtain them because of stock outs, the HSA was not available (e.g. for holiday or was at training), transport problems particularly during the rainy season so that women could not come to the health post, and poor recording of appointment dates. Finally, some women did not want a second injection.

Figure 3: Client Continuation at 2nd Injection According to Program Record Data



The challenge of transport was emphasized by some key informants. Distance, hills, and impassable roads and bridges during the rainy season make transport difficult or even unsafe. One key informant described the challenges as follows: "*Geographical as the place is hilly/flat, long distance and floods and many roads are not passable, rivers are full or the bridges have broken down and women use basin like structures as boats to cross to the nearest facility, and these are not safe.*"

2. Community perceptions and client satisfaction

For the pilot program to be successful, community members must be aware of it and also must view HSA provision of DMPA as appropriate for their communities. In addition, it is important to see if the clients who make use of the program have positive experiences since word of their impressions will undoubtedly spread throughout the communities.

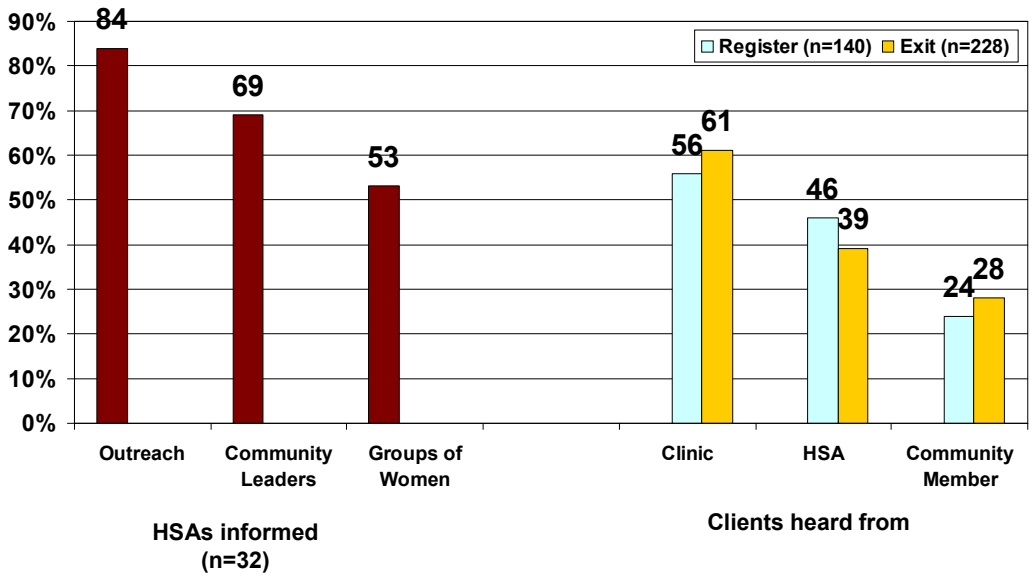
Community perceptions

All the HSAs believe that most women know they can get DMPA from them. The majority felt it has been easy to gain community confidence in their ability to provide DMPA (72%); just over one-fourth felt it was somewhat difficult gaining their confidence (28%).

Word about the program came from many sources. Figure 4 shows the main ways HSAs spread the word about the pilot program and the main sources from where the clients heard about the program. To inform the community HSAs primarily discussed DMPA with women during

outreach activities like the under 5 clinics and also told community leaders and groups of women about the program. Clients in turn were most likely to have heard about it from someone at a clinic or health facility, from the HSAs themselves, or from someone in their communities. Very few clients had heard about it from a CBDA.

Figure 4: Sources of Information about Pilot Program According to HSAs and Clients



Most of the groups interviewed feel that the community view of the program is positive. The majority of the clients feel that people in the community approve of the program; very few feel that people disapprove (Table 5). By far the most positive thing heard by most people is that women can get DMPA services more easily. In addition, about one-fourth reported that they've heard that people like the quality of DMPA services provided by the HSAs. Nonetheless, some clients have heard complaints about the program. The complaint heard most often is that clients do not like the side effects associated with DMPA. Other complaints heard (by only one or two clients) are that women report that the HSA or DMPA is not available, fertility doesn't return after stopping DMPA use, male partners do not allow women to use DMPA, DMPA makes you develop cancer, they don't like that DMPA is administered in the buttocks, and the HSAs are not friendly.

Table 5: Community Perceptions of Pilot Program According to Clients

	Register clients (n=140)[1] %[2]	Exit interviews (n=228)[1] %[2]
Community view of program		
Most approve	78	75
Most disapprove	4	2
Half approve & half disapprove	18	20
Unsure	<1	3
Main positive things heard		
Can get DMPA services more easily	68	73
Like the quality of DMPA services provided by HSAs	28	24
Heard Complaints	14	8
Main complaint heard	(n=16)	(n=19)
Doesn't like side effects	55	62

[1] Missing responses vary across questions
[2] Client data has weighted percentages

The health care providers have also mostly heard encouraging talk of the program. Most of the CBDAs have heard positive things in the community; the main positive thing they have heard is that women do not have to travel far to access DMPA (65%). About one-fourth of CBDAs (27%) have also heard some complaints but, similar to client reports, the main complaint is about the side effects of DMPA. Only one CBDA heard a complaint about the HSAs; the complaint was that the HSAs treat clients poorly.

Supervisors also believe that HSA provision of DMPA is acceptable and beneficial to their communities. The main benefits cited include that women in hard to reach areas have access (80%), it increases contraceptive prevalence in remote areas (60%), and it helps decrease the health center workload (50%).

Finally, key informants agree that DMPA is well accepted by communities because of several factors including reduced walking distance for clients. In addition, the fact that no complaints have reached the authorities of the facilities reinforces their belief that the community accepts the program.

Client satisfaction

Not only does community acceptance of the program appear to be positive, client satisfaction with DMPA and HSA services also appears to be high (Table 6). Most clients reported that they were very much satisfied with the counseling and information they received from the HSA during the first visit. Nearly all clients reported that they would recommend to a friend that she get a DMPA injection from the HSA who gave them their injection. The main reasons they would recommend DMPA from an HSA are: HSAs make service more accessible, the HSA is a

good/kind provider of DMPA, the HSA keeps information confidential, the method or provider is easily available, and that DMPA/ family planning is beneficial and prevents unwanted pregnancy.

Table 6: Client Satisfaction with the Pilot Program

	Register clients (n=140)[1] %[2]	Exit interviews (n=228)[1] %[2]
Satisfaction with counseling & information received at first visit		
Very much satisfied	90	95
Somewhat satisfied	7	5
Not at all satisfied	4	<1
Would recommend DMPA from her HSA to a friend	97	98

[1] Missing responses vary across questions
[2] Client data has weighted percentages

There were a few clients who said they were not at all satisfied with their visit, and a small number said they would not recommend that a friend get the injection from their HSA. The reasons why they wouldn't recommend that a friend get a DMPA injection from their HSA (though only 1 to 3 clients mentioned these reasons) were that a woman has a right to choose DMPA and providers, would advise her to use the hospital for DMPA and that the male partner needs to be advised.

3. Quality and safety of HSA provision of DMPA

A key purpose of the pilot DMPA program is to assess whether HSAs could provide safe and high quality services. Safety of providing the injection was measured by assessing adherence to guidelines that formed the basis of the training. The quality of the visit was established primarily through looking at the counseling environment, specific knowledge and counseling about DMPA, scheduling follow-up visits, and reinjection knowledge and perceptions on HSA skills.

Safety procedures

Safety was assessed primarily through the direct observations though this data was supplemented by relevant survey results. The majority of visits observed were return or follow up visits (85%) with the remaining being a first time visit for a client to receive DMPA (15%). Most of the observations were conducted at the HSAs health post (60%); nearly one-fourth (23%) were at the HSAs home, and the remainder were at other types of health facilities or other sites.

Observations of the injection itself show that for the most part HSAs are following the correct safety procedures (Table 7). Out of the 16 steps observed, the HSAs on average performed 13 with a range of 0 to 16. Over 90% performed half of the steps. Most (over 90%) rolled the bottle between the palms or shook gently, opened sterile package for syringe/needle, correctly filled syringe with contents of the bottle, correctly inserted the needle into the deltoid muscle,

injected the entire contents of the syringe, did not massage the injection site, did not recap the needle to avoid a needle prick injury, and discarded the used syringe and needle into the sharps container. There were four steps that fewer than 70% were observed to perform. These included: allows water on arm to dry before giving the injection, checks vial for content, dose and expiration date, aspirates to ensure needle is not in a vein, and washes hands with soap and water after the injection.

Table 7: Direct Observations of Injection Procedures

	Direct observations (n=235)[1] %
Washes hands well with soap and water	85
Dries hands with clean towel or let them air dry	75
Checks vial for content, dose and expiration date	67
Rolls bottle between palms or shakes gently	96
Opens sterile package for syringe/needle (attaches needle if needed)	100
Correctly fills syringe with contents of the bottle	99
Expels air from syringe without pushing any of the DMPA out	82
Cleans injection site with water or alcohol	80
Allows water on arm to dry before giving the injection	57
Inserts needle deep into the deltoid muscle	99
Aspirates to ensure needle is not in a vein	52
Injects the entire contents of the syringe	99
Does not massage injection site	91
Does not recap needle to avoid needle prick injury to self	98
Discards the used syringe and needle into the sharps container	98
Washes hands with soap and water	47
Avg. number correct (range)	13.1 (0.0 to 16.0)

[1] Missing responses varies across items.

Post-injection procedures were not followed to the same degree of consistency as the injection procedures (Table 8). On average, HSAs were observed to follow 4 out of 6 procedures with a range of 0 to 6. Three of the procedures were followed in over 90% of the observations: instructed client to return for reinjection in three months, recorded information on health passport, and recorded information on register. The other three, however, were observed in far fewer observations. These included instructing the client not to massage the injection, encouraging the client to return if there were any problems, and recording information on the tally sheet.

Table 8: Direct Observations of Post-Injection Procedures

	Direct observations (n=235)[1] %
Instructs clients not to massage the site	37
Instructs client to return for reinjection in 3 months	97
Encourages clients to return if any problems, concerns, warning signs	56
Records information on tally sheet	60
Records information on health passport	97
Records information on register	99
Avg. number correct (range)	4.4 (0.0- 6.0)

[1] Missing responses varies across items.

In interviews with HSAs, 53% acknowledged that they have had trouble adhering to safety or injection prevention guidelines; the main one being hand washing before and after each injection cited by 19%. A few (2-3) HSAs mentioned that disposing of needles and syringes in sharps container or bringing sharps container to the health facility when ¾ done as problematic. Seven mentioned a lack of infection prevention supplies, e.g., gloves, cotton wool, buckets, and soap for hand washing. Despite these noted weaknesses, few clients (5%) reported that they had a problem at the injection site after the injection.

Counseling and DMPA knowledge

Overall the HSAs are establishing a courteous environment for their clients (Table 9). Nearly all of the HSAs who were observed established and maintained rapport with the client, showed respect and did not judge the client, ensured privacy, and asked about the reason for the visit. Client interviews agree that the counseling environment is good. The majority of clients reported that they felt the HSA spoke to them in a friendly way though some felt the HSA was unfriendly. Nearly all trusted the HSA to protect their private information.

Table 9: Counseling Environment According to Clients and Direct Observations of HSAs

		Register clients (n=140)[1] %[2]	Exit clients (n=228)[1] %[2]	Direct obs. (n=236)[1] %
Clients	At 1st injection, HSA			
	Talked in a friendly way	86	92	
	Talked in an unfriendly way	12	7	
	Did not talk much	2	1	
Direct obs.	Established & maintained rapport	NA	NA	99
Clients	Trust HSA to protect privacy	97	98	
	Do not trust	2	2	
	Unsure	1	<1	
Direct obs.	Ensures privacy	NA	NA	90
Direct obs.	Shows respect & does not judge clients	NA	NA	99

[1] Missing responses vary across questions
[2] Client data has weighted percentages

Counseling of DMPA clients is moderately good (Table 10). During direct observations with new clients, most HSAs counseled on the side effects from DMPA and three-fourths counseled about all family planning methods. Only 61% used the checklist to screen clients for DMPA eligibility and less than half asked about the client's reproductive goals. For returning clients just over two-thirds of HSAs asked the client if they were satisfied with DMPA, and most asked if she had encountered any side effects.

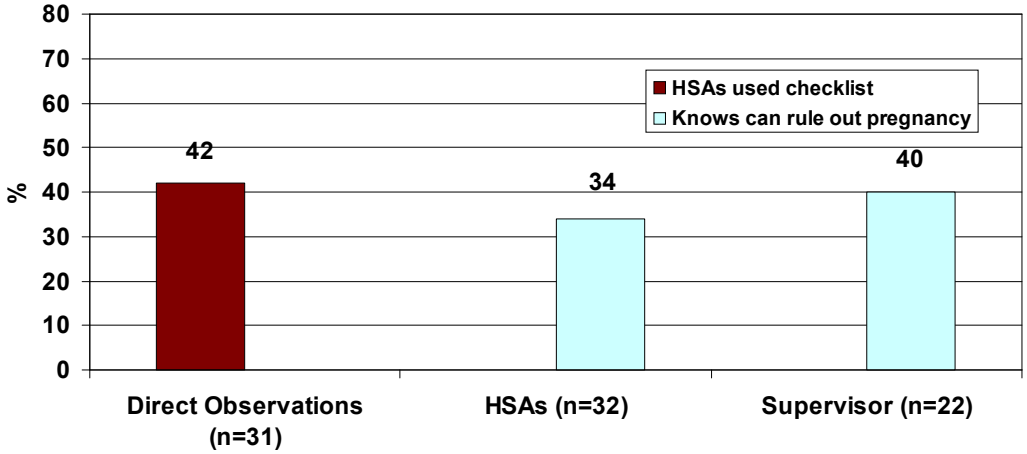
Table 10: Direct Observations of Family Planning and DMPA Counseling for New and Returning Clients

	Direct observations with new clients (n=33)[1] %
Counseled on all FP methods	79
Counseled on DMPA side effects	94
Used checklist to screen for DMPA eligibility	61
Asked about reproductive goals	46
	Direct observations with returning clients (n=189)[1] %
Asked if client is satisfied with DMPA	69
Asked if client experienced any side effects	88

[1] Missing responses vary across questions

The observations suggest that HSAs may not be appropriately managing new clients to ensure that they are fully protected from pregnancy upon completion of the visit. Less than half used the checklist to rule out pregnancy (Figure 5). Interviews with HSAs confirm that most do not know that pregnancy can be ruled out for a new client so that they can give a DMPA injection. Only about one-third believe that if a new client is not menstruating it is possible to determine that she is not pregnant and give her DMPA. Of the 11 HSAs who say pregnancy can be ruled out, the main ways they report they can do this is if the client was not sexually active since last period or delivery (cited by 4 of 11), by use of pregnancy tests (3 of 11), if they are less than 4 weeks post-partum (3 of 11), if they are breastfeeding and the baby is less than 6 months and has not had menses yet since birth (5 of 11).

Figure 5: Use of Pregnancy Checklist and Knowledge of Ruling Out Pregnancy According to Direct Observations, HSAs, and Supervisors



Similarly, the majority of supervisors are not aware that pregnancy can be ruled out and for those that are aware, pregnancy tests are the most common way reported to do this. A few mentioned that they could rule it out if a client had not been sexually active or was breastfeeding and the baby was less than six months and the woman had not yet had her menses return.

HSAs knowledge and counseling on DMPA basics is mixed (Table 11). All of them know that DMPA protects against pregnancy for approximately three months. They were most likely to say that a women using DMPA should go to a health center, nurse, or doctor if they experienced constant, very heavy bleeding, severe headache, severe abdominal pain, and chest pain. The side effects HSAs report they are most likely to tell their clients about are irregular bleeding, heavy bleeding, spotting, amenorrhea, migraine headaches, weight gain, and nausea. In the direct observations it was noted that only one-third explained that DMPA does not protect about sexually transmitted infections (STIs) including HIV/AIDS.

Table 11: HSA and Client Knowledge of DMPA

	HSAs (n=32)[1] %	Register clients (n=140)[1] %[2]	Exit clients (n=228)[1] %[2]
DMPA protects for 3 months	100	82	70
Warning signs			
Heavy bleeding	97	85	82
Severe headache	53	7	9
Chest pain	6	6	1
HSAs counsel on/ side effects clients know			
Irregular bleeding	78	27	24
Heavy bleeding	91	65	71
Spotting	66	14	16
Amenorrhea	71	33	30
Migraine/headaches	28	7	8
Weight gain	22	3	2
Nausea	23	7	6
Client not told anything	NA	19	NA

	Direct obs. (n=226)[1] %	Register clients (n=140)[1] %	Exit clients (n=229)[1] %
DMPA does not protect against STIs including HIV/AIDS (HSAs observed/ clients know)	37	94	90

[1] Missing responses vary across questions
[2] Client data has weighted percentages

Table 11 also shows client knowledge as it compares to HSA knowledge and what HSAs say they are telling clients. Of some concern is that not all of the clients knew that DMPA provides protection from pregnancy for three months or about 12 weeks. Over 80% knew that they should go to a clinic if they experienced very heavy bleeding though few reported they should return for other reasons such as severe headaches or chest pains. Over 90% correctly reported that DMPA does not provide protection against STIs including HIV/AIDS. Finally while many reported there were various side effects that could happen as a result of using DMPA, e.g. bleeding irregularities, nearly 20% of clients from the register reported that they weren't told anything. This was not recorded for clients from exit interviews. The main side effects clients reported were heavy bleeding, irregular bleeding, and amenorrhea.

Next appointments and reinjections

Making sure clients know when to return for their next reinjection and knowledge of what to do if a client is late for her next appointment is critical for helping clients have continuous protection from pregnancy. Most of the HSAs reported that they tell their clients to return in three months and that they write down the next appointment date (Table 12). Most tell the clients where they should return; usually to come back to the same location. HSAs also tell clients that they can find them in the community (at their home, health post, or outreach clinic), or at a health facility, or that they'll come to the client's home. Three-fourths say that clients very often come to them for their next reinjection without any reminder.

Table 12: HSA Communications About Next Injections/Appointments

	HSAs (n=32)[1]
Tell clients to return in 3 months	88
Write down appointment date	84
Tell clients where to return[2]	
Same location	75
Where in community	56
Health facility	38
Client home	16
How often clients return on time without reminder	
Very often	75
Sometimes	16
Never/ rarely	9

[1] Missing responses vary across questions

[2] More than one response possible

Clients confirm that they received information to return in three months for the next appointment, were told where to meet the HSA for that appointment, were given something to help them remember the appointment date, and were told about the implications of coming late to the appointment (Table 13). For those given something to help them remember the appointment date, most reported that the HSA wrote the date of the next injection in their health passport/ profile book. For those told what would happen if they came late for next appointment, nearly all were told that the consequence is that they can become pregnant.

Table 13: Client Information About Next Injections/Appointments

	Register clients (n=140)[1] %[2]	Exit interviews (n=228)[1] %[2]
Received information at 1st injection about next appointment		
Return in 3 months	88	81
Return on a specific date	6	14
Other/unsure	6	4
Given something to remember appointment	91	95
What did HSA give you to help you remember	(n=106)	(n=201)
Wrote date in health passport/profile book	92	88
Told client date	5	11
Wrote date on piece of paper	3	<1
Was informed what would happen if came late	84	77
HSA said where to go for next injection	89	92
Come to…[3]	(n=129)[1]	(n=192)[1]
HSA home	67	51
HSA health post	31	36
Under 5 or other outreach event	28	26
Health center	13	19
Client home	2	7
Other	3	1

[1] Missing responses vary across questions
[2] Client data has weighted percentages
[3] Multiple responses possible

Most HSAs are aware of the reinjection guidelines if a woman returns for her reinjection late but within the grace period (i.e. up to four weeks late).* Most (84%) said they would give a reinjection if a women returns 3 months and 10 days after her previous injection. However, HSAs are not as aware of procedures to manage a client who returns after the grace period. In these cases it would be best to rule out pregnancy and not send a client away without any protection from pregnancy. When asked what they would do if a client returned 4 months and 5 days after her previous injection, 22% said they would give reinjection. Only five would try to rule out pregnancy using checklist. The majority (20 HSAs) said they would refer client to health center.

Supervisor knowledge on management of late clients was poorer than that of HSAs. When asked how to manage returning DMPA clients who returned late for their reinjection, only half said they would give a reinjection if the woman is 10 days late even though this falls within the one

*While the grace period was not mentioned in the training, it was added to policy guidelines in late 2009.

month grace period. Nearly all supervisors (90%) said they would not give a reinjection if the woman was more than one month late; all the supervisors who wouldn't give one said they would refer her to the health center. Four also reported that they would administer a pregnancy test. Only two reported they would try to rule out pregnancy by using the pregnancy checklist.

Perceptions of HSA skills

When asked about their perceptions of the HSA skills and knowledge, most supervisors felt that all of the HSAs they supervise had all or most of the necessary skills needed to provide DMPA (Table 14). The areas where supervisors felt that at least some were not competent agree with many of the findings mentioned in this section and include using the pregnancy checklist to rule out pregnancy, counseling on DMPA side effects and filling the single use syringe. In addition, about one-third felt that their HSAs do not follow safety and infection prevention guidelines all of the time. The areas of difficulty that they identified most often included bringing the sharps container to the facility when it is ¾ full, hand washing before and after injection, cleaning the clients injection site, and disposing of needles and syringes.

Table 14: HSA Supervisors' Perceptions of HSA Skills

Of the HSAs you supervise, how many are competent to…	**Supervisors (n=19)[1] %**
…**continue offering DMPA**	
All	95
Most	0
Some	5
…**use pregnancy checklist**	
All	68
Most	5
Some	16
Unsure	11
…**fill single use syringe**	
All	84
Most	11
Some	5
…**identify correct place to inject**	
All	95
Most	0
Some	5
…provide intramuscular injections	
All	95
Most	0
Some	5
…counsel on side effects	
All	74
Most	16
Some	11

Table 14: HSA Supervisors Perceptions of HSA Skills (cont.)

Of the HSAs you supervise, how many are competent to…	Supervisors (n=19)[1]
…explain when to return for next injection	
All	84
Most	5
Some	5
Unsure	5
HSAs follow safety and infection prevention guidelines	
All of the time	63
Most of the time	26
Half or less than half of the time	5
Unsure	5
Main difficulties with safety guidelines[2]	
Bringing sharps container to facility	61
Hand washing before & after injection	44
Disposing of needles and syringes	28
Cleaning the client injection site	28

[1] Missing responses vary across questions
[2] More than one response possible

Key informants in all districts agree that using HSAs to provide DMPA services in the communities is safe since they have adequate experience from giving immunizations both to antenatal mothers and under fives. However, one major problem that was noted is the safety of sharps at home, at disposal and during transportation. *"For the sharps container it's a challenge to keep it safe while awaiting disposal,"* said a key informant from Phalombe**.**

4. HSA training, supervision and supplies

The performance of the HSAs in providing DMPA will be at least partly dependent on the training they received, whether they have adequate supervisory support, and whether or not they have the supplies and materials they need to provide quality DMPA services.

Training

After the training, for the most part the HSAs and supervisors felt they were ready to begin providing DMPA services. Most supervisors felt that they were fully prepared (85%) and also that the HSAs were fully prepared to provide DMPA (79%). Only one supervisor felt that he/she was not at all prepared. Similarly, 81% of the HSAs felt fully ready to provide DMPA once the training was completed. Nonetheless, just over half (53%) of the HSAs felt the training they received was too short.

Supervision

Key informants indicated that supervision is considered a priority to monitoring the HSAs work and effectiveness, yet providing timely supervision is a challenge to many supervisors. In the

words of one key informant from Karonga, "S*upervision is not easy due to the multiple roles we have."* According to the supervisors, on average, they oversee 3.7 HSAs who provide DMPA with a range of 1 to 10 (Table 15). Nearly half meet with the HSAs once every 1-2 months. While one supervisor said they meet every week, the rest meet once every 3-4 months or even less frequently. Two reported that they never meet with the HSAs they supervise. The majority feel they should be directly observing the HSAs more often than they do but cite obstacles e.g., time constraints, distance, and lack of transportation. The two main suggestions made by supervisors to strengthen the supervision system to HSAs providing DMPA include providing transportation and more or more consistent supervision.

Table 15: Supervision Of HSAs According to Supervisors

	Supervisors (n=20)[1]
Avg. (range) of HSAs providing DMPA that supervisor supervises	3.7 (1.0-10.0)
How often directly observe HSAs supervise	
Once every 1-2 months	45%
At least once every 3-4 months	15%
Other	40%
Feel should directly supervise HSAs	
More often	74%
Less often	5%
About the same	21%
Main obstacles to directly observing HSAs[2]	
No vehicle/fuel/driver	74%
Too busy	58%
HSA lives far away	53%

[1] Missing responses vary across questions
[2] Multiple responses possible

While the supervisors feel they should be supervising more frequently, two-thirds of HSAs feel they receive all the support they need from their supervisors; the rest say they receive some of the support they need. The main reasons for needing more support (cited by two HSAs each) are because they want more frequent supervision to enhance confidence, sufficient equipment or materials and a solution to transportation problems. The majority (81%) have received feedback on their performance.

Supplies

Both supervisors and HSAs indicated that there are problems maintaining stocks of DMPA and other materials or supplies that they need for DMPA provision. Key informants acknowledge that availability of DMPA in the communities was key to the effectiveness and success of the pilot. Thirty-five percent of the supervisors reported that keeping the HSAs supplied with DMPA is "somewhat of a problem" and one supervisor said it was a "big problem." One-fourth of HSAs reported that they sometimes had to turn a client away because they didn't have any DMPA stocks. As noted by one key informant, *"The current problem is stock out of DMPA and many HSAs are coming to get advice as what to do as many of their women are due for another*

shot…" Key informant interviews suggest there may be a lack of coordination, understanding, and networking at different levels especially between the central and district levels in connection to availability of DMPA.

Aside from stock outs of DMPA, supervisors think that only half of the HSAs they supervise had the educational and information materials they needed. HSA results corroborate those from the supervisor interviews. Over one-third of HSAs said they do not have all the informational or educational materials they need for their DMPA work. Of the twelve HSAs who do not have everything, five or more were missing the training manual, checklist to rule out pregnancy, posters or flipcharts, and information pamphlets for clients.

Key informants provided further information about the supply challenges HSAs face. For instance, they state that HSAs do not have proper structures to operate from. To conduct outreach clinics they may use school buildings or churches but sometimes they just use shaded areas. The challenge is when there is only one room to serve both DMPA and under five or antenatal mothers. The results indicated that in such situations, the DMPA clients are served last with a justification that pregnant mothers and those with young babies are more vulnerable than DMPA clients. "*Structures are not adequate as family planning and under fives [services] are done using the same room and this creates challenges as some may not easily access the service or have to wait for long hours before they are served,"* said one HSA.

Other supply problems discussed by key informants were a lack of stationery and protective wear. While these may be viewed as minor challenges, many feel they have an impact on the pilot and future of the program as well as effective work of the providers. Participants in some districts brought up the issue of stationery because HSAs were reported not to document or write reports due to lack of paper tally sheets and pens. The lack of stationery was an issue not only among HSAs and CBDAs but even at health facilities including district hospitals. Apart from the stationery it was noted that almost all districts were concerned that the community providers had no proper protective wear. One key informant in Phalombe put it this way, "*For both groups they also don't have protective wear like gumboots, umbrella/raincoats. It's a day to day song."*

In addition, some key informants indicated that during training HSAs were promised several items that were to assist with their work such as bicycles. Bicycles are considered important to this program because of the distances HSAs need to cover. It was noted by one key informant that the procurement process and responsible organization for the bikes was not clear.

5. Health systems

Prior to the inception of the HSA DMPA pilot program, the main providers of family planning in the pilot districts were the CBDAs and the health facilities. Since the pilot program has the potential to impact these other providers of family planning, it is important to understand the interrelationships in terms of their respective workloads. It is also necessary to understand the impact of adding a new responsibility to the HSAs on their workload and the implications it may have on their other activities. In addition, because these programs are distinct with regards to the methods and services they provide they need to coordinate their efforts. To do this we examine the referrals being made among the programs and also their respective views on the HSA DMPA

program. Finally, because these programs operate within the larger health care environment, we briefly look at the coordination at the national, district, and local levels.

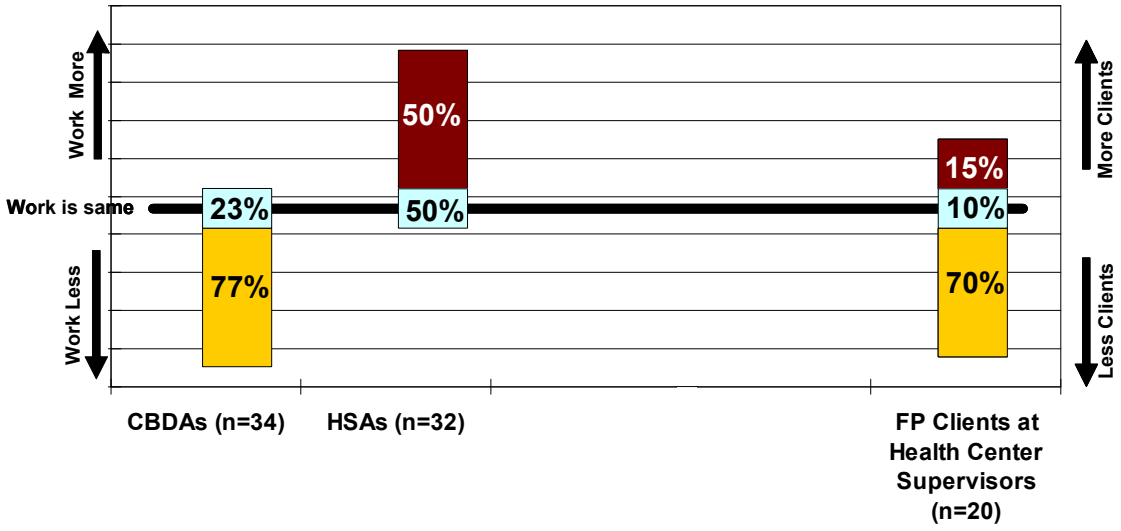
Workload

Figure 6 shows changes in workload for the CBDAs, HSAs, and at the health centres (according to supervisors) since the pilot program began. The majority of CBDAs state that their workload has decreased since HSAs started providing DMPA; the rest say it has stayed the same. No one stated that their workload had increased. The two main reasons why they think they spend less time include women switching to DMPA now that it is available in the community and the workload is now shared between CBDAs and HSAs. Similarly, the majority of supervisors of HSAs report that the number of family planning clients at their health centers has decreased since HSAs starting providing DMPA.

Key informants maintain that the DMPA pilot program has reduced the congestion in health facilities. This is regarded as a benefit since the facilities have few human resources and those that are there are overworked and may not be able to provide services effectively. As stated by a key informant from Phalombe, *"At first we had problems of congestion at our health facilities and were waiting for a long time for the service. But with DMPA the congestion is reduced as women are getting the services in the community and thus it's a benefit to us in the facilities as you are aware that the professionals are few and we are engaged in many activities"*

In contrast, half of the HSAs report they are working more time since they started offering DMPA, and the rest are working the same amount. In addition, 41% say that providing DMPA in addition to their other duties has caused problems. The biggest challenge, cited by 26%, is travelling to clients who live far away.

Figure 6: Impact of Pilot Program on Provider and Facility Workload According to CBDAs, HSAs and Supervisors



Key informants point out that since this was a pilot relatively few HSAs were trained. Therefore, the HSAs who were trained may have had a hard time keeping up with the demand that the pilot created. This has created increased workload for the HSA because the DMPA is an added role that the HSA has been given. One key informant in Salima noted that the "w*ork load for HSAs is increasing as some of them also run a village clinic as well, thus a lot of responsibilities for the HSAs as it's not only Depo program."* As another remarked, *"The HSAs are now the Jacks of all trades."*

Referrals

According to key informants, an emphasis on coordination was made to HSAs, CBDAs, and their primary and secondary supervisors during training. Further they were instructed that their role as providers was to motivate the clients and communities on the benefits of all modern family planning methods. Once the client had chosen a method they had to direct the clients to the appropriate providers where the clients would get the service. Key informants believe that there is very good coordination among the community family planning providers (HSAs and CBDAs). A key informant from Salima noted that *"CBDAs work under HSAs and they work with new problems. Normally the two cadres work hand in hand and each refer clients to each other… according to the client's choice of method…"* Others remarked that they work together and share experiences during review meetings and that they work as a team to serve communities.

The survey results show that family planning providers in the districts are making referrals to each other. While on average the CBDAs have provided oral contraceptives to 42 clients over the past six months, they are also making referrals to the HSAs and to health clinics. On average they have referred 16 clients to HSAs for DMPA in the past six months and referred 12 to a clinic for DMPA. Two-thirds of the HSAs say that sometimes or often a woman comes to them wanting a method other than DMPA; the main methods wanted are oral contraceptives or long acting or permanent methods (e.g. the IUD, sterilization, or implant). The majority of HSAs (84%) say they have very often or sometimes referred a client to another provider for contraceptives. Of those who have made referrals, the places they most refer to are the government or CHAM clinic CBDA (48%), a private clinic (37%), or other places.

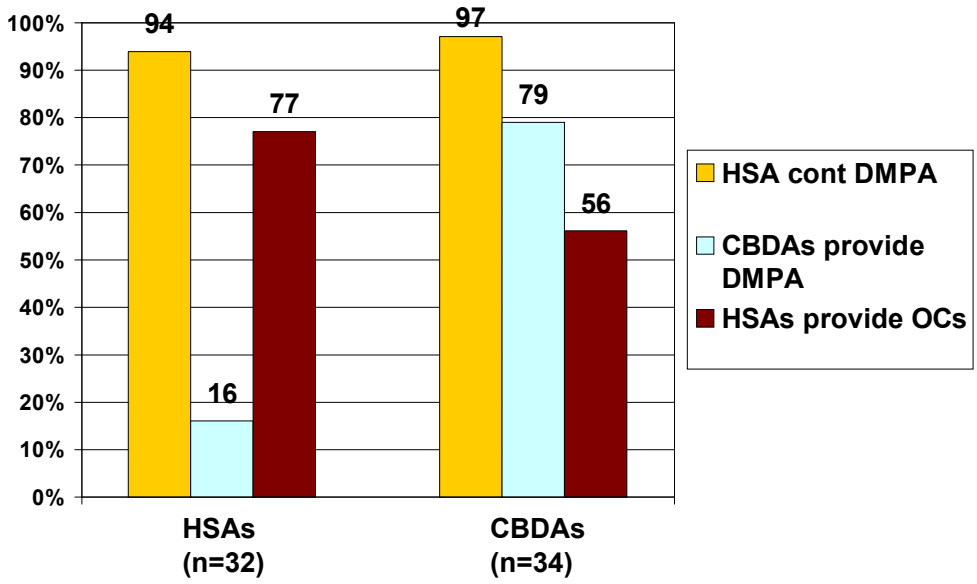
Client reports show a slightly different picture of referrals from HSAs. Between 15-20% of clients (from registers and exit interviews) said they had asked an HSA for a family planning method other than DMPA but few (2% of register clients and 7% of exit clients) received a referral from the HSA to go to another service provider. These referrals were all to a public health facility.

Provider perspectives on DMPA and OC provision

For the most part there is support among all the provider groups for the HSA DMPA program. However, there are divergent views as to the respective roles of HSAs and CBDAs in the provision of DMPA and OCs. Most HSAs want to continue providing DMPA and all but one of the CBDAs think HSAs should continue to provide it (Figure 7). However, the majority of CBDAs would also like to provide DMPA while few HSAs think they should do it. In contrast,

over three-fourths of HSAs also want to provide OCs; just over half of CBDAs agree that they should do this.

Figure 7: Provider Perspectives on who Should Provide DMPA and OCs According to HSAs and CBDAs



Supervisor views are closely aligned to the HSAs (Table 16). Nearly all supervisors are "completely in favor" or "somewhat in favor" of HSAs being trained to provide DMPA; 15% said they were "not at all in favor" of it. The main reason for not being in favor was because of the implications on the HSAs workload. Many supervisors (65%) agree that there are workload issues and that providing DMPA in addition to their other duties causes problems with HSA workloads. Supervisors also believe that for the most part family planning providers are completely in favor of HSAs providing DMPA in their facilities though three reported that providers are not in favor. Supervisors, however, are primarily "not at all" in favor of CBDAs providing DMPA; about one-fourth said they are "completely in favor." The main reasons why they are not in favor are that the CBDAs "cannot do it" or haven't been trained on infection prevention or anatomy. Instead, to alleviate the workload problem, some supervisors suggest training more HSAs in DMPA and training more HSAs in general.

Table 16: Supervisor Perspectives on HSA and CBDA Provision of DMPA

	Supervisors (n=20)[1] %
Believe more HSAs should be trained	
Completely in favor	75
Somewhat in favor	10
Not at all in favor	15
FP providers approve HSA provision of DMPA in their facilities	
Completely in favor	80
Somewhat in favor	5
Not at all in favor	15
CBDAs should be trained to provide DMPA	
Completely in favor	25
Somewhat in favor	10
Not at all in favor	65

[1] Missing responses vary across questions

In general most key informants supported CBDA provision of DMPA, but a few were against the idea. Those that supported CBDA provision had specific criteria of inclusion and exclusion. For instance: *"We have some CBDAs who have MSCE who have been trained for HCT and were asking if they could be trained for DMPA. But these would not be many as only a few have good education. Thus those with MSCE would understand the importance of infection prevention. After all those who are doing HCT are dealing with infections and practice IP. So if you train them they would do the job."* (Key informant, Phalombe). Those who were against the idea of training CBDAs to provide DMPA held this opinion for a variety of reasons, ranging from the low education level of CBDAs to the fact that they are volunteers. It was noted that if the CBDAs are trained, there would be no difference between the CBDAs and HSAs and that CBDAs might demand to be paid. Another argument against training CBDAs (which is also an argument against training HSAs) is that the legal and professional bodies don't recognize the ability of these cadres to provide injectables. According to a key informant in Salima, "*Not to give Depo as they are not well trained and not protected by policy and if trained they will be like HSAs…"* A key informant from Karonga put it this way, ***"****CBDAs are not in government so how do we regulate, supervise, monitor and discipline them?"*

While many do not believe CBDAs should be trained to provide DMPA, others suggested that CBDAs should be given more support. While they believe CBDAs are committed to the pilot program there is concern that their morale is dropping and their only incentive would be because they would be able to go to attend training workshops. A key informant from Salima summed it up this way, *"I feel the CBDAs have not and are not assisted although they are doing recommendable work. As a result their enthusiasm is reducing and some are dropping out. I wish they could be given some incentives of some sort like promoting some of the good ones to train as HSAs, providing them with bicycles as well as refresher courses every six months as it was stipulated in their manual."*

Coordination
Key informant interviews point to some aspects of service delivery which could benefit from improved coordination and communication at different levels. DMPA stocks were identified as one area where there needs to be better coordination at the levels of the CMS (Central Medical Stores), regions, and districts. Some key informants discussed confusion with the procurement process in that DMPA stocks can come from both donor supplies and the CMS, though CMS stocks cost more. In addition, it was pointed out that districts may lack knowledge of and ability to account for resources which can lead to stock outs. Another issue, which was previously noted, was a lack of clarity of who was responsible for certain supplies, e.g., bicycles.

A final aspect that suggested a need for better coordination was that key informants from most districts indicated that the DEHOs were not involved or oriented about the DMPA pilot program from the planning stages and yet they were asked to participate in the evaluation process. Their responses during the interviews indicated that there were some misunderstandings from the beginning of the pilot on responsibility for as well as ownership of the pilot. "*Major problems with this program are: I was not informed officially or oriented about it until when you had sent a letter of this evaluation. It's when I was called that I'll need to give my views. Thus I was surprised as I didn't know what to say. Probably this has occurred in other districts…"*

IV. DISCUSSION & RECOMMENDATIONS

The three main findings of this evaluation are that HSA provision of DMPA is acceptable, is safe, and expands access to family planning. While the results are mostly positive, they also point to some programmatic aspects that need to be strengthened or considered. These include constraints with supplies, supervision, and health system coordination.

Interviews with clients, providers, and key informants show that for the most part communities find the pilot program acceptable. Furthermore, the clients themselves are satisfied with it. The few notes of complaints were primarily about the side effects of DMPA rather than any negative thoughts about the program.

Direct observations show that most HSAs are following the procedures for safe provision of the injection. But, while the average number of procedures followed is very good, the range of the number of steps followed shows that not all HSAs are following the safety procedures. This suggests the need for additional supervision visits to identify which HSAs need the most guidance. Finding ways to enable supervisors to make more supervisory visits is another issue for consideration. In addition, refresher training may be necessary for at least some of the HSAs. Also, a lack of supplies may be impacting safety procedures, for instance many HSAs reported a lack of soap which would explain why not all of the HSAs were observed to be washing with soap and water. Other issues identified as potentially problematic relate to disposing of needles and syringes and bringing sharps containers to health facilities. A lack of transport was identified as a factor contributing to the challenge of returning the sharps containers.

While direct observations and interviews with HSAs and clients show that the HSAs are creating a good counseling environment, the results also suggest that the specific content of the

counseling sessions should be strengthened. All clients should be counseled until they understand that DMPA protects against pregnancy for three months. Client reports of their knowledge of side effects and warning signs do not match HSAs reports of their own knowledge or counseling. While it is possible that HSAs provided counseling but clients did not remember what they were told, these results highlight the need for reinforcing messages at different visits. The direct observations only recorded counseling on side effects for new or restarting clients, therefore, supervisors should verify that HSAs are also providing or reinforcing messages to continuing clients. Improving the stock of educational materials that many HSAs report missing might also help convey information to clients. Finally, there seems to be a widespread lack of awareness among both HSAs and supervisors that pregnancy can be ruled out for a new or restarting client so that she can receive DMPA on the same day. Further training on this issue and particular on use of the checklist to rule out pregnancy is needed. This will also improve skills for reinjections for clients who return after the grace period for their next reinjection.

Program records and client surveys suggest that HSA provision of DMPA is increasing access to contraceptives in rural Malawi. Not only is the program making it easier for women to get their reinjections, it has also attracted new users to family planning. While this assessment did not fully examine the issue of continuation, there are indications that discontinuation is high. There is no way of knowing if the reasons for discontinuation are access problems or dissatisfaction with DMPA. Indications from HSAs and clients are that clients are generally told when and where to come for their next appointment. A further assessment would be worthwhile to explore this issue to verify if this is in fact a problem, and if it is, to understand the reasons for discontinuation to try to improve any factors amenable to change.

Finally, the impact of the DMPA provision on the workload of the HSAs and coordination with other health care providers are issues that remain to be addressed. It is clear that HSA workload has increased for many since the inception of the pilot program. As the program gets scaled up and demand for DMPA grows the added work could lead to a decrease in the quality of the other activities that the HSAs are responsible for. Finding ways to spread out the work associated with DMPA provision is a challenge that will need to be resolved. While CBDAs could help alleviate the HSAs workload, there are clear differences of opinion as to whether or not CBDAs should be trained to provide DMPA. The results have shown that HSAs and CBDAs are doing well at coordinating their work and referring to each other, but differing ideas of the respective roles of CBDAs and HSAs in the future provision of DMPA and oral contraceptives is a potential area of conflict between the two groups. Another challenge to the health system includes clarification of the procurement process for DMPA as well as other supplies.

This assessment has shown that a pilot program using HSAs to provide DMPA in rural areas of Malawi has been successfully implemented. While programmatic challenges remain, the program has made great strides in improving access to family planning services for hard to reach populations. The results of the evaluation were disseminated on July 8, 2010 at a meeting in Lilongwe. The RHU acknowledged that the results demonstrated that HSAs can safely provide DMPA and recommended that the pilot program be expanded nationwide. The mechanism for the expansion will be discussed at the next Family Planning Technical Working Group meeting. The expansion will allow for continued provision of DMPA by HSAs. During the discussion there were divided views on CBDA provision of DMPA. One argument not in favor of CBDA provision was that since HSA provision will be a new service in Malawi, there is a need to

monitor providers in the areas that need improvement. Thus, while CBDAs will still not be permitted to provide DMPA at the moment, there could be consideration of CBDA DMPA distribution in the future. Discussion at the dissemination also touched on some of the programmatic challenges. With regard to DMPA stocks, it was mentioned that MOH procured stocks incur a higher service charge from the CMS. This coupled with the current demand makes it difficult for providers to meet the demand of their clientele. With regard to the issue of inadequate hand washing among service providers, a suggestion was made to do a hand rub instead, which is seen as more convenient. Finally, it was pointed out that the areas of referral and follow-up were currently being addressed through review meetings.

Two new FHI studies will further explore other possibilities for increasing access to DMPA in rural areas. The first will look at the safety and acceptability of DMPA provision by CBDAs associated with Adventist Health Services. Another study will look at the safety and acceptability of Uniject, a new form of DMPA, which is just as effective but with one-third less hormone. In addition, Uniject is simpler to use, creates less medical waste and has fewer risks of needle stick injuries. Together, these pilot programs have the potential to increase contraceptive prevalence in rural Malawi.

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