

**Evaluation of the
UNICEF-Sponsored Prevention of Mother To Child HIV
Transmission (PMTCT) Pilot Sites in Tanzania**

(Field Evaluation, 2-10 December, 2002)

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Executive Summary

Background to the Report

At the request of the Tanzanian Ministry of Health, consultants from the US Centers for Disease Control and Prevention Global AIDS Program and Tanzanian counterparts conducted an evaluation December 2-10, 2002, of the 5 UNICEF-sponsored PMTCT pilot sites in Tanzania in order to inform the development of national PMTCT services. This report describes the achievements and challenges in coordination and management, implementation and utilization of PMTCT services at the pilot sites. Data were collected through discussions with the Ministry of Health and collaborating partners, managers, coordinators, and implementers; site visits; and document reviews. A preliminary debriefing was held on December 10, 2002, in Dar es Salaam with the MOH, representatives of the pilot sites, UNICEF and other partners supporting PMTCT efforts in Tanzania. Preliminary results from this evaluation were also presented in a plenary session at the 2nd Multisectoral AIDS Conference in Arusha on 19 December, 2002. This provided a valuable forum for feedback and further exchange of perspectives.

Overview of the PMTCT Pilot Project in Tanzania

The goals of the UNICEF-sponsored PMTCT pilot project in Tanzania were to obtain local experiences and determine the feasibility of integrating PMTCT within routine ANC and MCH services and to reduce the number of children infected with HIV through MTCT by at least 50% among children whose mothers benefited from interventions during the pilot project period. Five sites, including four referral hospitals and one regional hospital, began implementing PMTCT services April-September, 2000. Two of the referral hospitals also supervised and supported two health centers to implement PMTCT services. The main activities of the pilot project included:

- VCT for new ANC attendees using rapid testing
- Short-course AZT beginning at 36-weeks to HIV-positive pregnant women
- Infant feeding counseling
- Modified obstetric care
- Monitoring and follow-up, including HIV testing of exposed children at 15 and 18 months of age.

Evaluation Findings and Lessons Learned

Coverage and Performance: The three regional and district health facilities implementing PMTCT as part of the pilot project reported more new ANC clinic attendees than all four of the referral hospitals. The vast majority of women delivering at the pilot sites were of unknown HIV-status. Across all sites, the evaluation team noted large differences in counseling rates (9-56%), high acceptance and good use of HIV rapid testing (78-84%) and low short-course AZT uptake and adherence (8-20%). Infant follow-up was limited and potentially biased, so effectiveness of the pilot project could not be determined.

Coordination and Management: The team found that referral hospitals have limited capacity to coordinate PMTCT activities at the regional and district levels given their separate administrative

systems. Sites had varied success in coordinating with donor-partners. The team also found that not all staff assigned to ANC and labor wards had received PMTCT training; supervision and on-going training was limited; and training manuals needed to be updated and substantially improved.

Implementation of Services: The voluntary, “opt-in” strategy to counseling and testing impeded coverage. Significantly, all sites successfully implemented rapid HIV testing to give same-day results. Although counselors were generally well motivated and supportive of the project, counselors appeared to lack skills and lacked program materials, job aids and scripts for HIV-related counseling, infant feeding, family planning, primary prevention, and on-going supportive counseling. There was no standardized PMTCT monitoring system. There were many data inconsistencies and staff reported that the collection forms were burdensome and redundant. In addition, the data were not compiled locally or centrally in an accessible database and were not available to provide feedback to the pilot sites. The team noted very low community awareness of PMTCT and a lack of IEC strategies and materials.

Utilization of Services: Fear of stigma and discrimination and fear of abandonment due to a lack of male involvement in education, counseling and other PMTCT services were prominent barriers to women’s uptake of PMTCT services at all sites. Specific procedures, such as patient flow, and protocols, such as only providing short-course AZT to women when they presented at ANC clinics at 36 weeks gestation, also adversely affected women’s utilization of services.

Conclusions and Recommendations

Despite a number of significant challenges identified in the PMTCT pilot project, the team concluded that the pilot project demonstrated that it is feasible to implement and scale-up PMTCT services in Tanzania and recommends that the next steps should be to improve PMTCT services at the pilot sites and expand PMTCT coverage to all 21 regions in mainland Tanzania and to effectively monitor the reduction of HIV MTCT. To meet these objectives, the team recommends to:

- Establish strong national PMTCT coordination and management
- Update and finalize PMTCT policies and technical and instruction guidelines
- Implement simple, reliable monitoring systems
- Improve PMTCT training and skills of healthcare providers
- Improve community awareness and sensitization of PMTCT
- Integrate routine counseling and testing and support services into MCH and RCH services (routine, “opt-out” approach)
- Change to a simpler ARV regimen (NVP) to increase uptake and adherence (already under discussion at the time of the review)
- Expand the number of sites offering PMTCT services (regions and districts), with support from referral hospitals as technical and training resources.

List of Abbreviations

3TC	Lamivudine
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral drug
AZT	Zidovudine
BMC	Bugando Medical Centre
CBO	Community Based Organization
CDC	US Centers for Disease Control and Prevention
ELISA	Enzyme Linked Immunosorbent Assay
GAP	Global AIDS Program (US CDC)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German aid organization)
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System (part of Tanzanian MOH)
ID	Identification code number
IEC	Information, Education and Communication
KCMC	Kilimanjaro Christian Medical Centre
KRH	Kagera Regional Hospital
L&D	Labor and Delivery
MAK	Makongoro Clinic
MCH	Maternal and Child Health
MDM	Médecins du Monde (French aid organization)
MNH	Muhimbili National Hospital
MOH	Ministry of Health
MRH	Mbeya Referral Hospital
MSD	Medical Stores Department
MTCT	Mother to Child Transmission of HIV
NACP	National AIDS Control Program
NGO	Non-Governmental Organization
NVP	Nevirapine
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission of HIV
RCH	Reproductive and Child Health
TBA	Traditional Birth Attendant
TOT	Training of Trainers
UNFIP	United Nations Fund for International Partnerships
UNICEF	United Nations Children Fund
VCT	Voluntary Counseling and Testing

I. Introduction

Mother to Child HIV Transmission in Tanzania

The population of Tanzania is currently estimated to be about 34.5 million, and the population growth rate is 2.9% per annum¹. Approximately 2.2 million people aged 15 years and above are HIV-infected in Tanzania². Among blood donors, the overall prevalence of HIV infection in 2001 was 11.01%³. Estimated median HIV prevalence among women attending ANC clinics in 2002 was 9.6%, ranging from 5.6% in Kagera to 16.0% in Mbeya³.

Despite high HIV seroprevalence rates, the total fertility rate is 5.6 births per woman, and only 15.6% of all women aged 15-49 years currently use any method of modern contraceptive⁴. While 95.9% of pregnant women in Tanzania register for ANC, and 69.9% attend four or more ANC visits, less than half, 43.5%, of women deliver in a health facility. Women living in rural areas (34.5%) are much less likely to deliver at a health facility than women living in urban areas (82.8%)⁴.

Assuming 1.5 million annual live births, 12% HIV prevalence among pregnant women, and 40% risk of HIV transmission from mother to child with no PMTCT services and 1-2 years of breastfeeding, approximately 180,000 infants in Tanzania are exposed to the risk of HIV infection each year and 72,000 will become HIV infected. MTCT accounted for 5% of reported AIDS cases in 2001¹. In 1999, the under-five mortality rate was estimated to be 147 per 1,000 live births, and the infant mortality rate was estimated to be 99 per 1,000 live births⁴.

Background to the Report

The Tanzanian Ministry of Health requested CDC/GAP and Tanzanian counterparts to conduct an evaluation of the 5 UNICEF-sponsored national PMTCT pilot sites to inform planning of an integrated national PMTCT service in Tanzania. Specifically, the terms of reference called for review of PMTCT service provision and utilization at the pilot sites; site management, coordination and logistics; and impact of the pilot project. The main objectives of the evaluation, therefore, were to:

- Provide an overview of the pilot sites
- Describe key PMTCT activities, achievements and challenges in the areas of:
 - Coordination and Management
 - Implementation
 - Utilization
- Describe progress and impact of the pilot project, and
- Describe the potential for expansion of PMTCT services to other regions and health facilities.

Structure of Health Services Provided by the Government of Tanzania

Mainland Tanzania is comprised of 21 regions in four zones. Health services delivered by the government of Tanzania are provided through two national systems. The regional, district and local level health system falls under the administration of The President's Office. Each region

has a regional hospital which supports a pyramid of health services, including district hospitals, division health centers, dispensaries and village health services. A Regional Medical Officer is responsible for the overall management of this system of services in each region. The MOH administers four referral hospitals (one in each zone). The referral hospitals have the highest level of hospital services in the country and serve as tertiary care, referral centers for the regions in each of the zones.

Introduction to the UNICEF-Sponsored PMTCT Pilot Project in Tanzania

With support from UNICEF, original planning for the PMTCT pilot project began in 1998, and implementation of services began at five sites April through September, 2000. The main activities of the pilot project included:

- VCT for new ANC attendees using rapid testing
- Short-course AZT to HIV-positive pregnant women (starting at 36 weeks)
- Infant feeding counseling
- Modified obstetric care
- Monitoring and follow-up, including HIV testing of exposed children at 15 and 18 months of age.

The goals of the pilot project were to:

- Obtain local experiences to determine the feasibility of integrating PMTCT with routine ANC and MCH services at the national pilot sites, and
- Reduce the number of children infected with HIV through MTCT by at least 50% among children whose mothers benefited from interventions during the pilot project period.

Other expected outcomes included:

- Improvement of interpersonal communication capacities during antenatal and post-natal clinics
- Improvement in obstetric practices related to HIV, and
- Improved public awareness (at the family level) of the opportunities available for prevention of HIV/AIDS, in general, and MTCT, in particular.

Five sites, including four referral hospitals and one regional hospital, participated in the project (Table 1, Appendix 2). Two of the referral hospitals, Mbeya Referral Hospital and Bugando Medical Centre, also supervised and supported individual regional health centers to implement PMTCT services. Following the results of the Thailand short-course AZT study and local experience with the PETRA study, a randomized, placebo-controlled trial conducted in South Africa, Uganda and Tanzania, which showed the efficacy of a short course ARV regimen (AZT/3TC) to reduce MTCT of HIV, a PMTCT situational analysis was conducted in July 1998 to prepare the 5 pilot sites. Sites were selected to participate in the pilot project due to their high HIV seroprevalence rates and for their following attributes:

- Adequate laboratory and infrastructure capabilities
- Adequate staff including pediatricians, obstetricians, counselors, midwives, laboratory technicians, etc.
- Capacity to serve as training, referral and supportive supervisory institutions, nationally and regionally

- Active function as monitoring and documenting centers for the epidemic.

Expert groups then developed the following key PMTCT protocols, which were presented and agreed upon by stakeholders in November, 1999:

- Counseling
- Infant Feeding
- Obstetric Care and Delivery Practices
- Laboratory Services
- Pharmaceutical needs
- Monitoring and Follow-up

Training manuals were developed, and a centralized training of trainers was held in Dar es Salaam in December, 1999, for several counselors, laboratory staff, physicians, nurses and other clinicians from each site. Thereafter, planning, further training, sensitization and orientation began at each of the sites. Sites conducted PMTCT awareness and sensitization meetings with community leaders and staff throughout their hospitals and health facilities.

Each site aimed to follow 300 HIV-positive mothers and their infants, except Muhimbili National Hospital which aimed to follow 400 mother-baby pairs. These target aims were based on the number of new ANC clients per year at each site, assuming 80% acceptance of counseling and testing, 12% overall HIV prevalence among pregnant women and 100% follow-up of women who tested HIV-positive.

The National PMTCT Task Force was responsible for overall coordination and management of the pilot project. The National PMTCT Task Force was chaired by the Director of Hospital Services and actively coordinated by the Head of Diagnostic Services of the Ministry of Health. The National AIDS Control Program served as Secretariat to the National PMTCT Task Force and coordinated monitoring and evaluation of the pilot project. To monitor progress, sites collected and reported quarterly the following indicators to the NACP:

- Number of pregnant women attending ANC
- Number of women who received counseling on HIV/AIDS and PMTCT
- Number of pregnant women tested for HIV
- Number of male partners counseled and tested
- Number of HIV-infected pregnant women
- Number of HIV-infected pregnant women who started on ARVs to prevent MTCT
- Number of exposed infants who received ARVs
- Number of HIV-infected pregnant women who delivered at the facility
- Number of HIV-infected women opting to exclusively breastfeed
- Number of HIV-infected women opting for infant formula or other feeding

UNICEF supported a PMTCT data manager for the NACP and provided all supplies including HIV test kits, syringes, gloves, aprons, and AZT, which were managed and controlled centrally. Two sites, Ruanda Health Centre in Mbeya and Kagera Regional Hospital in Bukoba, were also supported by additional partners, GTZ and MDM-France, respectively. Both of these partners helped to supply equipment and consumables, as needed, as well as staff. MDM also supplied infant feeding replacement formula for up to 12 months for women who chose not to breastfeed.

At each site, a PMTCT Task Force comprised of the individuals listed below was responsible for managing and supervising the pilot project:

- Hospital director
- PMTCT pilot project site coordinator
- MCH nurse in-charge
- Nurse counselor in-charge
- Labor ward nurse in-charge
- Counselor from ANC
- Obstetrics Unit Head
- Pediatrics Unit Head
- Laboratory Unit Head
- Mental health clinic nurse in-charge

II. Methods

Data Collection

To meet the objectives of the evaluation, the team gathered information through a variety of activities:

- **Discussions with MoH and collaborating partners** to understand roles of stakeholders and goals, activities and future directions of the pilot project and PMTCT.
- **Discussions with site coordinators and local PMTCT Task Forces** to identify key activities as well as capacity, strengths, and challenges.
- **Discussions with site implementers** to understand daily implementation of PMTCT services, staff needs and perspective on utilization of services.
- **Site Visits** to observe and understand daily implementation procedures and set up.
- **Document Reviews** to learn from existing written site descriptions, reports and assessments to supplement information gathered by other methods. Such documents included:
 - Original Proposal to UNICEF for Funding
 - Clinical Guidelines for Health Care Providers in Obstetric Care Services in Tanzania
 - Prevention of Mother to Child Transmission of HIV: An Integrated Training Manual
 - Prevention of Mother to Child Transmission of HIV: An Integrated Training Manual Volume I
 - Prevention of Mother to Child Transmission of HIV: An Integrated Training Manual Volume II
 - Prevention of Mother to Child Transmission of HIV Through Breastfeeding: Literature review, Policy review, Strategies, Stakeholders and Resources, Guidelines for Health Service Providers
 - Monitoring forms and progress reports
 - Final Donor Report to UNFIP
 - National PMTCT Task Force meeting summaries

Evaluation Teams and Schedule

A list of all evaluation team members and MOH counterparts can be found on page *i*.

The entire evaluation team first met together in Dar es Salaam on December 2, 2002, to review and discuss the standardized evaluation instrument. The team also met with key informants for an initial briefing about the pilot sites and PMTCT in Tanzania. The evaluation team then divided into 4 sub-groups to visit each of the 5 pilot sites (one team visited both Mwanza and Bukoba) December 3-7. After the sub-groups arrived back from the site visits, the entire

evaluation team met December 8-9 to review and summarize findings. On December 10, the team presented and discussed their preliminary findings with the representatives from the Ministry of Health; members of the national PMTCT Task Force, including representatives from each of the pilot sites; and UNICEF, and other partners involved in supporting PMTCT activities in Tanzania. Preliminary results from this evaluation were also presented in a plenary session at the 2nd Multisectoral AIDS Conference in Arusha on 19 December, 2002 (Appendix 4).

III. Results

Overview of the Pilot Sites

Bugando Medical Centre (referral hospital) / Makongoro Clinic

Bugando Medical Centre only received “at risk” ANC patients. Makongoro Clinic did not have labor ward. For the pilot project, HIV-positive pregnant women identified at Makongoro Clinic were referred to BMC for delivery.

Kagera Regional Hospital

The first AIDS cases in Tanzania were reported in Kagera region in 1983. KRH was the only regional hospital participating in the pilot project and was the only pilot site offering infant formula to HIV-positive women who chose not to breastfeed. MDM-France was KRH’s primary PMTCT implementing and coordinating partner.

Kilimanjaro Christian Medical Centre (referral hospital)

Kilimanjaro Christian Medical Centre was founded in 1971 by the Good Samaritan Foundation, a Trust established by the Lutheran, Anglican and Moravian churches. Management of KCMC was given to the Trust in August 1992, although the Government still provides operating costs. There are several other hospitals in the same area and most women in the area deliver at the regional hospital (Mawenzi Regional Hospital) rather than at KCMC.

Mbeya Referral Hospital / Ruanda Health Centre

Meta Hospital at MRH implemented pilot project PMTCT services. MRH established an ANC clinic in 1999 in order to enroll women into the pilot project. Originally, HIV-positive pregnant women identified at Ruanda Health Centre were referred to MRH for PMTCT delivery services. Since many women chose not to attend MRH for various reasons, Ruanda began as an ancillary PMTCT implementation site with supervision and coordination from MRH. In 2000, GTZ began helping to support and coordinate PMTCT services at Ruanda Health Centre.

Muhimbili National Hospital (referral hospital)

MNH is the largest teaching and referral hospital in Tanzania. It is the teaching hospital of Muhimbili University College of Health Sciences. MUCHS investigators have and are conducting many PMTCT research projects independently and in collaboration with Harvard University and The Swedish Institute for Infectious Disease Control. Although MNH’s ANC clinic was supposed to serve “high risk” ANC patients from its catchment area, about 50% of the ANC clients deliver normal pregnancies.

Progress and Impact

Table 2 (Appendix 2) provides the cumulative number and percentages of women who received PMTCT services at each site since the site began implementing services. Table 3 (Appendix 2) provides the number and percentages of women who received PMTCT services at each site during the 3rd quarter, July-September, 2002. The data provided in both Tables 2 and 3 were

collected and summarized from sites' progress reports submitted to the Ministry of Health. The evaluation team attempted to verify discrepancies and missing categories of data.

Comparing coverage rates during July-September 2002 and since the beginning of the project, significant improvement in coverage appears to have been made at MNH in the percentage of new ANC clients who were pre-test counseled; cumulatively, 56% of new ANC attendees received pre-test counseling while 96% received pre-test counseling in the third quarter, 2002. Improvement in the percentages of women starting ARVs also appears to have been made during the third quarter in 2002 at MRH and KCMC, although it is unclear why the number of women receiving ARVs at MRH is greater than the number who tested HIV-positive.

Across all sites, there were large differences in the proportion of new ANC attendees who received HIV counseling (6-61%), although acceptance of HIV testing among those counseled was high at all sites (78-91%). ARV uptake ranged from 39-55% across sites.

The vast majority of women delivering at the pilot sites had unknown HIV status. Up to 99% of women delivering at some sites were of unknown HIV status, and little improvement was observed during the last quarter before the evaluation. It is worthwhile to note that Kagera Regional Hospital had the least proportion of unknown status deliveries (83%) compared to the other referral hospital sites, but all of the percentages were extremely high. Many women in Tanzania deliver at facilities other than where they receive ANC; the Kagera Regional Hospital and Ruanda Health Centre had many more new ANC attendees than deliveries while the other referral hospital sites had many more deliveries than new ANC attendees. These findings have important implications. First, the number of unknown status deliveries at all the sites calls for expanded PMTCT services to benefit all pregnant women in Tanzania and emphasizes the need to explore how PMTCT services can be delivered in the L&D wards and to integrate and coordinate PMTCT services in both ANC and maternity services and across different levels of healthcare. HIV testing in L&D wards and use of NVP should be explored.

These findings also raise the question of where expanded PMTCT services might be best focused, in the regional and district health facilities or in the referral hospitals. These data suggest that the referral hospitals have much more limited capacity to offer integrated PMTCT and ANC services to the total population of women delivering at the referral hospitals than the regional hospital and health centers.

If referral hospitals are to achieve high PMTCT coverage, they would need:

- *High rates of counseling, testing and identification of HIV-positive women in their ANC clinics*
- *An active PMTCT program in the surrounding ANC health facilities that serve as catchment area for the referral hospitals*
- *A reliable and single method to ascertain HIV status of women presenting at labor (Is their HIV status known? If YES, are they HIV-positive or –negative?)*
- *Extension of the PMTCT program to focus on interventions at L&D (e.g., NVP and infant feeding counseling)*

None of the hospitals met their goal of treating 300 (MNH 400) HIV-positive mother-baby pairs and tables 2 and 3 show that very few children were followed-up for HIV testing at 15-18 months of age. The four facilities with any follow-up data followed between 4 and 10 infants through 18 months. Follow-up was complicated by the fact that the referral hospitals do not normally provide well-baby care, and by infant deaths before ascertainment of HIV-infection status.

Although most sites did follow-up a small number of children, the data are not reliable to determine the impact of the pilot project to reduce MTCT for a number of different reasons. Monitoring forms and progress reports were of questionable reliability due to many data inconsistencies. A reduction in HIV transmission among infants also could not be assessed due to high loss to follow-up of infants and the potential for selection bias among the infants tested. Testing and follow-up limited to 15-18 months of age excluded infants who died earlier, and it is possible that those who were followed-up tended to be more ill, and, therefore, sought out testing, lived closer to the health facilities, etc. Although effectiveness could not be assessed in this pilot, PMTCT activities, including short-course ARVs, are well-known to reduce the risk of MTCT.

Coordination and Management

Coordination

The local PMTCT Task Forces met irregularly during the pilot project, due, in part, to members' competing time conflicts. However more regular quarterly meetings were reported in 2002 at MNH and MRH. *Although local PMTCT Task Forces were responsible for managing and supervising PMTCT activities at their respective sites, their capacity to identify problems, solve problems and take action to improve services was unclear.* There were no standardized reports used within or by the groups to report, review and address site challenges and achievements. Although representatives from the local PMTCT Task Forces attended the annual National PMTCT Task Force meetings, there was not enough regular communication and participation with the National PMTCT Task Force. Another weakness was the lack of community, patient or NGO and CBO representation on the local PMTCT Task Forces, except at MRH and KRH where representatives from the local partners, GTZ and MDM, were included. *Community participation and input appeared to be weak at most sites.*

The team found varied success in coordinating with partners at different sites. Very good coordination and productive working relationships were noted between Kagera Regional Hospital and MDM. It appeared that poor working relationships among some staff at Mbeya Regional Hospital and GTZ impeded coordination and delivery of PMTCT services at Ruanda Health Centre. In January, 2002, GTZ began helping to provide support to implement PMTCT Services at Ruanda Health Centre. Ruanda Health Centre staff reported that they often receive conflicting messages from Mbeya Regional Hospital staff and GTZ. Staff also reported that they completed all monitoring forms in duplicate by hand for the two groups. Although problems had occurred, the site reported that more regular and frequent local PMTCT Task Force meetings had served to facilitate discussions about potential solutions to identified problems.

Because existing lines of communication and authority do not exist between the referral hospitals and regional and district health facilities due to their separate systems of administration, referral hospitals have limited capacity to coordinate PMTCT activities at the district level. This was evidenced by lack of on-site coordination and supervision and frequent lack of supplies at Makongoro Clinic in Mwanza and Ruanda Health Centre in Mbeya.

Training

UNICEF supported the initial training and materials development. An initial training of trainers was held for all sites at the beginning of the pilot project. Although attendees were expected and did train others at their sites, there were no manuals or instruction guides specifically for trainers, and there was no attention given on how to conduct and implement trainings. *There was no clear training plan or training strategy*, which resulted in a lack of standardization of training methods and content across sites. For example, KRH conducted a general PMTCT training for one week, and from that group, PMTCT counselors were selected. BMC conducted a 3-week training for counselors, but counselors there reported that the training covered too many topics in too short of a time. There have been no evaluations of any of the trainings to determine whether training materials were adequate or useful or that staff adequately learned and could implement the content.

The training manuals were weak, especially the counseling and infant feeding sections. These need to be updated and substantially improved. Staff at all sites reported feeling inadequately trained on infant feeding, family planning and primary prevention. Training on laboratory testing was perceived to be inadequate at BMC while at MRH recent laboratory training did not strictly adhere to the national algorithm. The team noted a lack of training on counseling for disclosure, psychosocial support and bereavement,

There was no on-going assessment of the need to conduct trainings for new staff or refresher trainings at any of the sites. Staff re-assignment was common at all sites except KCMC. At BMC, as one example, L&D ward physicians rotated about every six months from other departments and did not have specific information on PMTCT.

Trained staff reported limited opportunity to improve their skills and knowledge. The team found a lack of on-going and refresher training at all sites except at KRH, where all counselors had received a one-week refresher training, and at MNH, which provided refresher training through PMTCT research studies conducted at the site. Planned trainings at MNH and BMC could not be conducted primarily due to delays and/or lack of funding from the sponsor (UNICEF). At all sites, staff had limited access to project manuals and protocols to review or refer to when new situations or questions arose.

Especially good working relationships among Task Force members at KCMC made this a useful group to network and conduct external trainings for NGOs. Task Force members provided PMTCT training to several HIV counselors working for NGOs that could refer HIV-positive pregnant women to KCMC for PMTCT services.

Staffing

At all sites, coverage and services were compromised because not all staff assigned to work in ANC clinics and L&D wards had received PMTCT training. There was an inadequate number of PMTCT-trained counselors working in ANC clinics, and ANC counselors reported that their caseloads were too high. Particularly at Makongoro Clinic, although counselors rotate every week, only one counselor is usually available at the clinic and the number of new attendees ranges from 20-30 new clients per day. The counselors complained that they often work late and are not provided extra compensation or transportation home.

Re-assignment of staff trained to implement PMTCT was a common problem identified by all sites, except KCMC, where staff re-assignment was low. Staff re-assignment was particularly problematic in the health centers in Mbeya and Mwanza since staffing and re-assignment were determined by the regional and local government officials and could not be influenced by the referral hospitals who had trained specific staff in PMTCT.

None of the staff implementing PMTCT had job descriptions for their PMTCT activities and expected performance was not clear. Although all sites conducted regular staff meetings, the evaluation team noted a lack of supportive supervision of staff, especially a lack of emotional and technical support for counselors. Few counselors reported that supervisors sat in on counseling sessions or that they received feedback on their counseling skills.

Incentives improved staff performance at MNH and KCMC. Staff at MNH received refresher and extra training through PMTCT research studies conducted there. At KCMC, counselors' salaries were enhanced if they conducted counseling during their off hours and days.

Implementation of PMTCT Services

Counseling

The protocol for the pilot PMTCT activities was to offer voluntary counseling and testing in the antenatal clinic (generally first visit) by means of individual pre- and post-test counseling sessions. However, the limitation of this approach was that pre-test counseling was not routinely offered to all women attending the pilot site ANC clinics, and PMTCT services were not always well integrated into ANC so that the women who were offered counseling often had to take extra measures beyond their regular appointment in order to receive counseling. This "opt-in" strategy to pre-test counseling impeded coverage. At one clinic, women were referred for PMTCT counseling and testing after their ANC visit and were required to queue again. Another clinic employed a group enrollment process whereby women who wanted counseling and testing had to raise their hands publicly to indicate their intent during a large group health education seminar. *The evaluation team strongly recommends an "opt-out" strategy in which counseling is a routine part of ANC services and women can refuse to be tested.*

Counseling coverage was further impeded because only a minority of personnel assigned to work in the ANC clinics were trained counselors. At all sites, PMTCT counselors appeared committed and motivated, but inadequate staffing and heavy workloads prevented their offering counseling

to more women. Coverage could be improved by making counseling a routine part of ANC services and ensuring that an adequate number of counselors are assigned to ANC clinics, or that ANC nursing staff are adequately trained to include counseling as part of their routine duties. Routinely offered HIV/PMTCT education in groups with the use of posters, handouts, videos to introduce HIV and PMTCT, followed by a short session with individual women to clarify issues not understood in pre-test information group session and focus on risk assessment would facilitate more women being offered and accepting pre-test counseling.

Coverage of PMTCT services was also impeded because counseling and testing were only offered at ANC clinics. Not offering counseling and testing in L&D wards was an important missed opportunity since the majority of women delivering at all of the sites were of unknown serostatus.

The evaluation team noted especially weak PMTCT-related infant feeding, primary prevention and family planning counseling, and counselors independently reported lacking skills in these areas. There were no infant feeding counseling scripts (either for ANC or the L&D ward) and there was little evidence of organized postpartum infant feeding counseling. Especially regarding infant feeding, counselors reported that they did not feel that they had clear and feasible counseling messages to give to mothers. Neither primary prevention nor family planning were given adequate attention within the pilot project as important strategies to prevent MTCT. A counselor at Mbeya Referral Hospital reported only spending an average of 5 minutes in post-test counseling, barely long enough to explain test results and certainly not long enough to address risk reduction, infant feeding or future family planning options.

The evaluation team found little attention to on-going supportive counseling. Especially for HIV-positive women, there was little continuing psychosocial support or counseling regarding disclosure, breastfeeding choices, or risk reduction. HIV-positive women also were not adequately informed about or involved in planning future PMTCT ANC or delivery services. As a result, several sites reported some distress and suspicion among women participating in the pilot project who were not generally informed beforehand that their HIV status would be known to the L&D ward staff from their medical records so that they could be given AZT in delivery.

Routine presentation of HIV/PMTCT information in groups followed by brief individual counseling and strong post-test counseling for primary prevention among HIV-negative women and both PMTCT-specific and supportive counseling for HIV-positive women could substantially improve counseling and the broader effectiveness of the program.

Visual and educational aids to support counseling were lacking. Counselors had no access to quick-reference aids or scripts to standardize counseling, and few counseling rooms were equipped with posters, pamphlets or other educational aids.

MNH and KRH had done renovations to increase the number of counseling rooms and privacy. Such renovations were noted to improve counseling and confidentiality. Renovation or addition of space could substantially improve counseling at other sites (e.g., particularly at Makongoro Clinic, where the counseling room was located next to the waiting room and the wall did not extend to the ceiling).

Testing

One of the most important strengths of the project is that all sites successfully implemented rapid HIV testing with same-day results. The pilot project testing algorithm utilized two rapid tests and ELISA confirmatory testing. First, ANC clinic staff tested blood using Capillus (Cambridge Diagnostics), a highly sensitive rapid HIV test. If the result was positive, a second, highly specific rapid test, Determine (Abbott), was conducted by a laboratory technician. ELISA was then used to confirm discordant results. Verbal informed consent was obtained from women who accepted testing and was implemented well at all sites.

Good logistical coordination between ANC clinics and the laboratories was observed at all sites except in Mwanza between the Makongoro Clinic and the laboratory at BMC (which conducted the ELISA confirmatory testing) since there was no regular transport between the two facilities. Good attention to universal precautions and confidentiality through the use of IDs was also observed at all sites.

Minor breaches to the national testing algorithm occurred at some sites. At Ruanda Health Centre, laboratory staff had recently been incorrectly re-trained to conduct both the Capillus and Determine tests simultaneously rather than in succession if the Capillus test was found reactive. When KCMC experienced shortages of Determine test kits, staff did the Capillus test and then ELISA if Capillus was reactive. Makongoro Clinic also reported periodic shortages of test kits.

Laboratory quality control measures were successfully implemented at MNH, but needed strengthening at the other sites. All samples collected in Mbeya were sent to MNH in batches of 200 for quality control purposes, but the site had not been informed of any of the results. The other sites were not implementing quality assurance measures to ensure accuracy of testing.

As previously mentioned, lack of testing in the L&D wards was a missed opportunity since the majority of women delivering at all the sites were of unknown HIV status.

ARV

At each site, the ANC counselors dispensed short-course AZT directly to HIV-positive women. This was a strength since women did not have to travel to the pharmacy; there was no chance for unintended disclosure of HIV status through the prescription; and the ANC counselors could reinforce instructions about AZT directly.

Early in the pilot project, all sites received an over-supply of AZT with a short shelf-life. The sites were instructed by UNICEF to destroy the supply or send it back, but all of the sites still had the expired drug. There was no evidence that expired drug was being distributed.

There was low uptake of and adherence to the AZT regimen at all sites. At all sites except MNH, women received a weekly supply of AZT beginning at 36 weeks' gestation. Every week until delivery women would return for another week's supply. At MNH, women were given 4 week's supply of AZT at 34 weeks. Counselors indicated that some women did not come back

for ANC at 36 weeks, so they were not given the drug, or that some women did not return for another week's supply when they needed it. Counselors also attributed women's low uptake and adherence to stigma and fear of discrimination and spoke anecdotally of women hiding the medications from their partners. The lack of treatment for mothers and families was also cited as an important barrier to uptake of ARVs.

The evaluation team found a lack of program support to promote adherence to the AZT regimen. There was no standardized on-going counseling regarding ARVs and most sites did not monitor adherence to AZT during ANC. Although there was no formal monitoring system, no adverse events due to AZT were reported.

The evaluation team strongly recommends changing to "single-dose" NVP as a simpler ARV regimen (Uganda HIVNET 012 regimen: a single NVP dose to mother early in labor and a single dose to the infant within 24-48 hours). During the past year, both MNH and MRH attempted to give women NVP during delivery if they were not given or did not adhere to short-course AZT. These systems for administering NVP in L&D wards should be assessed, strengthened and expanded. Although some women received NVP during delivery, NVP was not fully introduced; there was no protocol for testing or administering ARV to women of unknown status at delivery or for providing prophylaxis to infants born to HIV-positive women who had not received AZT or NVP.

ARVs are available outside of the pilot project. At MNH, a potential for confusion existed since multiple drug regimens were offered for PMTCT through different research projects at the same site. In Mwanza, ARVs are available within and outside of BMC, and the evaluation team heard reports that non-PMTCT providers were incorrectly prescribing ARVs to prevent MTCT.

Obstetric Practices and Delivery

Universal precautions in L&D wards were well-implemented at KCMC and KRH, but MRH and MNH reported a shortage of supplies for universal precautions such as gowns and booties. Gloves and masks seemed to be available. BMC followed universal precautions when HIV-positive women delivered but not HIV-negative women.

Good adherence to obstetric practices to reduce the risk of HIV transmission was noted at all sites. Reportedly, membranes were not routinely ruptured, episiotomies were performed only when medically indicated and infants were suctioned only when required. None of the sites used separate delivery wards for HIV-positive women, which could increase stigma and compromise confidentiality.

The standard post-delivery hospital stay of 6 hours for all women at MNH concerned the evaluation team since it seems to provide little time for postpartum PMTCT interventions.

Infant Feeding

The original pilot protocol called for infant feeding counseling on safe alternatives to prolonged breastfeeding (replacement feeding; early exclusive breastfeeding and early weaning; avoiding

early mixed feeding, etc.), but this appeared to be a weak part of the project at most sites. In addition, although UNICEF planned support for replacement feeding, this did not seem to have been provided. Replacement formula was provided only at KRH, where MDM-France provided up to 12 months of replacement formula to HIV-positive women who decided not to breastfeed. Both procurement and distribution of formula were handled by MDM. Women who chose not to breastfeed could obtain tablets from MDM to stop lactation, were trained to prepare the formula, and given a thermos. Uptake of replacement formula was low, reportedly because most women did not disclose their HIV status to their partners and feared disclosure and discrimination related to replacement feeding.

Although infant feeding counseling was given to some extent during the antenatal and postnatal periods, counselors at all sites reported not feeling adequately trained to provide infant feeding counseling. The evaluation team noted that counseling messages, goals and policies were inconsistent and unclear.

It appeared that women were expected to choose infant feeding options too early in pregnancy, even during the first counseling session when they learned they were HIV-positive. Infant feeding counseling would be more effective late in pregnancy and postpartum.

Family Planning

Referrals for postpartum family planning were offered at KCMC, MNH and MRH, but *family planning was not a focused strategy in the pilot project to prevent MTCT*. Although not emphasized in the pilot, this is now recognized to be an important part of PMTCT projects (WHO Prong 2 – Avoiding unwanted pregnancies). The evaluation team found a lack of clear family planning protocols for HIV-positive women.

Primary Prevention for HIV-Negative Mothers

Primary prevention was not emphasized as a key component of the pilot project. The evaluation team noted weak risk reduction counseling and a lack of in-depth and standardized messages. For further pilot PMTCT activities and scale-up, a strategy to incorporate primary prevention for HIV-negative women is needed.

Continuity of Care and Follow-up

All sites experienced high loss to follow-up of mother-baby pairs for a number of reasons. Postpartum care is not routinely provided in Tanzania except for women who deliver by caesarian section or are diabetic or severely anemic. Many women who register for ANC in Tanzania deliver at home (45-60%) even in urban areas, many women and children attend facilities other than the referral hospitals for child immunizations and check-ups, and many women travel to more urban areas to deliver but return home to more rural areas after delivery. Several sites conducted home visits to try to increase follow-up, although counselors often found that women did not wish to be followed-up and gave incorrect addresses. These home visits required much time and effort with little reward since once women were found they were only encouraged to come again to the health facility; no testing and very little assessment and on-

going support occurred during the home visits. As an exception, there was good follow-up for pilot project participants who were recruited for PMTCT research projects at MNH due to the extra support and infrastructure. Unique strengths to collaborate with NGOs to provide continuity of care to HIV-positive mothers after delivery were noted at KCMC and KRH.

PMTCT provides an important opportunity for expanding the continuity of care to HIV treatment for families infected with HIV, often referred to as “PMTCT-plus”. A natural extension of identifying and delivering services to HIV-positive women and families is to offer HIV treatment, when resources and capacity allow. Treatment for infected families could also serve to increase demand for and uptake of PMTCT services. Although ARV treatment and PMTCT-plus were not actively considered when the pilots started, there is interest and capacity to begin some demonstration sites with PMTCT-plus. These should be encouraged and supported within national scale-up activities.

IEC

Initial sensitization seminars were held at each site for community leaders as the pilot project began, but the evaluation team found very few on-going IEC and outreach activities and little or no on-going input into the project from the local communities. *PMTCT community awareness seemed low at all sites. There was a lack of both national and local IEC strategies for PMTCT did not exist.* Some sites created their own communication materials and pamphlets, but there was a lack of PMTCT posters and other IEC materials in the ANC clinics and even in the counseling rooms, where sites had direct control and participation in the display of materials. Creating links with women living with HIV/AIDS could help provide especially valuable community input and serve as advocates for PMTCT services.

Data Management

Staff reported that data collection forms were redundant and burdensome. Upon inspection, forms at all sites were found to contain substantial amounts of missing data, and monitoring reports were found to be of questionable reliability due to many data inconsistencies. There was concern at some sites that the sheer number of forms implied to staff that the benefit of PMTCT was unproven and that the PMTCT pilots were part of a research project. At Ruanda Health Centre different reports were required by different partners, so staff recorded data by hand in duplicate for different partners.

A national data manager supported local clerks to enter data into an ACCESS database. *The database was not found to be accessible for local use for planning and evaluation, and there was no streamlined software to analyze data and provide local ownership.* The database was not utilized in Mwanza. KRH revised part of their data entry system to make it locally useful for planning. *The data were also not easily accessible nationally and were not integrated into HMIS.*

Utilization of PMTCT Services

Stigma and Discrimination

Counselors and PMTCT staff emphasized that stigma and fear of discrimination affected women's utilization of PMTCT services. Counselors reported that the vast majority of women did not disclose their HIV serostatus to their partners for fear of abandonment and violence. These fears and lack of disclosure prevented women from attending counseling, being tested and adhering to the AZT regimen, and limited their infant feeding choices. Across all sites, male involvement in PMTCT was low and problematic to women's uptake of and adherence to services.

Procedures and Protocols

The evaluation team determined that various project procedures and protocols affected women's utilization of services. Patient flow and the process of enrolling women into services were procedural issues that affected utilization of PMTCT services. Women are less likely to utilize PMTCT services if they are not incorporated into other routine MCH and RCH services. Requiring women to queue twice in order to receive PMTCT services created procedural barriers to utilization of services at Ruanda Health Centre. Requiring women to indicate publicly that they wanted PMTCT counseling and testing was another example of a procedural barrier to utilization of services Makongoro Clinic.

The evaluation team also noted that at the pilot sites, there were substantial adherence barriers to the short-course AZT regimen. By contrast, NVP is a simpler regimen (single dose at labor can be given under directly-observed therapy) and offers significant logistical and procedural advantages. AZT was given as a twice daily dose and most women had to return to the health facility for additional weeks' supply; NVP is a single-dose taken at onset of labor and can be given to infants born to HIV-positive mothers regardless of whether the mother has received ARVs.

A number of the counselors at different sites indicated that women appreciated not paying a fee for PMTCT services and HIV testing, in particular, and that testing rates would be adversely affected if women were expected to pay for HIV testing.

IV. Discussion

Potential for Expansion

With the assistance of donor-partners, Mbeya and Kagera regions have already initiated plans to expand PMTCT services beyond the pilot sites. Kilimanjaro and Dar es Salaam regions have the potential for expansion, with strong infrastructure and good coordination. Mwanza also has good potential for expansion given their experiences delivering PMTCT services both at the referral hospital and regional level.

Based on coverage and utilization rates and coordination obstacles between referral hospitals and regional and district health centers due their separate systems of administration, expansion of PMTCT services should be based in regional and district health facilities, with support from referral hospitals as a technical resource. Women in Tanzania often do not deliver at the same health facility at which they receive ANC, as evidenced by the much higher number of deliveries than new ANC attendees reported by the referral hospital pilot sites. Although less than half of women in Tanzania deliver at any health facility, the vast majority of pregnant women do register for ANC, and they are more likely to receive ANC care at regional and district health facilities than referral hospitals. The referral hospitals have gained valuable experience and developed expertise in delivering PMTCT services and could help support regional expansion activities as a technical resource.

Conclusions and Recommendations

The following sections summarize the evaluation teams' conclusions and recommendations regarding the coordination and management, implementation and utilization of PMTCT services at the pilot sites.

Coordination and Management

The local PMTCT Task Forces had limited capacity to proactively identify, report and address problems at the pilot sites. The team found that sites had varied success in coordinating with partners and referral hospitals had limited capacity to coordinate PMTCT activities at the district level. The team also found a lack of a clear training strategy to guide implementation and evaluation of trainings, supervision and on-going training was limited and training manuals needed to be updated and substantially improved. Coordination and management could be improved by strengthening the local PMTCT Task Forces and developing national and regional mechanisms to coordinate with partners. Defining a clear training strategy; standardizing and updating training curricula and manuals; and developing mechanisms for on-going training and evaluation of training needs and staffing levels would also significantly improve PMTCT services.

Recommendations

Coordination

- Strengthen local PMTCT Task Forces and assure their integration with existing MCH and RCH administrative systems
 - Regular interactions and standardized reports

- Community, patient and NGO and CBO representation
- Regular monthly meetings, with minutes and progress reports
- Quarterly updates to the National PMTCT Task Force
- Develop national and regional mechanisms to coordinate partner resources and support
- Specifically define roles of partners
- Administration of PMTCT activities should follow existing lines of authority, where possible, to draw on existing healthcare infrastructure, and promote integration

Training

- Develop training strategy to standardize PMTCT training methods and content
- Update information and content of manuals, especially counseling messages and options
- Develop comprehensive training-of-trainers instruction guide
- Conduct site-specific assessments of training needs and evaluations of training
- Develop job aids, scripts and guides for PMTCT health providers

Staffing

- Reorganize MCH duties to include PMTCT and train all MCH staff in PMTCT
 - PMTCT should be a core function of MCH staff
 - Counseling should be a priority in MCH
 - Develop job descriptions for PMTCT duties
- Provide emotional and technical support through monthly meetings
- On-site supervisors should be trained and provide regular feedback to counselors

Implementation of Services

Since counseling and testing are the keys to receiving PMTCT services in Tanzania, effort should be put into strengthening counseling and making counseling and testing available to all pregnant women. The “opt-in” strategy to counseling and testing impeded coverage and was implemented by a lack of staffing. The evaluation team strongly recommends an “opt-out” strategy in which counseling is a routine part of MCH services and women have the right to refuse testing. Simplified, routine group pre-test counseling with an individualized component and strong post-test counseling for primary prevention of HIV-negative women and supportive counseling for HIV-positive women could substantially improve counseling and PMTCT coverage rates. Counseling could also be strengthened through the development of visual aids and scripts for counseling; exploring innovative approaches to strengthen on-going supportive counseling; and strengthening counselors’ skills and ability to deliver effective infant feeding, family planning, primary prevention and supportive counseling.

A major strength of the pilot project was the successful implementation of rapid HIV testing with same day results. Rapid HIV testing benefits PMTCT services since they do not require extensive laboratory services or highly trained staff, has been shown to be as accurate as more intensive testing strategies, and reduces the delay between testing and delivering additional PMTCT services. Test kit shortages resulted in minor breaches to the national testing algorithm. The team recommends that test kits and other supplies such as protective gear for universal precautions should be centrally managed through MSD and that sites should report anticipated supply and equipment needs at least quarterly.

Uptake of the short-course AZT regimen was low for a number of reasons. The evaluation team recommends changing the PMTCT regimen to “single-dose” NVP for both mothers and infants in order to increase both uptake and adherence. NVP is a much less complicated regimen to administer and, because it is a single dose for both mothers and infant, and adherence to the full regimen should be easier.

Community awareness of PMTCT was very low and national and local IEC strategies did not exist. The evaluation team recommends that the MOH should develop a national IEC strategy and materials for PMTCT and that regions should adapt materials and strategies to their local situations. NGOs and CBOs have valuable experience and capacity to implement and support IEC, and IEC should be coordinated with their assistance.

Many NGOs and CBO also have capacity to offer care and support services and should be utilized to ensure continuity of care and follow-up. Other methods to extend the continuity of care are to explore offering care and ARV treatment to mothers and families (PMTCT-plus); exploring the role of TBAs to support PMTCT for home deliveries; and integrating PMTCT into reproductive and child health follow-up services.

Monitoring of PMTCT services should be improved, and data should be actively used to improve services and inform planning at both the regional and national levels. There were many data inconsistencies in the monitoring of the pilot project; staff reported the collection forms were burdensome and redundant; and data were not locally or centrally compiled for use in an accessible database. The evaluation team recommends developing a simple, reliable monitoring and reporting system for national and local use. Such a system should be based on simplified and streamlined data collection forms and should produce standard progress reports and allow simple analysis to inform project planning.

Recommendations

Counseling

- Implement routine counseling and testing in ANC clinics and labor wards, with the right to refuse or “opt-out”
- Streamline pre-test counseling and emphasize post-test counseling both for HIV-positive and –negative women
- MOH should develop and distribute visual aids and scripts for counseling
- Conduct periodic assessments of staffing levels in ANC and labor wards
- Provide on-going care and support in routine ANC services for HIV-positive women
- Explore innovative approaches for more supportive counseling:
 - Lay counselors
 - Women who have received PMTCT services
 - PLWHA
 - NGO and CBO support and links to counseling
- Provide primary prevention in routine ANC services for HIV-negative women
- Renovate or add space where needed to ensure an adequate number of counseling rooms and confidentiality (including group counseling areas)

Testing

- All sites should adhere to national testing algorithm
- Test kits and other supplies should be procured centrally and managed through MSD
- Donated supplies should adhere to national standards and be managed by MSD
- Sites should report anticipated supply and equipment needs at least quarterly
- Establish system for on-going training and quality assurance of algorithm

ARV

- Change regimen from AZT to NVP
- Provide NVP prophylaxis for infants of HIV-positive mothers (even if mother did not receive NVP)
- Train public and private providers in PMTCT
- Centrally manage ARV supply
- MOH to explore possibilities for providing ARV treatment to mothers and families (demonstration sites for “PMTCT-plus”)

Obstetric Care and Practices

- Ensure procurement and distribution of supplies for universal precautions

Infant Feeding

- MOH should develop clear policies, goals and messages for infant feeding counseling
- Sites should identify alternative feeding options available locally
- Emphasis should be on early exclusive breastfeeding and early weaning for HIV-positive mothers and HIV-exposed infants
- Encourage evaluation of replacement feeding initiative supported by MDM

Family Planning

- Routine family planning service should be emphasized as a key component of PMTCT
- MOH should develop guidelines for appropriate contraception for HIV-positive women

Prevention for HIV-Negative Mothers

- MOH should include primary prevention among youth and women of child-bearing age in its health sector strategy
- Provide strong post-test counseling for HIV-negative women and on-going primary prevention in routine ANC services

Continuity of Care and Follow-Up

- Explore the role of TBAs to support PMTCT for home deliveries
- Integrate PMTCT into reproductive and child health follow-up services
- Sites should identify and formalize networks with NGOs and CBOs offering care and support services
- Explore offering PMTCT-plus (start with limited demonstration sites, which should serve as resources to national services)

IEC

- MOH should develop national IEC strategy for PMTCT

- Produce PMTCT posters and other IEC materials
- Regions should adapt IEC materials to local situations
- Promote and coordinate IEC activities with NGOs and CBOs

Data Management

- Streamline and simplify data collection forms
- Integrate key PMTCT data on routine obstetric and MCH forms
- Site coordinators improve supervision of data collection
- Streamline reports required
- Develop a simple electronic monitoring and reporting system for national and local use
- Train districts and regions to analyze data

Utilization of Services

Fear of stigma and discrimination and fear of abandonment due to a lack of male involvement in education, counseling and other PMTCT services were prominent barriers to women's uptake of PMTCT services at all sites. Specific procedures, such as patient flow, and protocols, such as only providing short-course AZT to women when they presented at ANC clinics at 36 weeks' gestation, also adversely affected women's utilization of services.

Recommendations

- Conduct operational research to improve and develop strategies to reduce stigma
- Revise protocols and procedures that provide barriers to utilization of services

Expansion and Scale-Up

Despite the fact that the pilot sites only partially achieved their original goals, the pilot project yielded many important lessons regarding the delivery of PMTCT services in Tanzania and demonstrated that it is feasible to scale-up PMTCT services.

Next steps should be to:

- Improve PMTCT services at the pilot sites and expand PMTCT coverage to all regions (based on step-wise expansion and capacity-building)
- Effectively monitor all aspects of PMTCT services, including the reduction of HIV MTCT

To achieve these objectives, the evaluation team advises the following recommendations:

- Strengthen the National PMTCT Task Force to effectively support and coordinate PMTCT services and expansion activities
- Change to a simpler ARV regimen (NVP) to increase uptake and adherence
- Update and finalize PMTCT policies and technical guidelines, particularly regarding routine ANC counseling, NVP as primary ARV for PMTCT, and infant feeding

- Update and substantially improve training materials
- Integrate routine counseling and testing, and support services into MCH and RCH services
- Increase coverage and improve services within national pilot sites, including developing a program for women of unknown HIV status at delivery and expanding the catchment areas of the referral hospital pilot sites
- Improve community awareness and sensitization of PMTCT through involvement of local regional and district leadership
- Conducting a situational analysis to determine regions' capacity and needed inputs and resources to begin implementing expanded PMTCT services and identify appropriate management and coordinating mechanisms for PMTCT within regions and districts
- Expand the number of sites offering PMTCT services (regions and districts), with support from referral hospitals as technical and training resources
- Develop a simple, national PMTCT monitoring system

Limitations to the Evaluation

The evaluation team noted a number of limitations of the assessment:

- **Limited time at sites.** Site visits were conducted within just a few days. More time at the sites could have allowed more direct observation of implementation of services and in-depth discussions with staff, clients, PMTCT partners and community members to give additional and more thorough insights.
- **Limited number of interviews with staff and PMTCT partners.** Given the lack of time at the sites, the majority of staff interviews were conducted with coordinators and supervisors. Additional interviews with daily implementers of the project could have gained other points of view and supplemented information provided by project supervisors.
- **Few direct interviews with clients.** The evaluation was limited by the lack of perspective and feedback about the project from women who received PMTCT services. Rather, the evaluation team relied on perceptions and reports from staff regarding women's opinions, perspectives and experiences.
- **Few interviews with community members or leaders.** Another perspective lacking in this assessment is that of community members and leaders regarding PMTCT services, the pilot project and the prospects for scale-up. Interviews with these individuals could have yielded valuable information regarding community awareness of PMTCT and how to support demand, uptake and adherence to PMTCT services.

- **Expansion issues not formally assessed.** The main goal of the assessment was to evaluate the pilot project and sites; informing the expansion of PMTCT services was a secondary objective. While the team made several recommendations regarding the expansion of services, it did not formally evaluate the process or resources required for expansion.

Despite these limitations, the evaluation team believes that this evaluation provides an objective description of the achievements and challenges in coordination and management, implementation and utilization of PMTCT services at the pilot sites and offers useful recommendations, based on valuable local experience, both to improve PMTCT at the pilot sites and expand national PMTCT services.

Appendix 1. References

1. Tanzania Household Census, August 2002
2. National AIDS Control Programme. HIV/AIDS/STI Surveillance Report. January – December 2001. Report Number 16.
3. National AIDS Control Programme. Surveillance of HIV and Syphilis Prevalence and Youth Behaviour from Antenatal Clinic Communities, 2001 – 2002. HIV/AIDS Second-generation Surveillance Report Number 1.
4. Tanzania Reproductive and Child Health Survey, 1999.

Appendix 2. Tables

Table 1. The five sites participating in the UNICEF-sponsored PMTCT pilot project in Tanzania.

PMTCT Pilot Project Site	Ancillary Facility	City, Region	Start Date	Total # HIV+ Mothers and Their Infants Aimed to Follow	Additional Partners
Muhimbili National Hospital	--	Dar es Salaam, Dar es Salaam	04/00	400	--
Kilimanjaro Christian Medical Centre	--	Moshi, Kilimanjaro	08/00	300	--
Bugando Medical Centre	Makongoro Clinic	Mwanza, Mwanza	07/00	300	--
Kagera Regional Hospital	--	Bukoba, Kagera	07/00	300	MDM
Mbeya Referral Hospital	Ruanda Health Centre	Mbeya, Mbeya	09/00	300	GTZ

PMTCT Pilot Project Summary Data

Table 2. Cumulative from pilot site start-up, April-September, 2000, through September, 2002

Progress Indicators	Sites					
	MNH	KCMC	MRH	Ruanda	KRH	BMC / MAK
a. New ANC	10,744	3,462 (est)	4,958	5,415	18,000 (est)	10,452
b. Pre-test counseled (% of a.)	6,021 (56)	2,112 (61)	1,569 (32)	504 (9)	6,635 (38)	1,052 (10)*
c. Accepted testing (% of b.)	5,184 (86)	1,777 (84)	1,220 (78)	396 (79)	6,028 (91)	827 (79)*
d. HIV+ (% of c.)	654 (13)	165 (9)	249 (20)	75 (19)	480 (8)	86 (10)*
Started ARV (% of d.)	258 (39)	79 (48)	137 (55)	39 (52)	227 (54)	43 (50)
f. Deliveries	38,000 (est)	6,669	13,589	2,181	6,000 (est)	4,520 (est)†
Approximate # HIV+ (% of f.)	4,788 (13)	89 (1)	119 (1)	22 (1)	49 (.9)	19
Unknown HIV status (% of f.)	N/A	5,706 (89)	13,470 (99)	2,045 (94)	5,000 (83)	N/A
HIV-Exposed Infants who tested HIV+	1/4 (25)	1/5 (20)	2/10 (20)	2/10 (20)	N/A	N/A

Table 3. 3rd Quarter, July–September, 2002

Progress Indicators	Sites					
	MNH	KCMC	MRH	Ruanda	KRH	BMC / MAK
a. New ANC	1,371	N/A	315	807	N/A	1,228
b. Pre-test counseled (% of a.)	1,321 (96)	261 (?)	97 (31)	128 (16)	1,959	155 (13)
c. Accepted testing (% of b.)	1,146 (87)	229 (88)	79 (81)	108 (84)	1,832 (94)	155 (100)
d. HIV+ (% of c.)	108 (10)	18 (8)	16 (20)	26 (24)	152 (8)	10 (6)
Started ARV (% of d.)	33 (31)	29 (67)	17 (~100)	14 (54)	65 (43)	2 (20)
Deliveries	3,750 (est)	707	1,831	601	1460	1,130
Approximate # HIV+	472 (13)	15 (2)	10 (.5)	5 (1)	40 (27)	2 (.2)
Unknown HIV status	N/A	510 (72)	1,821 (99)	578 (96)	N/A	N/A
HIV-Exposed Infants who tested HIV+	1/4 (25)	1/5 (20)	2/10 (20)	2/10 (20)	N/A	N/A

(est): data estimated from available data

N/A: data not available

MNH: Muhimbili National Hospital; KCMC: Kilimanjaro Christian Medical Centre; MRH: Mbeya Referral Hospital; Ruanda: Ruanda Health Centre; KRH: Kagera Regional Hospital; BMC / MAK: Bugando Medical Centre / Makongoro Clinic

*: BMC only received “at risk” ANC patients. All but 313 new ANC clients presented to MAK; 267 were pre-test counseled and 234 were HIV-tested and 21 were found to be HIV-positive at BMC.

†MAK did not have a labor ward. All deliveries occurred at BMC.

Appendix 3. Map of Locations of the PMTCT Pilot Sites in Tanzania