The Federal Democratic Republic of Ethiopia
Ministry of Health

APRIL 2014

RAPID ASSESSMENT

Accelerated Plan for Scaling Up Prevention of Mother-to-Child Transmission Services in Ethiopia

Achievements, Challenges and Opportunities for Implementation

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ACKNOWLEDGEMENTS

FHI 360 provided technical and financial support to the Federal Ministry of Health to conduct this study. From the Federal Ministry of Health, the study team included Dr. Tadesse Ketema (Maternal and Child Health Advisor), Dr. Helina Kebede (Child Health Team Leader), and Emiamrew Sisay (Prevention of Mother-to-Child Transmission Officer). From FHI 360, the study team included Susan Adamchak, PhD (Scientist, Health Services Research); Francis O. Okello, MA (Chief of Party, PROGRESS project, Ethiopia); and Mackenzie Green, MHS (Research Associate II, Health Services Research). The entire study team would like to thank Dereje Mamo, a consultant hired by FHI 360, for his assistance with coordinating the study and managing fieldwork; Betty Fekade for her assistance with coordinating logistical needs for the study; Kerry Aradhya for editing the report; the Regional Health Bureaus of Gambella, Somali, Oromia, and Tigray and the City Administrations of Addis Ababa and Dire Dawa for granting permission for the study in their regions; and all study participants, who included members of the Prevention of Mother-to-Child Transmission Technical Working Group, Regional Health Bureaus, and health centers of the study regions.

Foreword

Services for the prevention of mother-to-child transmission (PMTCT) have been implemented in Ethiopia since 2001. However, mother-to-child transmission (MTCT) of HIV has remained a challenge for the country because of low coverage of services, inadequate quality of available services, and slow scale-up of service provision. Since 2007, the Government of Ethiopia has endorsed an integrated approach to comprehensive PMTCT, reproductive health, and maternal, newborn, and child health (MNCH) services. In 2011, Option A was adopted to provide more effective antiretroviral (ARV) drugs to reduce MTCT of HIV. (In Option A, infants receive ARV prophylaxis and mothers receive different regimens of ARV drugs before birth, during delivery, and during the postpartum period). However, loss to follow-up care and dropout from antenatal care, compounded with low institutional delivery rates, posed great challenges to the PMTCT program.

Cognizant of these facts, in December 2011, the Government of Ethiopia released an Accelerated Plan for Scaling up PMTCT Services in Ethiopia to spur momentum toward achieving the 2015 targets set in the Fourth Health Sector Development Program. The Accelerated Plan focused on rapid expansion of PMTCT sites, improvement in service quality, demand creation, and strengthening of the monitoring and evaluation system. Rapid expansion of PMTCT sites referred to the phased integration of PMTCT into the service package of all facilities providing MNCH services. Efforts to improve the quality of MNCH/PMTCT services focused on the technical competence of providers, improvements in infrastructure, and an uninterrupted supply of essential drugs and commodities. Finally, the Health Development Army served as the primary vehicle for creating demand and mobilizing the community.

Following the implementation of the Accelerated Plan, the Federal Ministry of Health evaluated its implementation to assess progress made in the PMTCT program over one year. This document describes in detail the key objectives of the assessment, methods of data collection and analysis, key findings, and recommendations to be used in subsequent planning to eliminate MTCT in Ethiopia.

The findings show that coverage of women accessing PMTCT services increased from 25.5% in 2010/11 to 43% in 2011/12 and that the number of facilities providing PMTCT expanded to 2,044. However, much needs to be done to further improve the coverage of services for early infant diagnosis and HIV-exposed infants who are started on co-trimoxazole prophylaxis (18.2%).

Since 2007, the Government of Ethiopia has endorsed an integrated approach to comprehensive PMTCT, reproductive health, and maternal, newborn, and child health (MNCH) services.

Taking this opportunity, the Federal Ministry of Health would like to thank FHI 360 in Ethiopia, the PMTCT Technical Working Group, and all the contributors who have been involved in the evaluation and the development of this document.

Kebede Worku (MD, MPH)

State Minister

ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
AP	Accelerated Plan
ART	Antiretroviral Therapy
ARV	Antiretroviral
CQI	Continuous Quality Improvement
eMTCT	Elimination of Mother-to-Child Transmission
FGD	Focus Group Discussion
FMOH	Federal Ministry of Health
GOE	Government of Ethiopia
HAPCO	HIV/AIDS Prevention and Control Office
HCT	HIV Counseling and Testing
HDA	Health Development Army
HEW	Health Extension Worker
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IDI	In-Depth Interview
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MOH	Ministry of Health
MNCH	Maternal, Newborn, and Child Health
MTCT	Mother-to-Child Transmission
PFSA	Pharmaceuticals Fund and Supply Agency
PMTCT	Prevention of Mother-to-Child Transmission
RHB	Regional Health Bureau
STI	Sexually Transmitted Infection
TWG	Technical Working Group

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Executive Summary

This report presents the findings of a rapid assessment of the Federal Ministry of Health's *Accelerated Plan for Scaling Up PMTCT Services in Ethiopia* (AP), implemented during 2012. The AP was undertaken to spur momentum toward achieving the 2015 targets set in the Fourth Health Sector Development Program. The AP focused on rapid expansion of prevention of mother-to-child transmission (PMTCT) service sites, improvements in service quality, demand creation, and strengthening of monitoring and evaluation (M&E) systems.

The goal of this assessment was to review the achievements of the PMTCT program under the AP, and to identify the challenges encountered and opportunities for closing performance gaps. The objectives, which responded to the need to analyze progress during the first year of the plan, were to:

- Take inventory of achievements under the AP at the regional level in terms of human and supply investments and implementation status.
- Assess readiness to provide PMTCT services in facilities through the cascade of care.
- Assess trends in indicators of PMTCT service utilization before and during implementation of the plan.
- Describe the experiences of community members engaged to increase access to and demand for maternal, newborn, and child health (MNCH)/PMTCT services.

Data were collected in December 2012 and January 2013 in two cities and four regions representing urban, agrarian, and pastoral contexts. Eight members of the National PMTCT Technical Working Group were interviewed, as were 18 regional representatives, 121 directors of health facilities, and 121 service managers. Twenty focus group discussions were held with members of the Health Development Army, members of mother-to-mother clubs, and male and female community members. Site assessments were also conducted at 122 facilities.

The implementation of the AP focused on four major strategies: rapid expansion of PMTCT service sites, improvements in the quality of MNCH/PMTCT services, demand creation, and rollout of revised national guidelines. These four implementation strategies were to be supported by enhanced M&E. This report focuses on experiences with the first three strategies and with M&E.

RAPID EXPANSION OF PMTCT SERVICE SITES

Most regions approached the expansion of access to a full range of antenatal care (ANC) and PMTCT services with a strategy of universal access. Respondents valued the participatory process used during AP implementation. Implementation of the AP resulted in increased referrals by community health workers, targeted information delivered through facility-based and community-based means, staff trained, and stock in place to deliver new services.

HEALTH SYSTEM STRENGTHENING AND CAPACITY BUILDING

Supply chain management and coordination was challenging at the outset of the AP, with delivery of appropriate supplies often lagging behind provider preparation and training. Ordering supplies was seen as complicated and bureaucratic; facilities were sometimes forced to directly procure drugs and supplies after approval by the regional board. Capacity building through provider training was regarded as a highly successful collaboration with partners; mentoring was noted to require further strengthening.

DEMAND CREATION

The efforts of the Health Development Army were widely acknowledged to be significant in generating community awareness of key AP elements. Challenges in informing communities about the improved services included poor coverage of local TV stations in large regions, lack of access to TV among poor households, insufficient posters and leaflets for distribution, limited activities from woredas and kebeles, and limited budgets.

QUALITY IMPROVEMENT, RESOURCE ALLOCATION, AND MONITORING AND EVALUATION

A quality improvement process was initiated under the AP, and it will be a priority under the follow-on plan to eliminate mother-to-child transmission. During resource allocation, instructions differed as to the responsibility for budgeting at different levels of the health system. Responses were mixed as to whether available resources were sufficient for the tasks undertaken during implementation of the AP. M&E was a challenging process, as the existing Health Management Information System did not collect all the data needed to monitor the plan. Also, the introduction of the new monitoring system for PMTCT parallel to the Health Management Information System was delayed, resulting in the submission of incomplete and inconsistent data.

CONCLUSION

Overall, the findings of the assessment are consistent with the successes and challenges anticipated with the introduction of any new health program on a large scale. It is to be expected that there will be variations in implementation across geographic areas and challenges in aligning the functions of all inputs necessary for smooth system function, such as demand creation, supply provision, enhanced staff skills, and collection and use of high-quality data for decision-making. The findings further point to several key interventions that can be considered to improve efforts to eliminate mother-to-child transmission in Ethiopia:

- Audit the quality of data trending in the Health Management Information System.
- Develop a standardized system for follow-up of referrals.
- Strengthen the involvement of health extension workers in monitoring adherence to antiretroviral therapy, retaining people with HIV/AIDS in care, and scheduling infant testing.
- Reinforce commodity management.

Introduction and Rationale

In 2011, the number of HIV-positive adults (ages 15-49) in Ethiopia was estimated to be approximately 800,000 including more than 38,000 pregnant women.[1]

Additionally, 182,249 children ages 0 to 14 were estimated to be HIV-positive, most having been infected through mother-to-child transmission.[1] New HIV infections were estimated at 24,236 among adults and 13,008 among children. Given the importance of vertical transmission of HIV/AIDS in the country, the Government of Ethiopia (GOE) has given high priority to prevention of mother-to-child transmission (PMTCT). Strides have been made in the coverage and quality of PMTCT services. For instance, PMTCT services expanded from 32 to 1,445 health facilities in just six years, between 2003/4 and 2010/11. Despite these achievements, 52% of facilities offering maternal, newborn, and child health (MNCH) services do not include PMTCT services as part of their service packages. Moreover, opportunities are often missed to retain women in PMTCT services in settings where the services are available. In 2010/11, 34% of an estimated 2.9 million pregnant women were tested for HIV. Only 40% of those identified as HIV-positive received antiretroviral (ARV) prophylaxis, and just 24% of HIV-exposed newborns received prophylaxis.[2]

In December 2011, the Federal Ministry of Health (FMOH) released the *Accelerated Plan for Scaling Up PMTCT Services in Ethiopia* (AP) to spur momentum toward achieving the 2015 targets set in the Fourth Health Sector Development Program. The AP focused on four major strategies: rapid expansion of PMTCT sites, improvement in PMTCT and MNCH service quality, demand creation, and rollout of national guidelines. The four strategies for implementation were to be supported by strengthening of monitoring and evaluation (M&E) systems. The plan reinforced a collaborative process that relied on the inputs of both public and private health sectors and that capitalized on the support and inputs of various donor organizations and implementing partners. This document describes the findings of a rapid assessment of the implementation of the AP, conducted in December 2012 and January 2013.

The goal of this assessment was to review the achievements of the PMTCT program under the AP and to identify challenges encountered and opportunities for closing performance gaps.

Objectives, which responded to the need to analyze progress during the first year of the plan, were to:

- Take inventory of achievements under the AP at the regional level in terms of human and supply investments made and implementation status.
- Assess readiness to provide PMTCT services in facilities through the cascade of care.
- Assess trends in indicators of PMTCT service utilization before and during implementation of the plan.
- Describe the experiences of community members engaged to increase access to and demand for MNCH/PMTCT services.

As the FMOH program moves forward in its efforts to expand access to PMTCT services and improve the quality of care offered through MNCH services, it will be useful to take stock of the accomplishments realized during the implementation of the AP. This process will permit the recognition of successes that can be built upon in the future and challenges that can be addressed to strengthen this important effort.

Background and Structure of the Accelerated Plan

The AP was introduced when the FMOH noted regional disparities in the proportion of pregnant women tested for HIV, low overall PMTCT coverage, and high dropout rates along the PMTCT service cascade. On the assumption that lack of access to services was a key obstacle, the AP was developed to address this and other key constraints. Responsibility for PMTCT is now shared among three MOH Directorates: Urban, Pastoralist, and Agrarian, with the Urban Directorate tasked with overall leadership. Although the FMOH provides overall guidance, the regions are allocated responsibility for implementation.

A steering committee, chaired by the State Minister of Health, is the principal body responsible for PMTCT policy; a technical working group (TWG) composed of MOH staff and representatives of donor agencies and implementing partners drafted the AP. Sub-groups and teams are responsible for technical support in the four key areas of the AP: site expansion; the drafting of information, education; and communication strategies for community engagement; M&E guidance; and mechanisms for logistical support.

The Regional Health Bureaus (RHBs) prepared plans for the expansion of treatment Option A, in which infants receive ARV prophylaxis and mothers receive different ARV drug regimens before birth, during delivery, and during the postpartum period; continuation of treatment after breastfeeding ceases is based on the CD4 count of the mother. The RHBs customized their plans for expansion based on their own contexts. In some cases, the RHBs formed new regional TWGs to guide the process of expansion; in other cases, they added this function to existing committees. The regional TWGs included technical and financial health personnel, implementing partners, and local universities. Implementation strategies varied by region, with some focusing on training all facility staff at the zonal level and others having partners support expansion at individual facilities. The FMOH provided supportive supervision through the TWGs, and partners provided additional support.

Ethiopia also plans to move forward with the introduction of Option B+, in which HIV-positive pregnant women are started on life-long antiretroviral treatment (ART) at the time of diagnosis, regardless of their clinical status. Option B+ simply calls for a triple ARV regimen to be administered from the fourteenth week of pregnancy until one week after breastfeeding has ended (or until after childbirth if the woman is not breastfeeding). Infants receive ARV prophylaxis as well. Option B+ is a key strategy in the *2013-2015 National Strategic Plan for Elimination of Mother-to-Child Transmission (eMTCT) of HIV*, which because of its public health approach is expected to have a significant effect in reducing mother-to-child transmission.

This report focuses on the experience of putting the first three strategies for AP implementation in place, and of strengthening M&E. We do not address the rollout of guidelines, as the decision to move to Option B+ mandated revision and updating of existing guidelines.

Methods

SITE SELECTION

MOH PMTCT staff familiar with the AP selected two city administrations (Addis Ababa and Dire Dawa) and four regions to be included in the assessment, including less well-served priority pastoralist and agrarian areas with high volumes of pregnant women. The four regions were Gambella, Somali (both emerging regions), Oromia, and Tigray. Based on their knowledge of implementing the AP, staff of the RHBs purposively selected health facilities to be included as sites in each region. However, because of the method of selection, the findings presented in this report may not be representative of all facilities in all regions. The team had initially planned to evenly distribute the sites by region, but was requested to over-sample in Oromia because of its large number of facilities.

DATA COLLECTION

Multiple data collection methods were used to gain a deeper understanding of the rollout of the AP. In-depth interviews (IDIs) were conducted with eight members of the AP TWG, which included representatives of United Nation agencies, donors, implementing partner organizations, and the MOH. IDIs were also conducted with three RHB staff members in each region, including PMTCT focal persons, curative and rehabilitative process owners, pharmaceutical supply and distribution officers, M&E officers, and others. IDIs were also conducted with both the director of the facility and an appropriate service manager at each health facility.

At each site, the service manager that was interviewed also helped complete a site assessment, designed to measure site readiness to offer the services promoted through the AP. For the site assessment, the data collection team was instructed to review service registers and logs to see whether the facilities had recorded data for the indicators included in the AP: ANC coverage, number of visits, number of referrals, and HIV counseling and testing (HCT); HCT in labor and delivery; PMTCT provision of ARV drugs and infant feeding counseling; family planning; and follow-up of mother-infant pairs.

Focus group discussions (FGDs) were held by assessment team members in each city administration and region to obtain information related to community mobilization and awareness of AP services. Discussions were conducted separately with members of the Health Development Army (HDA), male and female community members, and members of mother-to-mother support groups. Although some of the female community members may also have been members of the HDA, they were recruited as health service consumers and asked different questions than those recruited as HDA members. Also, two regions did not have functioning HDA programs, so HDA members could not be recruited from those regions.

Finally, Health Management Information System (HMIS) data from EY 2004/05 were analyzed for five key variables: number of women served by antenatal care (ANC), number of women tested for HIV in PMTCT services, number of women attending skilled deliveries, number of women receiving a full course of ARV medication for

PMTCT, and number of women accessing post-natal care. These data have been presented elsewhere[3] and, because of irregularities in the data, are not included in this report.

Following a two-day training that took place in Addis Ababa on December 19 and 20, 2012, data collection began on December 21, 2012, and was completed by January 7, 2013. The data collection team was composed of 19 consultants recruited by FHI 360, three staff members of the FMOH and RHBs, three national supervisors, and six regional supervisors. IDIs and FGDs were conducted by pairs of interviewers; one member of each pair took notes during the interview or discussion.

STATISTICAL ANALYSIS

Results from IDIs and FGDs were tabulated using Excel spreadsheets, and the site assessment data were entered using EpiData by a consultant engaged by FHI 360. Data from the site assessments were analyzed according to geographic characteristics: Urban (Addis Ababa and Dire Dawa); Agrarian (Tigray and Oromia); and Pastoral (Gambella and Somali). Data were cleaned by an FHI 360 analyst working in Addis Ababa, and tables were produced using Stata 10.0 statistical software.

General Findings

A total of 125 sites (health facilities) were planned for inclusion in the assessment. As shown in Table 1, 122 of those sites were assessed, and directors and services managers were interviewed from 121 sites. In addition, 18 IDIs were held with regional experts (three from each city administration and region). However, two interviews with regional staff were not used in the analysis, as the persons occupying the positions had not been in place long enough to have sufficient knowledge of the AP. Although not shown in Table 1, eight IDIs were also held with members of the National PMTCT TWG.

Six FGDs were held with mother-to-mother support groups, six with female community members, four with HDA members, and four with male community members.

Table 2 shows the distribution of the 122 facilities included in the site assessment, by location, region, and type of facility. The majority of sites were health centers. Nearly half were in agrarian locations.

TABLE 1: Numbers of Sites Assessed, In-depth Interviews, and Focus Group Discussions Completed by City or Region (# Completed/# Planned)

City or Region	Site Assessment	IDI Regional Experts	IDI HF Director	IDIs HF Service Manager	FGD HDA	FGD MCM	FGD FCM	FGD MCM
Addis Ababa	20/20	3/3	20/20	20/20	1/1	1/1	1/1	0/1
Dire Dawa	15/15	3/3	15/15	15/15	1/1	1/1	1/1	1/1
Oromia	40/40	3/3	39/40	39/40	1/1	1/1	1/1	0/1
Tigray	20/20	3/3	20/20	20/20	1/1	1/1	1/1	1/1
Gambella	13/15	3/3	13/15	13/15	(NA)	1/1	1/1	1/1
Somali	14/15	3/3	14/15	14/15	(NA)	1/1	1/1	1/1
TOTAL	**122/125**	**18/18**	**121/125**	**121/125**	**4/4**	**6/6**	**6/6**	**4/6**

Note: *Due to time and distance constraints, three sites were not reached in Somali and Gambella; interviews were not conducted with the director and service manager at one facility in Oromia.*

Abbreviations: *FCM = female community member; FDG = focus group discussion; HDA = Health Development Army; HF = health facility; IDI = in-depth interview; MCM = male community member.*

TABLE 2: Characteristics of Facilities in Site Assessment

Characteristic	All Facilities (n=122)
	%
Location of Facility	
Urban	29
Agrarian	49
Pastoral	22
City Administration or Region	
Addis Ababa	16
Dire Dawa	12
Gambella	11
Oromia	33
Somali	12
Tigray	16
Type of Facility	
Health center	93
District hospital	5
Referral hospital	2

Rapid Expansion of PMTCT Service Sites

KEY FINDINGS

- *Most regions approached the expansion of access to the full range of ANC and PMTCT services with a strategy of universal access, rather than reliance only on HIV incidence.*
- *Respondents valued the participatory process that was used in AP implementation.*
- *Implementation of the AP resulted in increased referrals by community health workers, targeted information delivered through facility-based and community-based means, staff trained, and stock in place to deliver new services.*

Members of the TWG, regional experts, and facility directors and managers were asked during IDIs to address the fundamental activities undertaken to support the rollout of the AP. Activities included regional consultation for identifying and prioritizing facilities, mapping partners and soliciting support, preparing a plan of action with costing, building capacity, strengthening logistics management, launching services, and providing routine technical assistance.

Several respondents interviewed during the assessment noted that putting the AP into place created a sense of shared responsibility between the regional and federal levels of the MOH in terms of addressing PMTCT. In the words of one informant:

Every partner and government individuals are very committed to making this happen.

One TWG respondent said that there is a need to ensure that the energy at the federal level is reflected at the very lowest level of the health system. He noted that there continues to be a need to reach the lowest-level facilities efficiently and effectively.

Informants were asked whether there had been challenges in prioritizing site selection for expansion in view of the AP criteria, which include geographic location, population, ANC client load, HIV prevalence, functionality of health centers, and availability of other HIV services.

The site expansion criteria set in the AP were intended to help guide regional expansion, rather than be proscriptive and definitive. Several respondents at the federal level noted that two different and occasionally conflicting views evolved as to how to prioritize sites. In the words of one:

Some advocate for universal access, and others say that expansion should be directed by evidence, especially HIV prevalence. The regions prefer the universal access approach but partners prefer the prevalence approach, as they need to demonstrate performance to donors.

As a consequence, some regions wanted to expand more widely than they had the capacity to do so. At the same time, there were no strong incentives on the partners' side for expanding into distant rural areas, particularly when the partners might not have the resources to include sites with very small caseloads.

Most regions approached the expansion of access to the full range of ANC and PMTCT services with an equity strategy. In a few cases, services were introduced in areas of very low HIV prevalence, where some facilities had not yet reported any cases of HIV-positive pregnant women. Several respondents remarked that it would be more cost-effective to ensure that all women receiving ANC are tested for HIV wherever they attend ANC, including health posts. This could be complemented by other strategies such as deploying outreach staff or reducing transportation barriers, for example by using community insurance systems to pay transport costs so women identified as having HIV could access centralized services.

Another alternative mentioned was training health extension workers (HEWs) to perform HIV testing, which had been done successfully on a small scale by an implementing partner. However, the feasibility and sustainability of training HEWs on a larger scale would be very challenging. Managing and implementing such an initiative at the level of health posts would be especially difficult in terms of adequacy of resources, oversight of the quality of service, and the massive amount of training that would be needed for the HEWS. One informant pointed out that the differing planning cycles of the GOE and the implementing partners were also challenging. Partners may have already had work plans in place, and may not have had the budget resources to go to additional sites. Similarly, MNCH may not be a priority for some partners if their primary focus is on HIV care and support. However, PMTCT is part of the MNCH platform, so programs need to reach women accessing MNCH services.

Regions were asked to select facilities to be part of the AP. Reflecting on the process, one respondent said:

Looking at it critically, it came out clearly that prioritizing areas would be critical, maybe the way we did it, was it good? Would regions have needed more support? They need to know [HIV] prevalence, the number of pregnant women anticipated. They may need more technical assistance at the local level, as the reality may not be the same at the zonal or woreda level.

Virtually all the regional respondents indicated either that a new task force had been established to guide the activities of the AP, or that an existing HIV/AIDS technical group had taken on this responsibility. In general, the groups met regularly, on a bi-monthly, monthly, or quarterly basis, although several people noted meetings were "as needed" or "not frequent." The task force took on some supervisory functions, monitored logistics and supplies, arranged for training, and worked with HDA members to build capacity. Only one respondent (in Gambella) indicated that the task force did not push forward the goals of the AP, commenting that there was no extra effort made to plan, monitor, or support facilities; the RHB routinely monitored PMTCT, although the supervisor making the visit often did not have specialized knowledge in or responsibility for PMTCT services.

Half of the regional respondents said there were no challenges in selecting sites for expanded services. Others said that they gave priority to those sites staffed with midwives. For example, in Somali, they had planned to reach 36 of 70 health centers providing ANC; at the time of the assessment, they had only reached 29 because of staffing constraints. One respondent referred to an insufficient number of skilled workers, the logistics system, and the regional topography itself as obstacles.

About one-quarter of respondents indicated that they followed national criteria for site selection, taking heed of the functionality of the health facility, HIV prevalence, existing PMTCT services, and client load. Other experts noted that the selection process was coordinated with the plans of woredas, that locations with strong need were prioritized, or that criteria such as facility type, geographic distance, accessibility, and community needs were considered. Respondents indicated that Gambella opted to move from the center to the periphery, first including all health centers offering ANC. In contrast, in Dire Dawa, all facilities in the region (both public and private) were targeted.

One-third of the regional experts reported no change in local policies to advance the AP. Others mentioned specific actions, such as assigning a focal person to track progress, paying more attention to PMTCT (including allocating equipment from the regional stores), and instituting monthly MNCH/PMTCT review meetings by the responsible technical team. Several others cited specific changes to operational guidelines, such as updating the clinical criteria to start ARV prophylaxis for pregnant women, instituting 24-hour labor and delivery services at health facilities, and revising referral strategies. Two-thirds of the respondents indicated these changes were made in a timely manner; the remaining one-third said that problems delayed successful implementation at the outset, but that the problems have been gradually addressed.

In general, the informants cited a participatory planning process for the implementation of the AP, with regional partners typically supporting training and capacity building, the RHB assuming responsibility for M&E and overall coordination, and the Pharmaceuticals Fund and Supply Agency (PFSA) managing logistics. Respondents in Oromia and Dire Dawa specifically reported undertaking partner mapping to identify the sites with and without partner support. In some cases, participants from non-supported sites were included in training opportunities. Responses generally indicated an atmosphere of collaboration, although several people pointed out that the RHB and partners worked separately, that partners had their own quotas, and that partners had better resources than the RHB. At least one respondent in each of five cities and regions (all but Somali) cited specific efforts to plan complementary activities and avoid redundancy. That said, two of the Somali respondents mentioned that the focus on PMTCT and the work of the task force had contributed to better collaboration than had previously existed.

At the facility level, directors and service managers were asked to identify changes that had been made to policies and operating procedures to support the increased focus on PMTCT and safer pregnancy. No single strategy was mentioned by more than one-fourth of the respondents, but increased referrals by community health workers, targeted information delivered through facility or community mobilization, staff trained and commodities stocked to deliver new services, and integrated and more comprehensive services were among the strategies noted (Table 3).

In Table 3 and subsequent tables that report data for facility directors and service managers, only aggregate data are reported. This is to protect the confidentiality of the respondents, in view of the small number of sites included in several regions. Regional findings that deviate from the norm are mentioned in the text.

A respondent from Gambella thought that the actions taken to improve services were not entirely the result of the AP, but rather the independent actions of facility staff. However, this was an

isolated view (held by no other respondent) that should be interpreted with caution considering that all supplies to health facilities and staffing is provided by the FMOH:

All the changes brought, however, may not necessarily be the result of the new PMTCT accelerated plan. It is entirely the effort of the health facility to improve its services and reach more people with its services. It seems there is no integration and networking between regional health bureau, nongovernmental organizations, and health facilities, which resulted in [an] information gap, and they don't have common understanding in the work to be done and what is the right way of doing, which is nationally approved.

TABLE 3: Percentage of Health Facility Directors and Service Managers Reporting on Reorientation of Health Services

Strategy for Reorientation	Facility Directors (n=121) %	Service Managers (n=119) %
Increased referrals of pregnant women by HEWs	12	23
Community mobilization efforts to increase awareness of services	21	18
PMTCT health education at the facility	7	20
Staff trained in PMTCT services, and supplies procured	17	15
Service integration and comprehensive services	9	9

Note: *Multiple responses permitted; only responses given by 10% or more of respondents are reported.*

Abbreviations: *HDA = Health Development Army; HEW = health extension worker; PMTCT = prevention of mother-to-child transmission.*

Health System Strengthening and Capacity Building

KEY FINDINGS

- *Supply chain management and coordination were challenging at the outset of the AP, with delivery of appropriate supplies often lagging behind provider preparation and training.*
- *Ordering supplies was seen as complicated and bureaucratic. Facilities were sometimes forced to directly purchase drugs and supplies with the approval of their boards; sometimes drugs were delivered close to expiration dates, forcing staff to trade stock with facilities that could use the drugs immediately.*
- *Capacity building through provider training was regarded as a highly successful collaboration with partners; mentoring was noted to require further strengthening.*

SUPPLIES AND LOGISTICS

Site expansion implies adaptation of and change to existing logistics systems to ensure consistent supply of HIV test kits, medications, obstetric supplies, family planning commodities, and other supplies. Respondents were asked whether logistics plans had been implemented at all levels of the health system to respond to the needs of the AP.

According to respondents at both national and regional levels, supply chain management was an issue at the outset of the AP, and supply gaps persisted in some regions at the time of the assessment. The situation improved during the last quarter of 2012, but communication with PFSA was initially challenging. PFSA was unable to respond to requests for HIV test kits and medications, as the expanded sites chosen by RHBs and partners were not included in the annual plan developed by the HIV/AIDS Prevention and Control Office (HAPCO). As this situation became apparent, members of the TWG approached PFSA, discussed the challenges, and facilitated better communication and cooperation.

PFSA has since been included more directly in the process of logistics planning to ensure consistency. PFSA is trying to issue supplies in an integrated manner, using a cluster system in which regional hubs are used to bring supplies closer to facilities. Facilities then collect their supplies, improving the availability of stock at the site.

PFSA and partners trained pharmacists, pharmacy technicians, and nurses to strengthen their ability to forecast commodity needs and anticipate consumption. However, several respondents mentioned that more support and better communication were needed to address ongoing capacity gaps at the woreda and facility levels. One respondent noted some challenges, including resistance from facilities to complete the forms needed to order supplies and staff turnover, that resulted in fewer staff available to make the requests. In addition, different services within a single facility occasionally competed for supplies,

for example when voluntary counseling and testing claimed a greater need for test kits than PMTCT did. A regional respondent from Gambella stated:

Even though requests are demand-based, responses are late, and some other materials that are not requested will be delivered.

Another respondent from Addis Ababa mentioned similar concerns:

We always face shortages of the program medications and supplies. All of us have responsibilities to make this program successful, but the PFSA people consider it as only our responsibility. When we complain on them, they do not even give us a response. Sometimes we are forced to buy the supplies. But most of the time the medications are not available on the market. So we regularly go for begging other health facilities.

Some sites reported shortages of essential commodities and drugs, especially those located far from regional distribution hubs. Several respondents mentioned that early in 2012, HIV test kits were in short supply nationwide, exacerbated by the previous prioritization of point-of-care testing rather than ANC or labor and delivery. Efforts were made to prioritize testing during PMTCT services and for suspected cases of HIV. Equally important, testing and identification of HIV-positive women raised the demand for ARV drugs, especially medication for infants (nevirapine), and two national respondents mentioned that some locations experienced shortages. The limited supplies meant that in some cases, trained staff were not able to offer services. Also, in areas with low demand for services, it was difficult to know what supplies to make available so that resources would be appropriately allocated and not wasted.

Three key informants had no criticism of the logistics system; the remainder said it was "not satisfactory" or was "weak" and cited shortages of HIV test kits, shortages of ARV drugs, and delayed delivery of dried blood spot kits for infants.

Another three respondents concurred that the system was improving, "off and on." In the case of Oromia, providers were trained as part of the first phase of expansion, but their facilities were not provided with necessary supplies until almost the end of the AP period. At least one regional respondent complained that the budget was not flexible enough to address some of the shortages; funds were allocated for staff training and community mobilization, but excess funds could not be re-allocated for equipment. Another noted that "maternal and child health (MCH) and PMTCT act differently in our region," and it was a problem to coordinate the supplies necessary to integrate the activities.

At the facility level, respondents were nearly evenly divided in their opinions about consistent availability of supplies. Half of the respondents said there were no concerns about supplies (51% of directors and 48% of managers; data not shown). However, similar proportions (42% of directors and 50% of managers) reported that there were issues with consistent supply of commodities and medications; Somali was the only region where no one mentioned this as a problem. Several themes emerged during questioning, including that the process of ordering supplies was complicated, with multiple approvals required; facilities occasionally used their own mechanisms for obtaining supplies through direct procurement, once a request was approved by the local board; stock outs were not infrequent; and suppliers often delivered medications with imminent expiration dates. One manager from Tigray mentioned that when the latter occurred, the supplies were redistributed to other nearby facilities so the products could be used before they expired.

When asked what happens if the facility runs out of adult or pediatric ARV drugs, 41% of providers said they borrow from a nearby hospital, health center, or nongovernmental organization (data not shown). One in three providers said they refer clients elsewhere.

CAPACITY BUILDING

Respondents were asked to comment on the status of mentorship, training, and supervision among health care providers, and whether staff turnover or re-assignment had been challenging during the implementation of the AP.

Overall, the consensus among national and regional respondents was that capacity building to support the AP was proceeding smoothly. The regions coordinated all technical activities and managed health care worker resources, and regional partners made necessary resources available. This arrangement worked well, even in cases where partners were asked to extend training to sites not included in their original plans. Most partners used materials prepared at the national level. Most training at the regional level was carried out by the Integrated Pharmaceutical Logistics System, supplemented by on-the-job training by clinical mentors. In some cases, partners conducted their own separate trainings.

Several respondents noted that mentoring (both clinical and M&E mentoring by partners and the MOH) needed strengthening, which is expected to be addressed in the next phase of the eMTCT strategy. Mentoring is meant to be provided by regional health staff for most facilities, with additional mentoring done by partners in new sites. Hospital staff members do some mentoring for health centers, and some health centers mentor other facilities. However, in the words of one informant, "it is not that much strong." Local mentoring needs logistical support, such as transport and more manpower, so it remains weak. Partners were occasionally limited by the resources they had available. Regular mentoring was easier to undertake in cities or smaller regions such as Gambella. Other regions, such as Oromia and Tigray, made an effort to undertake the mentoring themselves, often by providing more supervision.

Several models of mentorship and supervision were identified by the regional experts. Two-thirds said that clinical mentorship was provided by both partners and RHBs, on schedules varying from weekly or monthly to quarterly. It appears that different staff from the RHB may visit facilities throughout the year, but they are expected to observe all services during a visit, regardless of their area of expertise. In the words of one regional focal person:

The only way to follow up PMTCT is the regional bureau itself. The other mechanism in place is any bureau member who is out for any woreda see all the health activities undertaken in that place, though there is some gap as that is not the right department to see that specific activity.

This cross-service monitoring may be beneficial, particularly when considering the linkages among various services offering PMTCT. As an informant in Somali noted:

We also jointly benefited the strengthening of the ANC system, family planning service, and HCT because to monitor the PMTCT service we jointly monitor together with the other services.

In general, the RHBs indicated that they made independent efforts to visit facilities to support the AP rollout alone, adhering to their usual monitoring schedule. One person mentioned that their visits were specifically focused on addressing PMTCT issues; another reported that lack of transport hindered opportunities for monitoring and supervision.

Staff training, much of it facilitated by partners but also carried out by the MOH, appears to have been a strength of the rollout of the AP; most respondents indicated that training was sufficient and that some staff were re-assigned to meet local needs. One-quarter of regional respondents reported that slow disbursement of funds delayed training; in Oromia, training was suspended because supplies were not provided for those who had been trained. Partners are working with universities to update pre-service training curricula

to support the AP and the future Option B+ rollout, but one TWG respondent complained that this process is taking too long.

Facility directors were evenly split in reporting the percentages of eligible staff trained in PMTCT services, with one-third saying that fewer than 50% had been trained and one-third saying that 50% to 100% had been trained (Table 4). (The remaining one-third reported the number of staff trained, without providing a percentage.)

TABLE 4: Percentage of Health Facility Directors and Service Managers Reporting on Staff Training and Turnover

Report on Staff Training/Turnover	Facility Directors (n=121)	Service Managers (n=119)
	%	%
0-49% of eligible staff are trained	35	22
50-100% of eligible staff are trained	33	34
Staff turnover is not a challenge	47	54
Staff turnover is a challenge	34	25
Staff take more responsibility or are re-assigned regardless of training	12	6

Note: *Multiple responses permitted; only responses given by 10% or more respondents reported.*

As is common in many health systems, turnover and staff re-assignment were cited as challenges by half of the regional respondents. In some cases (particularly in Somali, which has security concerns), incentives were offered to providers to staff some facilities. In other cases, additional training was provided to overcome staffing shortfalls. One respondent noted that his facility has begun to indicate staff training on the clearance documents of staff who leave, so that their next posts will be aware of their skills and capabilities. One TWG respondent said, "It is high time for the MOH to have a Health Manpower Information System." This was in reference to frequent transfers of staff and multiple trainings of staff on the same subject matter. Another observed, "The half-life of a PMTCT provider is a year, most turn over within two years." However, the FMOH already has the HMIS, the Health Information System, and the Human Resource Information system in place; these systems just may not be well known to staff in the regions.

About half of the facility directors and service managers indicated that turnover of PMTCT staff has not been a challenge. Nevertheless, a sizeable minority of local respondents (i.e., one-third of the directors and one-quarter of the service managers) reported that turnover has been an issue for them. This was particularly the case in Oromia, where 35% of respondents mentioned the stress of staff turnover, and in Gambella, where more than half of the facility directors noted it. Just more than 10% of service directors reported that staff take on additional tasks to cover lost staff or may be re-assigned, regardless of whether they have been trained in a particular service area. Other strategies mentioned by small numbers of respondents included the use of mentors to train new staff, informal information sharing between senior staff and new staff, posting of procedures in common areas of the facility to disseminate new information, and provision of on-site orientation when opportunities permit.

EFFECT OF SITE EXPANSION ON SERVICE UTILIZATION

Respondents had little to say about the documented effect of site expansion on service utilization. One respondent noted that having more sites provide HIV testing clearly contributed to increased testing of pregnant women and greatly

improved access to testing services. The same respondent noted, however, that testing did not necessarily result in identifying more HIV-positive women, particularly in areas of low HIV prevalence. However, it is possible that the utilization of ANC and labor and delivery services has increased.

Several respondents indicated that M&E of the implementation of the AP elements was not strong. The AP calls for progress to be monitored using tools developed by the MOH, but TWG respondents mentioned only the monthly data report forms, which were often submitted late or were incomplete. This implied that on-site improvements in data quality were often lacking. When data were submitted by the regions, the TWG would review them and provide guidance to the steering committee. However, this took place at a higher level, and close follow-up and review of on-the-ground performance was lacking. Several TWG respondents questioned what the regions truly know beyond the fact that there are new sites. For example, they may not know about the number of women served, the results of their testing and care, how referrals work, and overall system performance. Additional challenges during the expansion were following up referrals and mapping facilities to access laboratories. Tracking completed referrals was reported as one of the biggest challenges, as facilities may not have had follow-up and feedback systems in place.

When regional respondents were asked how facilities that were the target of the site expansion performed, few cited specific data or documentation to support their observations. Several noted that they achieved their targets for increasing the number of facilities to offer AP services, but they did not cite actual service performance. Others gave general indications of improvement: "the numbers tested, given prophylaxis, or using labor and delivery services increased;" "the number of women using ANC, family planning, and HCT has doubled;" and "there is good progress in ANC and family planning." Three respondents said that performance either had not yet been assessed or was difficult to directly measure. Personal observations by several facility managers noted changes in services:

We are routinely doing maternal health and PMTCT audit. We are doing partner testing when husbands come with their wives during delivery. (Dire Dawa)

Institutional delivery is improved and linkages between health facilities and health posts are strengthened [so we have] decreased loss to follow-up of positive mothers and [those who] gave birth in the facility. (Oromia)

Among facility directors and service managers, approximately one-third noted that increasing the number of sites that offer ANC and PMTCT services increased utilization and made it easier for clients to access multiple services (Table 5). Forty-one percent of managers and 17% of directors said that the expansion increased testing of pregnant women and use of institutional delivery. Approximately one-fifth said it increased community awareness of the services, possibly because of better coordination with HEWs and traditional birth attendants. Just more than 10% thought that people were more willing to be tested, given that PMTCT services were now available.

Both male and female community members who participated in the FGDs in all four regions welcomed the expansion of services and perceived that service quality and accessibility had improved. Nevertheless, both male and female community members cited obstacles to the use of health services. These included lack of transportation, discrimination, and shortages of HIV tests and midwifery kits. Also cited were cultural preferences for delivering at home, normative beliefs among women that it is their responsibility to keep their children free from HIV, general suspicion about HIV testing, and lack of support for pregnant women.

Improvement of referral systems between higher-level and lower-level facilities was an important element of service strengthening that

some facilities undertook. However, follow-up of referrals to ensure that they had been completed and that the desired services had been received remained weak. Although more than 90% of the directors and service managers indicated that they made referrals, only about one-third used a paper-based system that has some potential for tracking completed referrals (Table 6). Less than one-quarter of respondents indicated that they followed up referrals using staff members, HEWs, or phone contacts. More than one-third said they did not receive feedback and had no feedback system in place.

Referring to the challenges faced in implementing referrals, one respondent in Addis Ababa said:

We refer to Yekatit 12 Hospital by filling the necessary information in the referral slip. But there is no feedback we received. We have monthly meetings with health extension workers and there is progress in tracing loss to follow-up. We have [a] good referral network with health extension workers and we tried to solve the gaps we faced in hospitals.

TABLE 5: Percentage of Health Facility Directors and Service Managers Reporting Effect of Site Expansion and Service Strengthening on ANC and PMTCT Utilization

Effect on ANC and PMTCT Utilization	Facility Directors (n=121) %	Service Managers (n=119) %
Increased utilization, easier to access multiple services	36	32
Increased testing of pregnant women and use of skilled delivery services	17	41
Increased community awareness	17	22
Increased testing knowing PMTCT services are available	11	13

Note: *Multiple responses permitted; only responses given by 10% or more respondents reported.*

Abbreviations: *ANC = antenatal care; PMTCT = prevention of mother-to-child transmission.*

TABLE 6: Percentage of Health Facility Directors and Service Managers Reporting Use of External Referrals and Use of Standard Referral Practices

Referral Practice	Facility Directors (n=121) %	Service Managers (n=119) %
Makes referrals, either up or down	93	93
Uses paper referral forms	33	29
Follows up referrals by telephone	9	22
Follows up referrals using focal person or staff member	22	15
Health extension workers conduct client follow-up	19	18
Has no formal system for incomplete referrals	26	16
Does not receive feedback/has no system for feedback	36	36

Note: *Multiple responses permitted; only responses given by 10% or more respondents reported.*

Demand Creation

KEY FINDINGS

- *The efforts of the HDA to raise community awareness was widely acknowledged to generate awareness of key AP elements.*
- *Challenges to informing communities about the improved services were identified. These included poor local TV coverage in large regions, lack of access to TV by poor households, insufficient posters and leaflets for distribution, a limited cascade of activities from woredas and kebeles, and limited budgets.*

Demand creation for PMTCT services is a cornerstone of the AP. Demand creation activities were anticipated to engage members of the HDA and Women's Coalition, as well as HEWs. Members of these groups were to promote ANC, couples' counseling and testing, institutional delivery, male partner testing, and community conversations about these topics.

Respondents were asked to identify what demand creation activities had been put in place to inform communities of the new services, and in what ways the HDA had been capacitated to perform their tasks. The HDA was only implemented recently, and the rollout of implementation is still in progress. However, respondents were unanimous in noting the efforts of the HDA in raising community awareness in the regions in which it functions. Partners such as Johns Hopkins University's Center for Communication Programs and AED (now FHI 360), with comparative advantages in communication efforts, were directed by the FMOH to support demand creation at the FMOH and RHB levels. These partners provided support in crafting messages and communication materials to raise awareness at the local level. One respondent from the TWG said:

From what we hear the HDA is stressing women to attend ANC, attend institutional delivery. That was [the] direction and line of demand creation, but we need to review what has happened.

Several TWG respondents, however, mentioned that the HDA had not been introduced with the same strength in all regions. For example, the HDA had not been started in Gambella or Somali at the time of this study. Regions are still in the process of clarifying how to generate and use these organized community groups. Tigray and Amhara, as well as Oromia and the Southern Nations, Nationalities and People's Region, were named as regions where the HDA efforts have gone well. Community mobilization activities already in place, such as community conversations and activities facilitated by partners in collaboration with the local government, were also important in efforts to raise awareness.

Other modalities were also used for community engagement. One person mentioned that HEWs undertook house-to-house contacts and community conversations as part of their mandate to generate demand for services, some of which were linked to PMTCT. The HEWs also liaised with religious leaders to advocate for ANC visits, institutional delivery, and infant follow-up among their congregations. Regions also used media, targeted advertisements, panel discussions, and Q&A sessions in addition to the HDA efforts.

HDA members who participated in FGDs reported that people are well informed about prevention and the importance of skilled delivery, particularly for HIV-infected women. They said that many households report that members have already been tested. However, one TWG informant mentioned that he was not sure what data has been generated to document HDA input, and another pointed out that it was one thing to raise awareness and another to see true behavior change, suggesting that the outcomes of raising awareness should be measured to determine effect.

Change seems to be taking place in Tigray, where several people mentioned that more women are coming to institutions for delivery and care but that the facilities don't have the capacity to accommodate all the mothers. They said that hospitals are pressed to adequately serve the increased loads. As noted above, these large client loads also contribute to shortages of test kits and other commodities.

Several people mentioned that the information, education, and communication sub-group of the TWG was not meeting regularly and had inconsistent member participation. Although the TWG initially met regularly to develop materials and share them through TV, radio, and other venues, the group's efforts waned. Resources were also an issue, as partners had resources and timelines that did not align with the AP timeline.

Regional respondents cited several demand creation efforts that were undertaken in their respective regions. Half mentioned the work of the HDA and HEWs in informing the community of the improved PMTCT services. Several other groups were mentioned but did not seem to play a large role in most communities: the Women's Development Army, the Women's Affairs Office, the Women's Coalition, and mother-to-mother and treatment adherence groups at health facilities. One regional respondent mentioned variation in the functioning of mother-to-mother support groups (i.e., HIV-positive women who meet regularly to support each other through pregnancy, delivery, and the post-partum period), suggesting that many are passive organizations that offer a class early in ANC with no resources to meet pregnant women outside the facility or to help trace women who drop out of care.

Nearly half of the regional respondents also mentioned the use of local media, including print, radio, and TV, for creating demand. A documentary about PMTCT was aired on ETV, and several programs about the Millennium Development Goals also aired weekly. At least one RHB had a regular radio program, plus it ran spot messages on key topics on holidays. Additional formats included panel discussions and call-in programs with a gynecologist. Other respondents reported that the head of the RHB had been interviewed by the local newspaper. Other communication avenues mentioned included banners, billboards in regional languages, the distribution of 4,000 t-shirts for male partners to encourage HIV testing, and a community walk with the local mayor.

Several regional respondents mentioned challenges in "getting the message out." These challenges included poor coverage of local TV stations in large regions and lack of access by poor households, insufficient posters and leaflets available for distribution, lack of a cascade of activities from woredas to kebeles, and limited budgets.

Health facilities capitalized on local resources and established linkages to promote demand for the PMTCT and ANC services. More than half of the directors and service managers noted that their health centers worked with community health workers, HEWs, and members of the HDA to encourage them to make referrals to the health facilities when they encountered pregnant women in the community (Table 7). In addition, many reported using regular health talks to inform attendees of the services. One in four respondents also reported building on a long tradition of community conversations within their kebeles.

TABLE 7: Percentage of Health Facility Directors and Service Managers Reporting Demand Creation Activities and Ability to Document Increased Use of ANC, MNCH, and PMTCT Services

Demand Creation and Documentation of Increased Services	Facility Directors (n=121) %	Service Managers (n=119) %
Work with CHWs, HEWs, HDA to make referrals to the facility during home visits and education outreach activities	54	52
Daily or weekly education meetings at outpatient department or health facility	36	46
Work with kebeles to use community meetings and community conversations	22	26
Team with local organizations, religious leaders, schools, and others for community outreach	22	10
Able to document but no explanation provided how it is done	55	58
Compare number of daily clients now with number before demand creation activities	26	18
Unable to know if change is due to demand creation activities	11	13

Note: *Multiple responses permitted; only responses given by 10% or more respondents reported.*

Abbreviations: *ANC = antenatal care; CHW = community health worker; HDA = Health Development Army; HEW = health extension worker; MNCH = maternal, newborn, and child health; PMTCT = prevention of mother-to-child transmission.*

More than half of the facility respondents also said they could document increased service utilization in response to demand creation activities; however, they did not provide specific explanations about how they did this, possibly because of inadequate probing by the interviewer. One-quarter of the directors compared the size of their client loads before and after the activities were introduced. Just more than 10% indicated that they did not know if variation in client loads was a response to the demand creation efforts.

FGD participants were asked about their experiences in learning about the new emphasis on MNCH and PMTCT services. They mentioned that HDA members, HEWs, and coalition members identified mothers needing services by visiting homes and tracking pregnant women. Awareness among community members also increased through the hosting of coffee ceremonies that served as discussion forums about services. Mothers who received services were invited to participate in the network, and this helped widen the reach.

FGD participants in all regions were familiar with PMTCT services. Most noted the importance of HIV testing for pregnant women, followed by the provision of follow-up counseling and prophylaxis for women testing positive for HIV. There was broad awareness and support in all the regions for ANC, institutional deliveries, PMTCT, partner testing, and ART initiation for people testing positive. According to one of the male community participants in Somali:

There is great awareness in the Jijiga community… People tell me about others who are acting to

use the screening service. Previously there was no good awareness, but now more than 95% have been made aware by the religious leaders' information dissemination.

And from a male community participant in Gambella:

In regard to PMTCT, previously the villagers had a feeling that it is totally impossible to have an HIV-free baby from infected mother. Even when they heard it is possible, it was hard to believe, but they saw one mother who is HIV-positive have a healthy baby after careful follow-up and treatment at Abobo… Everyone now accepts the idea of PMTCT and the services available at the health center at Abobo.

Male FGD participants mentioned that media played an important role in raising awareness of PMTCT. Only one of the participants from Somali said that people in his locality were not aware of PMTCT services.

The following messages related to MCH services were among those mentioned by both male and female community members during FGDs:

- No mother should die while giving life.
- Follow vaccines for the child.
- Attend follow-up during pregnancy.
- All women should deliver at health centers.
- All HIV-positive mothers should consult health care providers before and during pregnancy.
- Mothers should exclusively breastfeed for the first six months.
- All mothers should test for HIV.
- Use condoms.

There was little concern among FGD participants about confidential testing for HIV at the PMTCT sites. Only one respondent described improved privacy in the rooms where testing was conducted, the additional time allocated for counseling, and the fact that a client's contact information (i.e., address) was only shared with responsible staff.

Quality Improvement, Resource Allocation, and Monitoring and Evaluation

KEY FINDINGS

- *The quality improvement process initiated under the AP will be a priority under the follow-on eMTCT plan.*
- *During resource allocation, instructions differed as to the responsibility for budgeting at different levels of the health system. Responses were mixed as to whether available resources were sufficient for the tasks undertaken during implementation of the AP.*
- *M&E of the AP has been challenging, as the existing HMIS did not collect all the data needed to monitor the plan. In addition, the introduction of a new monitoring system for PMTCT was delayed, resulting in the submission of incomplete and inconsistent data.*

QUALITY IMPROVEMENT

Processes for continuous quality improvement (CQI) were planned as part of the AP to focus on missed opportunities for HCT and loss to follow-up among women testing positive for HIV. However, because of limited resources and lack of agreement about what standard of CQI to introduce, activities focused on CQI were not implemented widely at the regional level beyond several pilot sites.

A team composed of members of the National PMTCT TWG undertook preparatory work to see what partners were doing to address CQI in ANC and other platforms for PMTCT. This group identified several tools and developed a CQI plan piloted in six sites in three regions. A tool was finalized and endorsed by the MOH. The next step will be to deliver materials to the regions and conduct national trainings that will be cascaded to health facilities.

One respondent mentioned that instead of making CQI a prescriptive process, with some fixed number of items that need to be accounted for at each facility, it may be more appropriate to tailor the efforts to the needs of each facility. The MOH decided to have a tool that addressed quality but also encouraged ownership among facilities to look at their services and support internal audits.

Regional respondents had little to say about CQI activities during the past year but were happy to offer suggestions for future efforts. These included ensuring that facilities were equipped with fully trained staff, particularly on the requirements of Option B+, and ensuring that the necessary logistics systems were in place. Supportive supervision was seen as an important element of CQI, but several respondents noted the need for vehicles and fuel budgets in order to plan an adequate supervision schedule.

Several respondents suggested the need to conduct audits to determine the current quality of services and identify ways to improve them, to assess the availability and functionality of equipment, and to do "consumer surveys" to ascertain the perspectives of health service users. They also suggested that such audits should assess the availability and functionality of equipment.

Most community member FGD participants had positive views of the health services, although many were still able to recall disrespectful providers, inadequate bed space, or clients having to pay out of pocket for supplies that should have been available free of charge. Several of the regional experts noted the need to be continually aware of the responsibility to meet public needs in a professional and high-quality manner.

RESOURCE ALLOCATION

National respondents reported that it was initially communicated to the regions that they needed to develop their own implementation plans and cost them. The regions sent costed plans to the MOH, and the MOH disbursed resources to meet their requests. However, the intention was that the regions would include the contributions of implementing partners in the budget plans and that the regions would cover budget gaps. This guidance clarification was transmitted late, requiring that regions re-budget to determine where resource gaps existed. Most mentioned the challenge in covering the cost of mentoring; there was a consensus that much could be covered by supportive supervision.

Most TWG respondents thought there were adequate financial resources for the AP, but they also cited challenges in aligning resources. For example, the GOE had its own resources, and partners had theirs. The government did not have sufficient resources to perform mentoring and provide enough vehicles, fuel allowances, and personnel. Thus, partners were asked to perform or provide them, but it was also costly for them.

One respondent suggested that less expensive options should have been considered more carefully, including developing local coaches from among facility personnel, in order to avoid the large transport costs. A system could be developed whereby a few coaches make a circuit among local sites in nearby catchment areas, instead of requiring travel from more distant regional offices.

As might be expected, when asked whether sufficient resources were allocated to implement the AP, regional experts gave a variety of often-conflicting responses. Three said that resources were adequate and that problems related to funding were limited. One-third of the respondents reported that there was no special budget allocated for the AP, other than what partners provided in training and technical support. Two others said that resources were allocated but that they were not sufficient. Yet others cited delays in receiving funds, which hampered their efforts; in one region, it was mentioned that their funds arrived nine months into the year. These inconsistent responses indicated a lack of uniform understanding among the individuals interviewed about the budget processes for the AP.

When asked how they would suggest re-allocating funds, informants had a diverse list of suggestions:

- Provide technical assistance to support implementation at the regional level.
- Ensure flexibility so that unexpended funds for one line item can be re-allocated to another.
- Decentralize the supply and logistics system for PFSA, and improve the capacity at PFSA hubs.
- Improve the distribution of supplies and commodities, including dried blood spot kits.
- Integrate PMTCT with other health services.
- Allocate funds for demand creation activities.
- Allocate funds for quality improvement efforts.
- Rationalize funding, taking into account HIV prevalence in the region.

During the IDIs, facility directors were asked whether they thought sufficient resources had been allocated to expand and improve PMTCT services. More than two-thirds thought resources were insufficient. Materials and staff were the domains most frequently cited as being under-resourced. Nearly half of the directors mentioned that they needed supplies, including infection prevention equipment and consumables, neonatal resuscitation instruments, HIV test kits, and medications. One-quarter of the directors referred to the shortage of trained staff.

In the words of a respondent from Addis Ababa:

Many health centers are constructed, but they are not giving delivery service due to lack of toilet and water service. Due to this, many mothers are forced to deliver at home. When the new health center open[s], equipping the health center has to be considered.

The respondent continued:

We have only one delivery bed. We have no autoclave..to sterilize instruments. We have also a referral problem. We have the referral linkage hospital that is assigned from the government. When we refer clients..they wouldn't accept them... There is communication gap [as] they said this client is not [in] their catchment. ...We need training on vacuum and forceps delivery to shorten third-stage labor. The people from the health bureau should come and visit what we are doing and try to solve our problem. They shouldn't focus only on the report we gave them.

MONITORING AND EVALUATION

Good quality service data are essential to understand the performance of the AP. For many sites, the introduction of the new services required recording new data in new formats. Respondents were asked to discuss the introduction of follow-up registers at health facilities. They were also asked to discuss the efforts that were required to link the registers with existing data systems and report formats, aligned with MOH and HAPCO systems.

All national-level respondents indicated that M&E for the AP has been a challenge. The existing HMIS did not have sufficient indicators to follow the AP performance. The TWG and partners were instructed to use new formats for the AP indicators in addition to the HMIS, with a special report with its own indicators. Initially, reporting was required on the 26 indicators included in the published AP, but these were not in line with existing reporting formats, and implementation of the reporting requirements was weak. The 26 indicators were subsequently reduced to 16 indicators, but it was still difficult for lower-level health facilities to report on them. For some, the issue was that the facilities were not given a dedicated register, so they had to report the data in handwriting. Others didn't understand why they had to report on the new indicators. In some cases, there was a genuine lack of data because the facilities did not have HIV-positive PMTCT clients; thus, there was nothing to report on. Facilities were encouraged to look at other service registers such as those used in ANC and ART to obtain relevant data, but they often found it difficult to do so. With increased communication with the RHBs and more supportive supervision, some reporting improved.

Several respondents underscored the point that data linkages were very difficult, given that in principle PMTCT is a process that starts before a woman even becomes pregnant. In the past, it had been very difficult to trace partner testing during labor and delivery, follow up HIV-positive women or exposed infants, and track infant feeding practices, among other related activities. The TWG decided that this needed to be rectified. However, in view of the current HMIS being cascaded out to facilities, there were questions about how to include relevant indicators.

One TWG respondent indicated that when the MOH sent report forms to the regions, they were accompanied only by a cover letter (i.e., not by full instructions on how to complete the forms). Regions complained that they did not understand what they were being asked to provide, that it was a burden to complete the additional forms, and in some cases that they didn't have the data necessary to complete them.

The decision to move to Option B+ afforded the opportunity to identify gaps and challenges, see what indicators need to be captured, and consider how to simplify the system. The first topic to be addressed was infant follow-up, which has been piloted and rolled out to regions. Three options are under consideration to improve data recording: placing pre-ART and ART registers in the MNCH units (which is where ANC services are provided); including new indicators relevant to Option B+ in existing registers; and developing a new, dedicated register. The newly developed register, if accepted, should allow better tracking of linkages across services and of the effect that PMTCT efforts have on mothers and children.

The use of a longitudinal register is expected to address some of the basic problems that make it challenging to evaluate impact. Currently, data are collected cross-sectionally, so it is possible to know how many women have started on ART or how many infants have been tested. However, cohort data are lacking, so it is impossible to know how many mothers gave birth in 2012; how many of their babies were tested at 6 weeks, 18 months, or 24 months; and the positivity rate. There is little information about the follow-up of women who don't give birth in facilities, and it is even more difficult to follow babies and to know the number of children who receive treatment.

The M&E of the AP appears to have been a challenge in several regions. Regional respondents remarked that they had no special registers or assessment tools and that they simply continued to use their ANC registers. Many noted that the M&E process was implemented very slowly and with delays. Only three respondents specifically said they had an HMIS register for PMTCT. In at least one region, facility reports were often late because of lack of telephone access. Differing views were obtained regarding efforts to align the new AP reporting requirements with existing monitoring systems. Respondents alternately said "all facilities use the MOH data system and report format, so there is no need to align;" "a parallel report was used for the AP;" and "little effort was made to align the reports."

The majority of facility-based respondents reported no concerns with the quality of data they maintained and submitted to higher levels of the health system (Table 8). Only 16% of directors and 13% of service managers thought there were problems with consistency and completeness of data. The primary method of verification cited was checking reports against service registers, often as a team.

TABLE 8: Percentage of Health Facility Directors and Service Managers Reporting Specific Opinions on Data Quality and Assurance

Opinions on Data Quality and Assurance	Facility Directors (n=121) %	Service Managers (n=119) %
No concerns with data quality mentioned	76	87
Problem with consistency and completeness	16	13
Performance monitoring team, HMIS, and director meet to check data against service register	41	21
Performance monitoring team, HMIS, and director meet monthly to check data against service register	20	15
Check report against register before submitting	6	34

Abbreviation: *HMIS = health management information system.*

Findings of Site Assessments

The data from the site assessments should be interpreted with caution and may not be generalizable to other facilities in the study regions or in other regions, given the purposive selection of sites included in the assessment.

AVAILABILITY OF SERVICES AND SERVICE UTILIZATION

Table 9 presents data on the utilization of ANC and labor and delivery services. In urban areas, one-third of sites reported that more than 75% of pregnant women in their jurisdiction attend at least one ANC visit; about one-fourth of the agrarian sites and only one-sixth of the pastoral sites reported this. On average, women make 3.1 visits for ANC, with agrarian and pastoral sites reporting slightly fewer visits. Half of the urban sites reported that more than 50% of women attending ANC return to deliver at the facility. Only 20% of the agrarian sites and just more than one-third of the facilities in pastoral regions reported such high return rates. Half of the urban facilities, 45% of the agrarian sites, and 33% of the pastoral sites reported that the majority of women attending ANC return for well-baby care. Slightly more than half of the urban and pastoral sites have mechanisms in place to track women who don't return for delivery; more than 75% of the agrarian facilities have these mechanisms in place.

Data presented in Table 10 show that virtually all facilities offer HCT as an element of ANC. Slightly fewer offer sexually transmitted infection (STI) management in ANC (88% in agrarian regions and 93% in pastoral regions). Only about one-third of the facilities currently offer chronic HIV care (pre-ART/ART) for mothers.

Despite not offering HIV clinical care for mothers during ANC, several facilities are able to provide ARV prophylaxis as part of the package of PMTCT services, perhaps through coordination with other departments in the health center (Table 11, first panel). Less than two-thirds of the facilities in urban areas are able to perform HIV testing for infants, and this drops to only one-quarter in the agrarian and pastoral sites.

On average, about three-quarters of facilities reported that staff are aware of national guidelines related to the AP. Slightly more (about 80%) reported that staff know about ARV provision in PMTCT, and nearly all are aware of guidelines for managing STIs.

AVAILABILITY OF SUPPLIES

Many key informants at both national and regional levels cited the challenges of coordinating the demands of the AP and expanded services with the capacity of the national logistics system. Table 12 highlights the constraints faced by health facilities in offering ANC and PMTCT services. The rows presented in bold text show the responses if a facility reported an outage of any one of the individual items listed in each category, in response to the question "How often do you run out of the following ANC supplies each month? Is it never/rarely (i.e., one day per month), sometimes (less than two weeks per month), or often (more than two weeks per month)?" Results in Table 12 show that 82% of the sites in pastoral regions and 63% of those in urban areas mentioned running out of at least one key MCH medication or vitamin often. Vaccines were more secure, although one-fifth of urban sites reported often running out of these. Shortfalls of syphilis treatments were reported by one-third of the sites in pastoral areas. More than one-third of the sites in all regions reported often running out of adult and infant ART medications.

During the site assessment, the interview team verified the supply of key ANC and PMTCT supplies and medications. These findings are shown in Table 13. From 3% to 63% of facilities were out

TABLE 9: Percentage of Facilities with Utilization of ANC and Labor and Delivery Services

Utilization of Services	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
Percentage of pregnant women in jurisdiction attending ANC at least once during pregnancy				
Less than 25%	17	22	15	19
25%–50%	9	28	18	21
50%–75%	34	27	52	34
More than 75%	37	23	15	25
Number of ANC visits made per pregnant woman				
Mean (range)	3.3 (1–4)	3.1 (1–9)	2.7 (2–4)	3.1 (1–9)
Percentage of women attending ANC who return to same facility to deliver				
Less than 10%	3	28	15	18
10%–25%	9	25	37	23
25%–50%	26	23	11	21
More than 50%	49	20	37	32
No labor and delivery services	14	3	0	6
Facility has a mechanism to track women who do not return for delivery	57	77	52	66
Percentage of women attending ANC who return to same facility for well-baby care				
Less than 25%	6	8	15	9
25%–50%	9	7	4	7
50%–75%	23	40	44	36
More than 75%	51	45	33	44

Note: *Percentages may not add to 100 because of missing data.*

Abbreviation: *ANC = antenatal care.*

TABLE 10: Percentage of Facilities Offering Additional Services during ANC

Additional Services	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
HIV counseling & testing	100	98	100	99
STI management	100	88	93	93
Chronic HIV care (pre-ART/ART) for mothers	69	58	59	61

Abbreviations: ART = antiretroviral therapy; STI =sexually transmitted Infection.

TABLE 11: Percentage of Facilities Offering PMTCT Services and Being Aware of National Service Guidelines

Services and Guidelines	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
PMTCT services offered at facility				
HIV counseling & testing	100	98	100	99
ARV prophylaxis	77	60	85	70
Dried blood spot; PCR for infants	60	27	26	36
Facility staff aware of national guidelines on the following:				
Accelerated Plan for PMTCT	80	72	85	77
PMTCT ARV provision	91	77	85	83
Management of STIs	97	93	100	96

Abbreviations: *ARV = antiretroviral; PCR = polymerase chain reaction; PMTCT = prevention of mother-to-child transmission; STI = sexually transmitted infection.*

TABLE 12: Percentage of Facilities that "Often" Run Out of Supplies within a Month

Supplies	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
Any MCH medications or vitamins	***63***	***38***	***82***	***55***
Iron	23	2	22	12
Folic acid	23	5	22	14
Multivitamins	23	10	44	21
Vitamin A	9	7	48	16
Mebendazle	14	8	19	12
Malaria prophylaxis	40	23	26	29
Tetanus toxoid	29	5	11	13
Vaccines	***20***	***3***	***11***	***10***
Syphilis treatments	***14***	***7***	***30***	***14***
Any adult ART	***34***	***42***	***41***	***39***
Adult AZT	31	38	30	34
3TC	26	37	26	31
Nevirapine	26	37	15	29
Any infant ART	***37***	***40***	***26***	***36***
AZT syrup	31	40	26	34
Nevirapine syrup	29	33	19	29

Abbreviations: *ART = antiretroviral treatment; AZT = azidothymidine; MCH = maternal and child health.*

TABLE 13: Percentage of Facilities with Supply Shortages on Day of Assessment

Supplies	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
ANC/MCH supplies	11	63	19	39
Syphilis supplies	11	27	11	19
Adult ARV supplies	11	13	11	12
Infant ARV supplies	3	17	0	9
HIV testing supplies	17	22	19	20

Abbreviations: *ANC = antenatal care; ARV = antiretroviral; MCH = maternal and child health.*

TABLE 14: HIV Counseling and Testing for PMTCT

Type of HCT	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
HCT is offered routinely to women attending ANC services	97	95	100	97
HCT for PMTCT takes place with:				
All testing and confirmations done on site during ANC/MCH	74	88	85	83
Preliminary tests done on site (during ANC/MCH); confirmations sent to the lab	20	12	11	14
All blood drawn and testing carried out in other lab	3	0	4	2
All testing and confirmations done at designated VCT unit	3	0	0	1

Abbreviations: *ANC = antenatal care; HCT = HIV counseling and testing; MCH = maternal and child health; VCT = voluntary counseling and testing.*

of some essential medications and supplies on the day of the assessment (during the last week of December 2012 through the second week of January 2013). Twenty percent of the facilities lacked HIV testing supplies, and more than 10% lacked adult ARV supplies.

HIV TESTING AND INFANT CARE

HIV testing during ANC has clearly become the established norm in Ethiopia. Virtually all sites routinely offered HCT to women attending ANC, with the majority conducting all tests and confirmations within ANC/MCH services. Twenty percent or fewer of the sites conducted initial testing in ANC/MCH and sent confirmatory tests to a laboratory.

Facilities were less well prepared to offer services for exposed infants. Overall, about half to two-thirds of the facilities provided ARV syrup, cotrimoxazole, and vitamin A (Table 15). Fewer offered clinical management of pediatric HIV, including about half of the urban and pastoral sites and only one-third of the agrarian locations. Half to two-thirds of the urban sites performed early infant diagnosis, dried blood spot sampling, and 18-month confirmation; only about one in four agrarian sites did so, and pastoral sites were equally weak in early infant diagnosis.

TABLE 15: Percentage of Facilities Providing Services to Exposed Infants

Services	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
Facility provides the following to exposed infants born to HIV-positive mothers:				
ARV syrup for PMTCT	71	58	70	65
Cotrimoxazole prophylaxis	69	53	63	60
Vitamin A	71	78	41	68
Facility provides:				
Other clinical management of pediatric HIV	51	33	48	42
Early infant diagnosis	66	23	26	36
Dried blood spot sampling	57	27	48	40
18-month confirmation	63	28	41	41
Type of test used for 18-month confirmation	(n=22)	(n=17)	(n=11)	(n=50)
Dried blood spot; PCR	66	65	45	60
Rapid antibody test	36	35	55	40

Abbreviations: *ARV = antiretroviral; PCR = polymerase chain reaction; PMTCT = prevention of mother-to-child transmission.*

STAFF PREPAREDNESS

Respondents reported 0 to 19 people trained on PMTCT/MCH services at each facility (Table 16). However, it is difficult to draw conclusions about the number of staff trained in comprehensive PMTCT/MCH services in view of this finding, and without referring to the needs of individual facilities. The AP calls for a minimum of four staff to be trained to support the relevant activities at the health center level. About three-quarters of the urban sites met this criterium with regards to staff trained in HIV counseling, HIV testing, and management of STIs. Approximately two-thirds of the agrarian facilities achieved this benchmark for the same skills, as did approximately 60% of the pastoral facilities. All sites reported fewer PMTCT staff trained to treat opportunistic infections and manage HIV/AIDS. Only 32% of agrarian, 41% of pastoral, and 60% of urban sites reported having a full complement of trained personnel, although staff in other services in the facility may have had such training. Nearly all sites reported that ANC/MCH staff were the principle agents conducting PMTCT counseling, although half the sites noted that dedicated PMTCT counselors also played an important role.

There appears to be a need to establish mechanisms to keep staff up to date with policies and procedures, as only 60% of urban and agrarian facilities and 30% of the pastoral sites had a system in place. Revised supervision strategies may have played a role, as 74% of the urban sites and 83% of the agrarian sites had their HCT and MTCT services supervised at the regional level. However, the pastoral sites remained disadvantaged, with fewer than one-third having such supervision. Indeed, less than 10% of pastoral sites even had a supervisor designated for HCT and PMTCT services.

INDICATORS RECORDED

Finally, we sought to determine whether facilities captured data related to the indicators included in the AP. Virtually all facilities recorded the number of women in their catchment areas who attended ANC, and they maintained records of the number of ANC visits completed (Table 17). On average, about half the sites recorded the number of ANC clients who were already on ART when they became pregnant. About two-thirds of the facilities recorded PMTCT clients referred to other facilities for delivery; about half tracked the number who did not return for delivery, with the greatest drop in urban sites.

Nearly all facilities recorded the number of ANC clients tested for HIV; however, only 55% to 86% of sites recorded the number of women who tested positive. Most sites also recorded the number of women tested during labor and delivery; again, far fewer recorded the women's test results. An explanation for these discrepancies was not investigated during this study. It may be that the test results were recorded in an HCT or ART register but not in the ANC or labor and delivery register. Alternatively, a woman's status could have been recorded in her individual file but not in a register, although this would have made monthly and quarterly reporting challenging. Finally, on average, no more than half the sites in any location recorded the number of clients provided with ARV drugs at key points during pregnancy, delivery, or infant dosing.

TABLE 16: Percentage of Facilities with Staff Preparedness for Providing HCT/PMTCT

Preparedness Parameters	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
Number of staff trained on comprehensive PMTCT/MCH package				
Mean (Range)	***5.1 (1-19)***	***3.3 (0-8)***	***2.8 (0-7)***	***3.7 (0-19)***
At least four staff trained on:				
HIV counseling	77	68	56	68
HIV testing	77	72	59	70
Infant feeding counseling	54	63	48	57
Treatment of OIs; management of HIV/AIDS	60	32	41	42
Management of STIs	71	67	59	66
Staff type that conducts counseling for PMTCT and HCT				
ANC/MCH staff	97	97	100	98
Dedicated PMTCT counselors	46	65	48	56
Lay counselors; community counselors; social workers	23	17	26	20
PLHA	49	17	30	29
HEWs	6	2	0	2
Mothers' groups	6	2	0	2
A formal mechanism in place to provide information updates to staff	60	60	30	53
A formal supervision system in place for HCT/MTCT programs	74	83	30	69
A designated HCT/MTCT supervisor in place	69	70	7	56
Type of designated supervisor/mentor	(n=24)	(n=42)	(n=2)	(n=68)
Any implementing partner	46	60	0	53
MCH department head	13	0	0	4
PMTCT focal person; C&T officer	13	12	2	15
Head or manager of facility	13	17	0	15
Woreda-level staff	4	19	0	13
Zonal-level staff	0	5	0	3
Regional-level staff	21	0	0	7

Note: *Percentages may not add to 100 because of missing data.*

Abbreviations: *ANC = antenatal care; C&T = care and treatment; HCT = HIV counseling and testing; HEW = health extension worker; MCH = maternal and child health; MTCT = mother-to-child transmission; OI = opportunistic infection; PLHA = people living with HIV/AIDS; PMTCT = prevention of mother-to-child transmission; STI = sexually transmitted infection.*

TABLE 17: Percentage of Facilities Recording Indicators

Indicator	Urban (n=35)	Agrarian (n=60)	Pastoral (n=27)	All Facilities (n=122)
	%	%	%	%
Women in the catchment area attending ANC	94	95	100	96
Women having at least 1 ANC visit	97	78	100	89
Women having at least 2 ANC visits	94	90	93	92
Women having at least 4 ANC visits	89	95	70	88
ANC clients who were on ART when they became pregnant	63	40	44	48
PMTCT clients referred to other facilities for delivery	69	72	59	68
PMTCT clients who did not return to facility for delivery	40	50	74	52
ANC clients who were tested for HIV	97	95	100	97
ANC clients who received their HIV results	94	90	100	93
ANC clients who tested positive	86	55	78	69
Women delivering at this facility who were tested for HIV during delivery	86	88	93	89
Women who tested positive at delivery	83	60	74	70
HIV+ clients who were provided ARV drugs at week 14	69	42	44	50
HIV+ clients who were provided ARV drugs at week 28	51	23	44	36
HIV+ clients who were provided ARV drugs at delivery	63	37	52	48
Infants given ARVs within recommended time	69	43	52	52

Abbreviations: *ANC = antenatal care; ART = antiretroviral treatment; PMTCT = prevention of mother-to-child transmission.*

Discussion

FACTORS CONTRIBUTING TO SUCCESS OF THE PLAN

With the implementation of the AP in 2012, tremendous strides have been made in the expansion of ANC and the provision of basic PMTCT services throughout Ethiopia. Hundreds of additional health facilities now offer these services, thousands of health workers have been trained to provide the services, and the community has been engaged to access services for the health of women, children, and families. These successes can be attributed in part to the collaborative approach taken by the GOE, who engaged donors, partners, and regional experts in the planning and implementation process.

Thousands of health care workers received new or refresher training in topics related to the goals of the AP. This contributed to a geographic expansion of these essential services and increased availability and accessibility for women in need. Within the context of the overarching planning and support of the MOH, several federal experts and one-quarter of the regional experts promoted the commitment of trained health staff as the key to success in the implementation of the AP.

Several other respondents cited the contribution of HEWs in sensitizing and engaging communities and raising awareness of ANC and PMTCT services. HEWs fortified their focus on identifying pregnant women and referring them to health facilities for ANC, HIV testing, and institutional delivery. Yet other respondents mentioned the community itself, its growing awareness of the importance of HIV testing and maternal care, and changes in health-seeking behaviors.

CHALLENGES

Implementation was hampered at some facilities that did not have the support of implementing partners; this was particularly an issue in emerging regions such as Gambella and Somali, where few implementing partners work and where the partners are limited to more populous areas.

Additional challenges remain that need to be considered as Ethiopia rolls out its eMTCT plan and introduces option B+ as its primary PMTCT treatment regimen. It is of primary importance to continue efforts to improve the logistics system to ensure consistent and sufficient allocation of HIV test kits, ARV medications for both adults and children, and supplies and medications necessary for safe pregnancy and delivery. Although this assessment did not focus on the performance of the PFSA, respondents at all levels mentioned problems in communications, aligning logistics plans across government agencies and with partners, competition for scarce supplies within facilities, unstable delivery systems, and inadequate training in the forecasting and requisition of supplies.

Understanding and interpreting the achievements of the AP require data and strong M&E systems. Work is ongoing to develop a more appropriate reporting system to track PMTCT efforts, and respondents indicated that a new register will be introduced with the launch of the eMTCT plan. This is laudable and should result in a much clearer picture of program performance. At the same time, the MOH should reinforce existing efforts to review and validate data at the local level and at each level of the reporting system, before data of questionable quality reach the central level.

Best Practices to Consider for Program Improvement

- *Audit the quality of data trending in the HMIS.*
- *Develop a standardized system for follow-up of referrals.*
- *Strengthen the involvement of HEWs in monitoring ART adherence, retaining people with HIV/AIDS in care, and scheduling infant testing.*
- *Reinforce commodity management.*

Attention should also be given to improving record keeping on the number of women who test positive for HIV, both during ANC and during labor and deliver. Finally, it will be crucial to begin tracking the number of clients provided with ARV drugs at key points during pregnancy, delivery, and infant dosing as Option B+ is rolled out. The discrepancy observed in recording the number of women tested and recording HIV status needs to be investigated more thoroughly. Similarly, the HMIS data that were analyzed for the assessment showed variations that warrant closer examination of the data quality.

The widespread expansion of community mobilization through the efforts of HEWs, the HDA, and other grassroots groups has increased awareness of the services available at health facilities (particularly those related to ANC) and the benefits to individuals in accessing those services. Most of the FGD participants expressed favorable views of the health services, although some reported negative experiences when visiting facilities.

RECOMMENDED BEST PRACTICES TO CONSIDER

Overall, the findings of the assessment are consistent with the "fits and starts" expected with the introduction of any new program on a large scale. It is expected that there will be variations in implementation across broad geographic areas and that there will be challenges in aligning the functions of all inputs necessary for smooth system function, such as demand creation, supply provision, enhanced staff skills, and collection and use of good quality data for decision-making. The findings of the assessment further point to several best practices that should be considered to improve the foundation of the eMTCT efforts in Ethiopia.

Conduct an audit of data quality to determine why there are extreme variations in trend data in the HMIS. Review the data and graphs generated for this assessment and attempt to identify the causes of the variations observed. Is there pressure to report against annual benchmarks that have not been previously met? Is inflation taking place because of performance and budgetary concerns? Are clerical errors occurring? Have appropriate safeguards for data entry been put in place to flag entries that are out of range?

Develop a standardized system for follow-up of referrals. For the time being, this may be a paper-based system. As an example, when a patient is referred for services elsewhere, a notation can be made on the exterior of the patient's chart. The client can be given a three-piece referral slip, which is completed by the provider to whom she is referred. The client is given instructions to keep one copy of the referral slip and leave two copies with the provider, after the provider has notated the service delivered. In turn, the provider keeps one copy in the new file created for the client. The second copy is delivered to the facility director's office or other appropriate location for

monthly return to the originating service. Finally, the original provider, reminded by the notation on the file, asks the client for the notated copy that she has retained.

Strengthen the involvement of HEWs in monitoring drug adherence, retaining people living with HIV/AIDS (particularly pregnant and lactating women) in care, and scheduling infant testing. Provide HEWs with appropriate forms or monitoring tools to maintain correct calendars. HEWs can be strengthened and capacitated to conduct client follow-up and retention, track adherence to drug regimens, and conduct activities related to home-based and community-based care for people living with HIV. Calendars of infant testing dates should be routinely verified, and reminders should be given to families as needed.

Reinforce commodity management. Work with PFSA to rectify incorrect supply requisitions and develop clear instructions for correct completion in the future. Incomplete or inaccurate forms should be followed up to determine the source of errors, and efforts should be made to correct the problems. Correct stock maintenance and rotation should be practiced so that facilities do not receive outdated or soon-to-be-expired medications. Staff at regional PFSA supply hubs should support facilities to develop more accurate requisitions.

IMPLICATIONS FOR ROLLOUT OF OPTION B+

Respondents noted that there is variation in preparedness to offer Option B+, as envisioned in the *National Strategic Plan for Elimination of Mother-to-Child Transmission of HIV & Congenital Syphilis 2013-2015*. Some regions are more advanced than others in their staff and logistics infrastructures. Although significant training took place during the period of the AP, additional training will likely be required to address the unique demands of this new regimen, including medication adherence, retention in care, and follow-up of mother-child pairs and early infant diagnosis. It is anticipated that this will be addressed soon after the launch of the next plan, when updated materials about Option B+ are available. The number of trained personnel is of concern not only for PMTCT efforts but also for skilled delivery in more facilities. Furthermore, training must be aligned with the availability of necessary commodities and supplies.

Facility staff will need guidelines and directions to support the delivery of Option B+ in order to reinforce the training they receive. Facility management teams need to look at their data and understand what is happening in their community, relative to what takes place elsewhere, in order to place their performance in context. Strengthened learning will occur if managers are able to compare their performance with the performance of facilities of similar size and client load, and if they are given the opportunity to share experiences and problem-solving strategies.

PMTCT is acknowledged as part of a bigger Health System Development Program, and several respondents thought that this program could be used as a platform to strengthen the broader health system, with its focus on safe pregnancy and delivery, partner testing, and MCH. Indeed, PMTCT represents a process, with different services delivered along a continuum of care that has the potential to extend for years. The introduction of Option B+ and the implication that women will have contact with the health system throughout their lives implies dramatic shifts in the nature of client-provider interactions, the delivery of chronic care, and the diagnosis of other diseases and illnesses.

One element not stressed in the AP is family planning services, which are an important part of PMTCT services through the avoidance of unwanted, at-risk pregnancies. Several respondents at both federal and regional levels indicated there was a need to focus on expanding family planning services among all women, including those with HIV.

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