REPORT ON THE RAPID ASSESSMENT OF THE UN-SUPPORTED PMTCT PILOT PROGRAM IN ZAMBIA

PILOT INTERVENTIONS AT

UNIVERSITY TEACHING HOSPITAL, CHIPATA HEALTH CENTER, MBALA DISTRICT HOSPITAL, TULEMANE HEALTH CENTER, MONZE MISSION HOSPITAL, AND KEEMBA RURAL HEALTH CENTER

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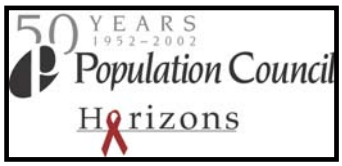

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARV	Anti-retrovirals
CboH	Central Board of Health
CBC	Complete Blood Counts
CDC	Centers for Disease Control and Prevention
DDA	Dangerous Drugs G-A
DHMT	District Health Management Team
Hb	Hemoglobin
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
IMCI	Integrated Management of Childhood Illness
JICA	Japan International Cooperation Agency
LDHMT	Lusaka District Health Management Team
MCH	Maternal-Child Health
MTCT	Mother-to-Child Transmission of HIV
NAC	National AIDS Council
NVP	Nevirapine
NZP+	Network of Zambian People Living with HIV/AIDS
PLHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PMTCT-WG	National PMTCT Technical Working Group
RPR	Rapid Plasma Reagin card test
TB	Tuberculosis
UN	United Nations
UNAIDS	Joint United Nations Program on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
UTH	University Teaching Hospital
WFP	World Food Program
WHO	World Health Organization
VCT	Voluntary Counseling and Testing

OVERVIEW OF PMTCT PROGRAM

Nearly one million adults and 150,000 children were infected with HIV in Zambia by the end of the year 2001 (UNAIDS 2002). Mother-to-child transmission of HIV is responsible for more than 90% of HIV infections in children. Each year about 20-30,000 HIV infected women give birth, without any intervention and over a third of these women will pass on the infection to their infants. To counter the increasing HIV infection rate among infants and young children in the country, the Ministry of Health established the Prevention of Mother-to-Child Transmission (PMTCT) Program in January 1999. A National PMTCT Technical Working Group (PMTCT-WG), one of the nine technical working groups that fall under the National AIDS Council (NAC), was appointed to provide coordination of PMTCT activities and technical support to PMTCT programs/activities throughout the country. Central Board of Health (CboH) is the PMTCT implementing agency through the District Health Management teams.

Program Management

The National PMTCT Technical Working Group (PMTCT-WG) was appointed to provide coordination of PMTCT activities and technical support (e.g., guidelines and training curriculum for minimum package of care, reviews of peri-natal studies proposed for Zambia, evaluation, dissemination of program experience, laboratory support) to PMTCT programs/activities throughout the country. Members of the working group include Central Board of Health, Zambia National Counseling Council, chairs of other working groups of the NAC, heads of departments at University Teaching Hospital (UTH), National Food and Nutrition Commission, USAID, UNAIDS, WHO, UNICEF, CDC, JICA, Medicins sans Frontieres, Population Concern International, New Start VCT Center, Church Health Association of Zambia, NZP+, Linkages, and Lusaka District Health Management Team. The PMTCT-WG has standing subcommittees addressing training and Information, Education and Communication (IEC) (the latter is a joint committee with the PMTCT subcommittee of the IEC technical working groups), ad hoc committees for program guidelines, reviewing proposals for peri-natal studies, and dissemination. Program coordination occurs through the monthly meetings of the working group where members share information, ensure the shared use of resources and avoid duplication and jointly solve problems. A recent example of the latter is when UNAIDS facilitated having Coca Cola company trucks, which reach all corners of the country, deliver emergency PMTCT supplies. The key to the working group effectiveness is in being inclusive in its membership. The past effectiveness of this coordination fuels its continued effectiveness, as members have observed and trust that it is a useful body and perceive a benefit in being an active participant.

The PMTCT Secretariat was created to support the day-to-day activities of the PMTCT Working Group. The PMTCT Secretariat is located at the Department of Pediatrics in University Teaching Hospital in Lusaka. It has a full time office administrator, communication officer, assistant research manager and driver. On part time basis are the PMTCT coordinator, research manager and data manager. The program established six pilot service delivery sites to test and refine the delivery of a comprehensive package of

PMTCT services. The PMTCT Secretariat coordinates activities of all six PMTCT pilot sites. The Secretariat also organizes training workshops, conducts supervisory visits and monitors PMTCT related drug distribution and storage. Once a month, data collected at all sites is transferred and entered into the main data set at the PMTCT Secretariat. The Secretariat receives technical support from the PMTCT-WG.

The pilot PMTCT service delivery sites—located in three districts—are part of the national health facilities network and are administered by local District Health Management Teams (DHMT), in collaboration with bilateral and multilateral partners. The DHMT provide all of the health workers including HIV/AIDS counselors, nurse/midwives and pharmacists and health facilities and infrastructure. PMTCT providers are supervised by their site supervisors, a district PMTCT supervisor and the PMTCT Secretariat.

Pilot Sites

The pilot sites are University Teaching Hospital and Chipata Primary Health Center in Lusaka District, Monze Mission Hospital and Keemba Rural Health Center in Monze District, and Mbala District Hospital and Tulemane Health Center in Mbala District. These sites were deliberately selected to pilot PMTCT services in urban and rural facilities and in diverse geographic backgrounds.

Lusaka is the capital city of Zambia. It has a population of about two million people, and the majority live in unplanned peri-urban settlements. About 50% of the population is comprised of children aged less than 15 years, while women of childbearing age constitute about 20% of the total population. It has 21 primary health facilities run by the Lusaka District Health Management Team (LDHMT), 10 of which have delivery (labor) units.

University Teaching Hospital is a tertiary hospital which provides both outpatient and inpatient care. It has facilities spread over various specialties befitting a teaching institution. These include an active 24-hour outpatient service in the adult filter clinic, pediatrics, obstetrics and gynecology, and casualty departments. The radiological service in the adult filter clinic offers a 24-hour facility. The diagnostic laboratory has bacteriology, parasitology, pathology, biochemistry, hematology and virology units. There are specialized support services, i.e. dental, ear throat & mouth, chest, urology, oncology, psychiatry, and occupational therapy services, and a blood bank, which is run by the National Blood Transfusion Services. UTH has clinical departments in pediatrics and child health, obstetrics and gynecology, medicine, and surgery, and has a bed capacity of almost 2000 beds and cots. The Department of Obstetrics and Gynecology offers specialized care, and family planning services are also available. Pregnant women attending the UTH antenatal clinic are usually those with high-risk pregnancies. UTH has one PMTCT counselor, 3 staff in antenatal clinic, 3-6 staff per shift in labor ward who dispense the ARV labor dose and 2 staff per shift in the post-natal ward who provide the baby dose of NVP and offer infant feeding counseling.

Most patients seen at UTH are referred from Lusaka's primary and secondary health facilities run by the Lusaka DHMT. Patients also get referred to UTH from the private sector as well as from all over Zambia. Referred patients to UTH do not pay any hospital charges, but have to pay for special investigations like radiological investigations, ultra-sonography, CTScans, etc. Patients also do not have to pay for drugs. Self-referred patients and those who opt to be attended to in the high cost wing of the hospital pay a fee.

Chipata Primary Health Center is situated in Chipata compound, a peri-urban settlement in Lusaka with an estimated population of 141,000 (for the year 2002), making it the most densely populated settlement in Lusaka. Its population consists of mainly poor people. It is a primary health facility, which offers preventive and curative services. It has an outpatient MCH unit that offers maternal and child health care services. Maternal health services include antenatal & gynecologic clinics, and a labor ward. Over 500 women are seen for antenatal care per week and about 800-100 women deliver at this facility per month. All methods of modern family planning are used, including Norplant and IUDs. The MCH unit at Chipata has four nurse/midwives; one of which heads the unit, a second is responsible for family planning and the other two provide ANC and well baby services. The MCH staff is augmented by 8 research nurses who work on a cohort study of women receiving PMTCT services at Chipata and provide the majority of the PMTCT counseling. An additional 3 staff are available each shift (less at night) in the labor ward. Outpatient child health services include a holistic approach of managing a sick child under five years of age recommended by WHO "Integrated Management of Childhood Illness" (IMCI). Children are given scheduled appointments for growth promotion and monitoring and receive immunizations free of charge. The clinic conducts outreach activities, and also has a small inpatient wing admitting both adults and children with mild to moderate diseases.

Chipata clinic has a laboratory, which is able to do simple tests such as kidney and liver function, complete blood counts (CBC), Hemoglobin levels (Hb), urine and stool examinations, blood slides for malarial parasites and serology tests namely HIV rapid tests and RPR. Tuberculosis is screened and treated for adults at the clinic, but a child suspected to have TB—persistent cough of >21 days, positive TB contact, etc.—is referred to UTH, where screening and diagnosis is made. Then the child is referred back to the primary health facility for drug collection and monitoring. VCT services are available through the MCH services and the ProTest initiative.

Mbala District is in the Northern Province of Zambia. It is 1,067 kilometers northeast of Lusaka, and shares an international border with Tanzania. The district population is 174,042. The vast majority (>70%) of the population falls in the low socioeconomic grouping with women being the most affected. A greater proportion of the population is engaged in farming. The main tribes in Mbala are the Mambwes and Lungus, but Bemba and to a lesser extent other local languages are spoken. The current literacy levels are 40% for women and 60% for men. It has been noted that girls leave school in greater numbers and earlier than boys. Close to 80% of the Mbala population is Christian.

Mbala District Hospital is a secondary referral center for all surrounding primary health facilities in this district. It has a bed capacity of 250 beds. It is divided into two units. The outpatient department (urban clinic) falls under the Mbala DHMT and covers a population of 20,389 in its catchment area, while the inpatient wing operates as a separate entity and is managed by the hospital's Managing Director. The MCH services at the out-patient clinic are provided by four staff, and 2-3 midwives attend to the labor ward. It has an active 24-hour outpatient service caring for both adults and children, and the inpatient wing has departments of pediatrics, obstetrics and gynecology, surgery and medicine. Radiological services are available in the X-ray department. Most patients seen at the hospital are referred and do not pay for treatment received nor for hospitalization. Mbala District Hospital has a laboratory, which is able to do simple tests such as kidney and liver function tests, complete blood counts (CBC), Hemoglobin levels (Hb), urine and stool examinations, blood slides for malarial parasites and serology tests, namely HIV rapid tests and RPR. Tuberculosis is screened and treated for both adults and children.

Tulemane Health Center is a primary health facility serving both urban and rural areas and has an estimated population of 26,050 in its catchment area, out of which 5,731 are women of childbearing age. Annual estimation of pregnancy is about 1,407; there are about 1,355 deliveries out of which 1,276 would be live births. It is a primary health facility, which offers preventive and curative services. It has an outpatient MCH unit that offers maternal and child health services including antenatal and gynecologic clinics. A few methods of modern family planning are used. Outpatient child health services include a holistic approach of managing a sick child under five years of age recommended by WHO "Integrated Management of Childhood Illness." Children are given scheduled appointments for growth promotion and monitoring and receive immunizations free of charge. The clinic conducts outreach activities. The clinic has no in-patient facilities. Tulemane clinic has a very small basic laboratory, which is able to do simple Hemoglobin levels (Hb), urine and stool microscopy, blood slides for malarial parasites and serology tests namely HIV rapid tests and RPR. Tuberculosis is not screened and treated at this facility. Four staff at Tulemane have been trained and offer PMTCT services.

Monze District is situated in the Southern Province of Zambia, about 200 kilometers south of Lusaka. The district has a population of 169,383, among which 37,266 are women of childbearing age. There is about 9,147 expected pregnancies, 8,807 expected deliveries and about 8,383 expected live births annually. The general economic status of the population is one of poverty. The district depends on commercial and subsistence farming mainly animal husbandry and crop farming. In the township the major economic activities are trading and formal employment. The indigenous people are greatly influenced by Tonga tradition and culture, characterized by the extended family system and polygamous marriages.

Monze Mission Hospital is a secondary referral center for all surrounding primary health facilities in this district. It has a bed capacity of 304 beds. It is divided into two units. The outpatient department (urban clinic) falls under the Monze DHMT and covers a

population of about 18,000 in its catchment area, while the inpatient wing operates as a separate entity and is managed by the hospital's Managing Director. The MCH services at the out-patient clinic are provided by two staff, and one midwife attends to the labor ward. It has an active 24-hour outpatient service caring for both adults and children, and the hospital has departments of pediatrics, obstetrics and gynecology, surgery and medicine. Radiological services are available. Most patients seen at the hospital are referred and do not pay for treatment received nor for hospitalization. Monze Mission Hospital has a laboratory, which is able to do simple tests such as kidney and liver function, complete blood counts (CBC), Hemoglobin levels (Hb), urine and stool examinations, blood slides for malarial parasites, and serology tests namely HIV rapid tests and RPR. Tuberculosis is screened and treated for both adults and children. Monze Mission Hospital has a School of Midwifery.

Keemba Rural Health Center is an extremely rural primary health facility and serves an estimated population of 11,381. This facility offers both preventive and curative services. It has an outpatient MCH unit, which offers maternal and child health services. Outpatient child health services include a holistic approach of managing a sick child under five years of age recommended by WHO "Integrated Management of Childhood Illness" (IMCI). Children are given scheduled appointments for growth promotion and monitoring and receive immunizations free of charge. The clinic conducts outreach activities because it has several health posts in villages scattered over a wide area. The health center runs static clinics on Monday, Thursday and Friday. Tuesday and Wednesday are spent doing outreach activities at different health posts. Outreach services vary and include family planning/antenatal clinic, growth monitoring, HIV testing & counseling, etc. Health posts are visited once a month.

Keemba Rural Health Center has a very small basic laboratory, which is able to do simple Hemoglobin levels (Hb), urine and stool microscopy, blood slides for malarial parasites, and serology tests namely HIV rapid tests and RPR. Tuberculosis is screened and treated for adults at the clinic. The six staff at Keemba offer all services including PMTCT. There is no laboratory technician and the clinical officer in charge of the center has been trained to do laboratory work as one of his many responsibilities. The center has a small in-patient wing with a bed capacity of 22 beds, two of which are in the labor (delivery) room.

Minimum Package of Care for PMTCT

The PMTCT package includes free voluntary counseling and testing (VCT), screening and treatment of syphilis and other STIs, anemia screening, prophylaxis and treatment, malaria prophylaxis, antiretroviral drugs for prevention of vertical transmission (AZT and Nevirapine), infant feeding counseling, infant formula and promotion of male involvement. Antenatal attendance in Zambia is very high and is estimated at approximately 96%; about 71% of pregnant women attend antenatal clinics at least 4 times in a given pregnancy. At the beginning of every antenatal clinic, a nurse or midwife gives a health education talk. Among other topics, these group health talks address HIV/AIDS including PMTCT activities offered at the clinic. After the group

talk, those who would like to know more about HIV testing may receive individual pretest counseling. Voluntary counseling and testing has been integrated into routine MCH services. Midwives/HIV counselors do most of the counseling and are helped by a few professional (non-medical) lay counselors. Should a woman opt to be tested, HIV testing can be done the same day. For each client who undertakes an HIV test, she will receive her results during an individual posttest counseling session.

HIV positive women who accept to receive ARVs for the purpose of reducing the risk of transmission of HIV to their babies are receiving either: 1) AZT 300 mg tablets twice a day from the 36 weeks (now 34) of pregnancy and 300 mg three-hourly during delivery, or 2) NVP 200 mg for the mother at onset of labor and a single dose 2m/kg syrup for the baby within 72 hours of birth. All HIV negative mothers and untested women are counseled and supported to exclusively breastfeed their infants for the first six months of life. HIV positive mothers make an informed choice between exclusive breastfeeding for four or six months or replacement feeding, i.e. infant formula, after discussing the advantages and disadvantages of the available options. HIV positive women who choose to feed their children with formula feeds are taught how to do so correctly by health workers. They are also monitored to ensure that the formula is prepared properly and done under hygienic conditions. They are provided with formula for 6-12 months. In sites like Monze Mission Hospital, there is a provision for mothers to practice preparation of formula milk in the health units under supervision.

Delivery at the site of booking is the norm in urban health centers such as Chipata Health Center where 85% of booked women deliver. Despite a high percentage of antenatal attendance in rural health centers, delivery rates at these centers are quite low at about 25% on average. Delivery rates at the most remote sites can be as low as 6% (e.g. Keemba). In recognition of the role the traditional birth attendants (TBAs) play in rural areas, workshops on PMTCT for TBAs have been held in rural areas such as Keemba and Mbala.

PMTCT sites refer HIV positive women to community-based groups such as PLHA peer support groups, post-test clubs, churches and faith-based organizations. In all sites treatment for opportunistic infections is being offered to the women and their families. (Tulemane and Keemba had not received their supplies yet from their local district pharmacies at the time of the rapid assessment.) Cotrimoxazole prophylaxis for Pneumocystis Carinii Pneumonia (PCP) is offered to HIV positive women from the second trimester, and to their perinatally exposed infants, from 4 weeks of age to 12 months. As part of the care for HIV positive women, the ProTest initiative has been added to the services offered at Chipata clinic. This includes screening for tuberculosis for the women and their families; those found with TB are treated, and those without tuberculosis, are offered INH prophylaxis for 6 months. Nutritional support is given for women and children at Chipata clinic who meet certain criteria through support from the World Food Program (WFP).

Program Strategies

The training program, the development and implementation of the communications strategy, and monitoring and evaluation—all coordinated by the PMTCT Secretariat—provide the support for PMTCT service delivery. The PMTCT Secretariat offers five training and sensitization programs:

- 11-day course for health workers on the "Minimum Package of Care for PMTCT"
- 8-day course to update health workers on exclusive breast feeding and HIV infant feeding counseling (WHO modules)
- Serological rapid testing (HIV, RPR, Hepatitis) for non laboratory workers
- 2-day orientation course on PMTCT for traditional birth attendants
- 1-day sensitization for program managers, doctors, and other senior health workers.

To date, more than 780 different types of health workers have been trained in some aspects of the PMTCT as seen in the following table:

Type of Training	**Number of Trainings**	**Number of Trainers Trained**	**Number of Health Workers Trained**
Minimum package of care for PMTCT	11	10	284
Infant feeding and HIV	6	18	96
Rapid testing for non laboratory workers	5		60
Traditional birth attendants	3		120
Sensitization for managers, doctors, and senior nurses	3		78 in Lusaka 74 in Copperbelt 75 in Southern

The PMTCT communication strategy has three components:

- Advocacy for key government officials, health institutions and community leaders as well as cooperating partners both bilateral and multilateral.
- Behavior change communication to create awareness and increase knowledge of HIV/AIDS through the provision of accurate information with emphasis on MTCT.
- Community mobilization for strengthening community networks to support HIV/AIDS infected and affected women and their families.

The production of IEC materials for providers, clients, communities and stakeholders has been an on-going venture and several products including guidelines, brochures, a wall chart and a newsletter have been produced.

Another major focus of the communication activities has been the sensitization of communities and stakeholder groups through meetings and drama. Several community meetings took place in all sites whose main purpose was either to sensitize the community, increase collaboration with community groups, or introduce the PMTCT program to the new sites. Initially participants to the various meetings had incorrect, little or no information on the PMTCT program, and in several cases follow up meetings had to be conducted to ensure that strong links were formed or that accurate information was passed on. The following community groups participated in one or more of these community meetings:

- Neighborhood Health Committees
- Peer Educators
- Community Health Workers
- Village head men and leaders
- Church leaders and congregations
- Resident Development Organizations.

In Monze and Mbala, orientation workshops were held for District Development Committees which are comprised of representatives of government departments, ministries, local non-governmental organizations and civic leaders. Orientation workshops were also organized for several community based organizations in Chipata that regularly conduct community outreach programs. The purpose of these workshops was to ensure that members of community based organizations gave accurate information on PMTCT as it worked in the community. A number of door to door community outreach programs based at Chipata clinic have been introduced in 2002. The purpose is to get members of community groups to go out in the community and encourage couples to under go HIV testing, or to distribute IEC materials and clarify any misconceptions.

Community theatre has been an on-going medium of sensitizing the public since inception of the program in all sites. Initially four groups were active in the pilot site areas and they have recently been supplemented by four additional groups.

As part of community sensitization, a number of radio programs have been initiated in Monze district, which is the only site that has community radio stations. To this end, Radio Chikuni, a Catholic run radio station with a wide coverage, was commissioned to carry out a series of radio programs on PMTCT in the form of drama, discussions and short bulletins mainly in Tonga, but also English. In 2002, a privately owned commercial radio station was commissioned to transmit a series of English bulletins on PMTCT that are targeted at the urban population.

Finally, to forge strong links with PLHAs members of the Network of Zambian People Living with HIV/AIDS (NZP+) have been incorporated in PMTCT communication activities. They have given health talks to women attending antenatal clinics at Chipata clinic and UTH and assisted in the formation of posttest clubs in Keemba, Mbala, and Chipata clinic. However due to economic hardships, the Keemba and Mbala clubs are not very active, while the Chipata club has become larger and is currently involved in a number of community outreach programs.

The monitoring and evaluation strategy is comprised of an adaptation of the Health Management Information System to track PMTCT activities, an operations research component that includes a longitudinal study of a cohort of PMTCT clients at Chipata clinic, and a study of PMTCT service costs.

There have been a number of products as an outcome of the planning and implementation of the training, communications and monitoring and evaluation components. These include guidelines for the minimum package of care for PMTCT, a training curriculum, a trainees manual, brochures on PMTCT in four languages and two infant feeding brochures—one for health workers and one for mothers, a wall chart with PMTCT steps, PMTCT posters, a newsletter, registers for recording program monitoring data and database programs for capturing and tracking program indicators.

Partners and Coordination

Several agencies are collaborating with the Government of Zambia in the implementation of the national PMTCT services. UNICEF provides technical and financial assistance to the program. Its support includes financial support for training of health workers in the "Minimum Package of Care" for women in the program and their infants, procurement of back-up antenatal medical/surgical supplies, assistance to communication activities and support to the PMTCT secretariat.

Other UN agencies actively involved are UNAIDS, WHO, and the World Food Program. Besides technical input, UNAIDS has provided funds for some of the communication activities. WHO has provided technical assistance and support, particularly for the training on breastfeeding and HIV counseling course. The WFP has procured supplementary food for women in the program

HORIZONS/Population Council provides funds and technical support for the monitoring and evaluation component, dissemination, 3.5 positions at the secretariat and 19 staff at the PMTCT sites involved in data collection and compilation (as well as counseling and supervision), the refurbishment of an unused building which transformed into the Secretariat office and seven computers, one for each district, the cohort study and the secretariat. NORAD supports fully the VCT component of the initiative. USAID has provided continuous technical assistance through the PMTCT Working Group. JICA is supporting PCR testing for a sub-sample of the infants of women in the PMTCT program and testing for drug resistance for ARVs among a sub-sample of women.

As a result of the various donors attracted by the PMTCT-WG, all needed program inputs and staff costs are currently met. Working with a variety of donors has worked well as long as donors disburse funding by period rather than activity to ensure that the PMTCT Secretariat has funds on hand when needed and the necessary flexibility to accommodate the unexpected. The concern now is whether these donors can provide support for all of the country and what other sources of support can be secured for program expansion.

RAPID ASSESSMENT METHODOLOGY

A rapid assessment of the experience of the Zambia pilot PMTCT sites was undertaken as part of a global assessment of the UNAIDS/UNICEF/WHO/UNFPA evaluation of UN supported pilot PMTCT services. Population Council is managing the evaluation. The evaluation is comprised of a desk review of the pilot PMTCT experience in the 11 countries initially supported by the UN and rapid assessments in three countries—Zambia, Rwanda and Honduras. The PMTCT Secretariat with the extensive participation of and consultation with national authorities, experts and partners carried out the rapid assessment in Zambia. All six PMTCT sites were included in the rapid assessment.

Both qualitative and quantitative methods were used in the rapid assessment in order to meet the following objectives:

- To examine and document progress, experience, and lessons learned in the Zambian PMTCT pilot sites and identify key issues and challenges to address for scaling up of the PMTCT program.
- To examine the mechanisms of collaboration, coordination and linkage with bilateral and NGO partners.
- To contribute to the preparation of a practical programming framework which incorporates real world experiences of pilot sites and includes a) recommendations for starting and scaling up strategies and b) technical and resource supports required by country teams for starting and scaling up.

Five evaluation instruments were employed in the rapid assessment. Table 1 details the number of interviews and observations achieved during the rapid assessment at each site.

Table 1: Numbers of Interviews / Observations Achieved at Sites.

Site	Provider Questionnaire	Community Focus Group Discussion	Observation of:							Exit Interviews with:			Total
			VCT Pre-test	VCT Post-test	Group Talk	Antenatal	Infant Feeding Counseling	Family Planning	Growth Monitoring	Client HIV +	Client HIV-	Client Unknown status	
UTH Hospital	8	0	3	4	2	8	5	9	11	8	4	6	69
Chipata Clinic	11	1	4	2	3	8	8	10	10	12	20	23	113
Monze Hospital	8	1	5	2	2	8	8	8	8	9	6	10	76
Keemba Health Center	5	2	4	3	2	8	8	37	8	4	4	6	80
Mbala Hospital	8	0	6	0	2	9	8	8	8	6	8	18	82
Tulemane Health Center	6	2	8	1	3	9	8	8	8	4	7	8	72
Total	**46**	**6**	**30**	**12**	**14**	**50**	**45**	**50**	**53**	**43**	**49**	**71**	**475**

The following describes the characteristics of each of the instruments (which were applied using local languages) and how respondents were selected or sampled.

1. **Provider questionnaire:** Data was collected from clinical and counseling providers who work in ANC, VCT for PMTCT, labor and delivery or conduct infant feeding counseling. The components covered were providers' background, PMTCT knowledge and attitudes regarding PMTCT, VCT, short course ARVs, labor and delivery, IFC, and providers' motivation and well-being. Forty-six providers, 38 women and 8 men, were interviewed. Basic education attained by the interviewed providers included (multiple responses were allowed) a nursing qualification for 39 providers (18 registered and 21 enrolled), 20 of which had also obtained training in midwifery. There was one clinical officer and two medical officers, a laboratory worker, one pharmacy worker, a CDE (maid) and one TBA. 10 of these health workers had undergone training as HIV counselors, while another 20 had undergone the training on the PMTCT Minimum Package of Care.

2. **Observation questionnaire on service delivery:** This involved the use of a checklist by the researchers who observed the following components of service delivery: voluntary counseling and testing, antenatal care, infant feeding counseling, family planning, growth monitoring and the group talk.

3. **Client exit interviews:** Topics covered in the client exit interview included demographic characteristics, clients' thoughts regarding services received, VCT, infant feeding counseling and short course ARVs. Clients were defined as pregnant women >20 weeks gestation or post partum women with an infant aged less than 6 months. HIV positive and negative female clients as well as those clients with unknown status were interviewed. A total of 159 women were interviewed, out of which 40/159 were HIV positive, 48/159 were HIV negative, and 71/159 were of unknown status. Table 2 presents selected demographic characteristics by site of the women interviewed. The average age was around 26, and the median number of children was two. Most women were married, though more than one-quarter of women in Keemba and Monze were widowed, divorced or single. Women and Lusaka (Chipata and UTH) and Monze had relatively higher levels of education with more than 50 percent completing primary school. Education levels were considerably lower at the other sites with most women reporting some, but not complete, primary. Most women in Keemba were farmers, a minority of women in Chipata were occupied as vendors, and women in UTH reported a range of employment; at the other three sites the large majority of women were unemployed.

Table 2: Client characteristics (number in each category) based on exit interviews by site.

Site	Chipata (N=49)	Keemba (N=15)	Mbala (N=32)	Monze (N=25)	Tulemane (N=20)	UTH (N=18)
Age						
Mean, Range	25, 15-39	31, 16-47	27, 15-43	28, 19-46	26, 18-40	27, 15-47
Number of Children						
Median, range	2, 0-7	3, 0-8	4, 0-8	3, 0-9	2, 0-5	1, 0-5
Marital Status						
Single	1	1	1	1	1	3
Married, Living together	47	11	29	16	19	15
Divorced, Widowed	1	3	2	6	0	0
Education						
None	5	2	2	0	2	0
Some primary	16	10	17	4	9	8
Complete primary or some secondary	26	5	11	20	7	7
Complete secondary or some college	2	0	2	1	2	3
Employment						
Salaried job or Self employed	3	0	1	2	1	4
Casual worker or Selling/vending	9	0	1	4	4	3
Farming for subsistence or cash	0	11	1	3	3	2
Unemployed	37	4	29	16	12	9

4. **Focus group discussions:** Community feelings and knowledge were explored about topics such as PMTCT knowledge, communication strategy and program implementation, male involvement, VCT, short course ARVs, infant feeding information and practices, family planning counseling, care, support, confidentiality, stigma, and supplies. Six focus group discussions were carried out. At Chipata Clinic, the discussants consisted of men and women from the community plus a few community leaders and members of the HIV posttest club. Two focus group discussions were done at both Keemba Rural Health Center and Tulemane Health Center, one each for the men and women. Monze Mission Hospital arranged a focus group discussion in which the participants were mostly community leaders (men and women).

5. **Site managers' interviews:** A questionnaire was administered to the site managers. This tool was used to collect information on services provided at the sites as well as to assess the referral system. Attached to it was an inventory checklist, which ascertained the availability of drugs and other medical surgical supplies, communication outputs such as brochures and posters as well as training guidelines and protocols.

The raw data from the field was checked and corrections made where necessary. The qualitative data was categorized according to themes and summarized by the evaluation team. The quantitative data was entered into the computer database and frequencies for different variables run. Due to the rapid nature of the assessment, there was not enough time as would have been desirable to check manually and during data entry for completeness of questionnaires. Thus, there are missing data on some questions, and the denominators reported in this report are the number of responses for the relevant question.

MAIN FINDINGS

Training

Less than half of the 48 providers interviewed (because they are involved with providing PMTCT services) have been trained in the PMTCT minimum package of care or infant feeding counseling.

Twenty-two PMTCT providers reported they had been trained on the prevention of MTCT, 10 said they had not, and 13 did not respond. Then those trained were asked to describe the training they had received regarding PMTCT, its components and the duration of the training. All the respondents gave the correct duration of 2 weeks (11 working days). They also correctly described the components of the training, and that it included training on the "Minimum Package of Care," background and epidemiology of

HIV, maternal and infant nutrition, counseling, etc. Almost all the respondents stated that the training had prepared them to provide patients information about PMTCT.

Eighteen providers reported attending a separate course on infant feeding counseling. The majority of those who attended were able to remember the duration of the training, that it was done based on the WHO guidelines and that it addressed breastfeeding, providing infant feeding options for HIV positive mothers, and infant and young child feeding counseling. All of them agreed that they were given an opportunity to practice counseling, felt that the training was adequate and made them feel prepared to provide infant feeding counseling.

Supplies

It was deemed important to establish a reliable ARVs regulatory mechanism from the outset. To this has now been added drugs for opportunistic infections and other back-up supplies.

A PMTCT drug distribution system has been put in place, and it utilizes the already existing government infrastructure of drug distribution. When Government medical/surgical bulk supplies are procured, they are stored at the "Medical Stores." Whenever the District or indeed UTH are in need of new supplies, they put in a request to the PMTCT secretariat, to where they also retire forms of drugs received and utilized at the given facility in a given time period. A drug requisition form is then raised by the secretariat ordering drugs from Medical Stores, which is countersigned by the research manager. At the Medical Stores, there is a special area where all PMTCT drugs and medical/surgical supplies are kept (most of which have been procured by UNICEF).

Medical Stores' trucks deliver the drugs to District pharmacies once a month according to transport specifications (i.e. maintaining the cold chain), from where the clinic orders using a requisition form again, this time counter signed by the District Director of Health. The head of the clinic Pharmacy together with the clinic MCH supervisor acknowledges receipt of the drugs, which are entered onto drug cards (bin card system of monitoring drugs received and dispensed out) and are only given to a client by prescription or by an authorized person. At the clinic, ARVs for PMTCT are kept in a "Dangerous Drugs G-A (DDA) cupboard" and the same stringent system of recording, monitoring and dispensing of DDAs is applied to them.

For the most part, the PMTCT sites had adequate supplies of short course ARV prophylaxis and other relevant drugs for ANC and treatment of opportunistic infections, HIV test kits, infant formula, clinical supplies and IEC materials.

All sites had adequate supplies of AZT. Nevirapine was available in 4 of 6 sites because Mbala and Tulemane had not yet ordered their supply. Multivitamins are available at all sites, but during the period under review, it had run out of stock at Mbala. Mebendazole (vermox) and Fansidar (sulfadoxine-pyrimethamine or SP) for malaria prophylaxis is available in all six sites, so is Cotrimoxazole, except that during the period under review,

it had run out of stock at Keemba. TB treatment was available at all sites except for Tulemane. Adequate supplies of RPR kits were also available at all sites.

HIV tests kits are provided through the National VCT program with back-up through the PMTCT Secretariat, if necessary. All sites had adequate stocks of HIV rapid tests (Abbot as the screening test, Bionor as a second confirmatory test). Also found were other rapid test kits such as Unigold, Hemostrip and Oral Quick. However, Chipata clinic has experienced problems with stockouts of test kits which meant that women were unable to collect test results or the test results were only available after a delay of several weeks. Coordination with the National VCT program is important to ensure an uninterrupted supply of HIV test kits.

Sterilizing equipment, disinfectants, disposable needles, clean disposable gloves, swab containers with sterile swabs, stationary and registers were available at all sites. Condoms were available at all sites (although this question was not completed in Mbala). At Monze Mission Hospital (a Catholic institution), condoms are distributed in the hospital for prevention of sexually transmitted infections and not as a family planning method.

All the sites had brochures/pamphlets and posters which cover a myriad of topics such as FP, VCT, PMTCT, growth monitoring, Vitamin A supplementation, malaria, safe water, cholera alert, ANC, TB, condoms, SP and chloroquine dosing. Only three sites had guidelines on VCT for HIV (Monze, Keemba and Chipata), while all the sites had an PMTCT-MCH chart that has guidelines on the use of ARVs for PMTCT. There were no guidelines on infant feeding counseling at Mbala and Tulemane. None of the sites had guidelines on universal precautions for health care givers or post exposure prophylaxis for HIV. Although three sites reported not having guidelines on monitoring and evaluation, they did have PMTCT registers for collecting information on client visits.

Utilization and Coverage of Services

Service statistics on client volume and the coverage of VCT provision are shown for each site in Figures 1 and 2. The period of time for which the service statistics correspond varies slightly by site depending on the date services were introduced in the site. The start dates for each site are:

Chipata	September 2000
Keemba	May, 2000
Mbala	October 2000
Monze	June 2000
Tulemane	October 2000
UTH	June 2000

The last reporting date for all sites was November 28, 2002.

Figure 1: Number of 1st ANC visits and percent of 1st ANC visits who received HIV pretest counseling (from pilot program inception - November 2002), 6 sites in Zambia.

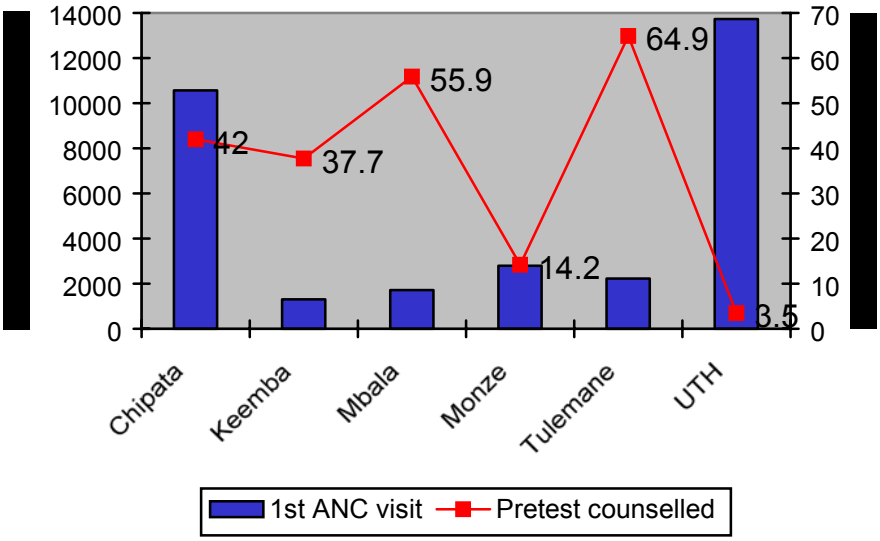
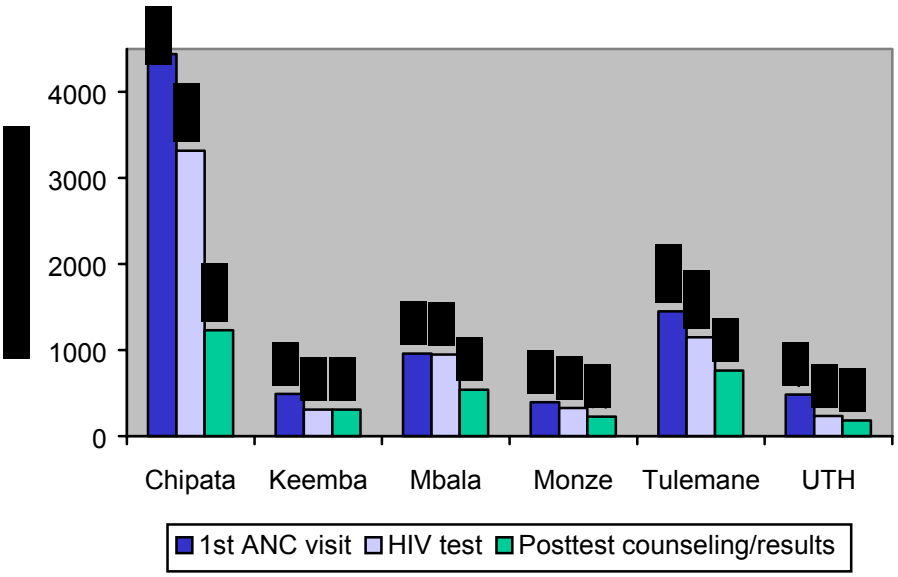


Figure 2: Numbers of women who received HIV pretest counseling, HIV test, and HIV posttest counseling and test results (from pilot program inception – November 2002), 6 sites in Zambia.



The statistics reflect the variety of experience at the sites. Chipata is a very busy clinic with a large client load. The staff was supplemented at this site by six research nurses who were responsible for the data collection for a cohort study of women participating in the PMTCT program but who were also all trained counselors and carried out the majority of the PMTCT counseling. Overall coverage of clients at Chipata is relatively low with only 42 percent receiving pretest counseling, 31 percent having an HIV test, and 12 percent completing the VCT (i.e., received pretest counseling, had an HIV tests, and received their test result). However, as seen in Figure 2, the number of women who received VCT at Chipata is substantially greater than at other sites because of the large client volume. PMTCT program staff have identified areas of improvement in both the provision of VCT services and in stimulating demand for VCT and have been working towards increasing both the supply and demand. After a period of considerable staff turnover, all staff new to the health center have now been trained on PMTCT. Additionally, a new monitoring form has been introduced to track the productivity of the research nurse counselors that had sunk quite low. In the two months since the form was introduced, the weekly number of women pretest counseled has tripled. In the community, the program began a new campaign working through the churches to introduce the PMTCT program. This has been well received and seems to be resulting in an increase in demand for the VCT service at ANC. Problems with the supply of HIV test kits to Chipata clinic have meant there were periods of time when the program was unable to offer an HIV test, and there were long delays in receiving results by which time the client may have delivered or lost interest in getting her result.

Keemba and Monze have both been severely affected by staff shortages that have had a large impact on their capacity to deliver pretest counseling. A very dynamic nurse/midwife based in Keemba fell ill and subsequently died. The community has been lukewarm in accepting various temporary arrangements put in place while a replacement was obtained. Nonetheless, in Keemba, among women who receive pretest counseling HIV testing is widely accepted and because rapid tests are carried out on the spot by the counselor, nearly all women receive their test results. Monze has only one provider at the out-patient clinic responsible for static ANC services which leaves little time for HIV counseling. However, she is regarded as an excellent counselor, and a high proportion (83 percent) of women who receive pretest counseling have an HIV test, and 70 percent of women who are tested collect their results.

Mbala and Tulemane have had the greatest success in reaching their client population as measured by the proportion of women who have pretest counseling, and HIV test, and collect results. Overall one-third of women who come for ANC have received HIV pretest counseling, had an HIV test, and received their HIV result. This relatively high coverage rate is a result of extensive sensitization activities in the community initiated by PMTCT and other HIV programs which is creating demand for HIV counseling and testing, active program of community lay counselors and a VCT program which bring clients to the PMTCT program, and higher staffing levels in these sites—though they have also been affected by staff turnover. Yet, problems with the responsiveness of the laboratory to the PMTCT program have meant that same day HIV test results are not

always available and many women, often citing concern about their husband's reaction, choose not to come back for their test results.

UTH is a referral hospital where the majority of clients are referrals from clinics all over Lusaka, including from private doctors. One reason for referral is suspected HIV infection. The client population for the PMTCT program is comprised of two distinct groups. One group is recruited from those referred for obstetric complications. Many of these clients are not receptive to learn more about HIV and MTCT as they see this as just adding another problem to the one they were already referred for. Many clients say they will come back later but few do. Additionally, the antenatal examination is done by doctors rather than nurses who to date have not been very supportive of the PMTCT initiative at UTH and do not raise it with clients. There is only one counselor working in the ANC area to promote and offer HIV counseling and testing. Finally, the women who receive ANC services at UTH come not only from all over Lusaka, but also outside of the city. Thus, UTH does not have a community as such to target with sensitization activities or from which to seek community support. Consequently, the coverage of counseling and testing among all antenatal attendees seen at UTH is very low, less than 4 percent.

The second population in the PMTCT program at UTH is women who are referred specifically for the PMTCT program. Women are referred from other health centers in Lusaka and voluntary counseling and testing sites such as New Start. These women are motivated and there is a high uptake of the PMTCT interventions among this group.

Table 3: Percent of women who agree to be "on program" (i.e., receive PMTCT interventions of ARVS and infant feeding formula and/or support) and who receive a short course of ARVs (zidovudine or nevirapine), among the total number of HIV positive women who collect their test results or come to the clinic knowing their sero-status.

	Chipata	Keemba	Mbala	Monze	Tulemane	UTH
On program	91.2%	53.8%	54.4%	78.5%	37.1%	79.5%
With ARV (AZT or NVP)	53.4%	30.0%	32.4%	46.7%	20.2%	60.1%

Once women are identified as in need of PMTCT services, the majority of women "join" the program. Some of the reasons for not joining the program include that they tested to know their status but do not want the PMTCT interventions, some wish to discuss the programs with their partner and some do not intend to come back for additional antenatal visits. This is particularly common in Keemba, the most rural site where women have to travel long distance to reach services. Women in Keemba may attend antenatal services once or twice to ascertain that the pregnancy is developing normally but do not continue to travel to services for additional follow-up. Additionally, a substantial number of women who join the program do not receive ARVs. Some of the women have not yet reached 34 weeks gestation. Others delivered prematurely or had misestimated their expected date of delivery and thus delivered before they could receive ARVs. Others delivered at home or another facility and did not report back to the PMTCT program and these were lost to follow-up.

Figure 3 shows an estimate of infections averted by the PMTCT program at Chipata clinic since the introduction of the program using actual data on program utilization and published transmission rates based on a number of clinical trials. Because of the drop-off at various stages of the program—pretest counseling, HIV testing, getting results, delivering ARVs—and assuming that women adhere to their feeding choice, 184 women have benefited from the full package of PMTCT services at Chipata Clinic. Based on clinical trial date, in the absence of a program, approximately 35% or 64 women would have transmitted HIV to their infant during pregnancy, delivery or through breastfeeding by the time the infant is 18 months of age (De Cock, KM et al., 2000). Assuming that the full package of short course antiretroviral and avoidance of mixed breastfeeding followed by weaning the child at six months reduces HIV transmission by 67% (ref), then the expected transmission rate in the women receiving the PMTCT intervention is 12%, and 42 infections would have been averted. If the program at Chipata had been able to identify and deliver the program to 70% of HIV positive women, 425 infections would have been averted. Comparable figures for the other sites are shown in Table 4. A collaborative study between the PMTCT-WG, JICA and Horizons/Population Council is measuring the actual impact of the program in a cohort of women who received services at Chipata Clinic. This information should be available in the first six months of 2003.

Figure 3: Estimate of infections averted at Chipata Clinic assuming that women who receive ARVs and select "safer feeding option", have a transmission rate of 12% compared to base rate of 35%.

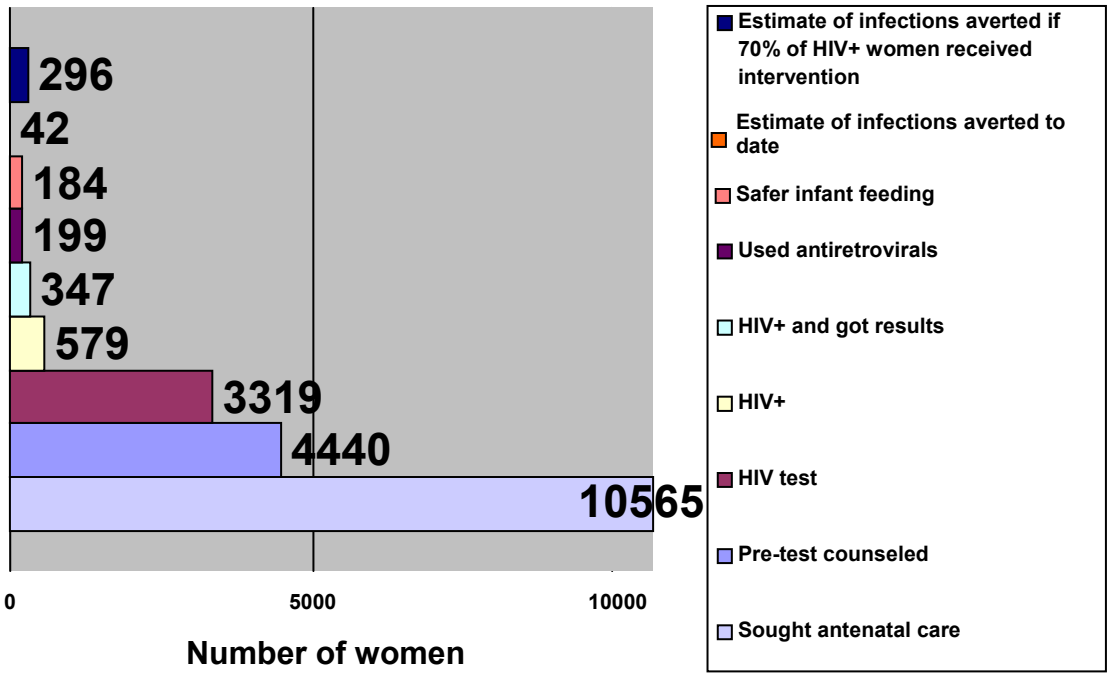


Table 4: Estimate of pediatric infections averted at assuming that women who receive ARVs and select "safer feeding option", have a transmission rate of 12% compared to base rate of 35%.

	Chipata	Keemba	Mbala	Monze	Tulemane	UTH
Estimate of infections averted to date	42	5	5	14	4	36
Estimate of infections averted If 70% of HIV+ women at site received intervention	425	43	28	110	36	553

PMTCT Information and Knowledge

The program shows good progress in integrating PMTCT and HIV information into MCH care at the pilot sites. Among the 156 clients who responded, 87 had discussed HIV transmission among adults with a health provider, 93 had discussed HIV transmission from mother to child and 87 had discussed HIV testing. PMTCT information has also been disseminated beyond the clinic setting. Other sources of PMTCT information reported by clients were radio (22), someone in the community (22), drama group (13), church (12), TV (8), poster (5), newspaper (3) and pamphlet (1). 38/156 women reported that they had received brochures and other educational materials on PMTCT and on HIV/AIDS from the clinic to take home on that particular day.

The rapid assessment found that knowledge about the program's existence is fairly high among those who participated in community focus group discussions, confirming that the program is known in the community. Drama groups, including drummers, were repeatedly mentioned. Women tended to have more accurate information about PMTCT, which is not surprising since PMTCT information is becoming integrated into MCH services as noted above. However, in Lusaka, some of the men in the group had decent knowledge regarding MTCT.

Although less than half of the providers interviewed had participated in a PMTCT training course, knowledge was quite high. This is due to on-site training by supervisors and colleagues as a response to rapid staff turnover. However, this training is by definition not as comprehensive as the full course offered by the PMTCT program. Most though not all providers knew that HIV could be transmitted during pregnancy (40/45) and labor (42/45) and all of the providers interviewed knew HIV could be passed through breastfeeding. To assess provider knowledge of transmission risks during pregnancy and breastfeeding, providers were asked to estimate the probability of transmission at these two stages. Two providers thought that HIV was not transmitted during pregnancy, 19 thought the probability of transmission was between 5 and 20 percent (a figure consistent with the published literature) and 24 thought that the probability was greater than 20 percent (with 7 providers responding the probability was 80 percent or greater). Providers were even more likely to overestimate the probability of HIV transmission through breastfeeding. Only 1 provider thought the likelihood was zero, 14 reported it to be between 5 and 15 percent (the "right" answer), and 30 providers estimated it to be

greater than 15 percent, with more than half of this group believing that the probability of transmission during breastfeeding was greater than 50 percent.

Providers were also asked to name the various ways a mother could reduce the risk of transmission of HIV to her child in pregnancy. The response includes suggestions for HIV positive as well as HIV negative pregnant women. The majority of the providers said that the mother should take medicine (ARVs) (30/45) and practice safer sex and/or use of condoms (26/45). Twenty-two providers mentioned seeking good antenatal care, 8 mentioned abstaining from sex, and 15 mentioned better nutrition. One provider said she did not know. Twenty four providers had other suggestions, which included avoiding breastfeeding and choosing another feeding option (6), going for VCT in order to access PMTCT (9), receiving the minimum package of care on PMTCT (7), health education (2), primary prevention (7), disinfecting bath tubs and avoiding other infections like malaria.

Community members thought that overall the program was very good. It was helping babies to not get infected with HIV. Community members indicated that they would like to see more information and education taking place within the community as some community leaders, men and women remain ignorant as currently only pregnant women receive information at the clinics. Equally, sensitization was needed in the community to reduce stigma for HIV+ individuals. The community saw itself as having a role to play within PMTCT programs. Some community workers, volunteers, and PLHAs indicated that they should be asked to mobilize the community, and be paid for doing so. Peer support groups for HIV+ mothers were needed in the community.

HIV Counseling and Testing

Almost all clients (132/148) indicated having received information on HIV counseling and testing at the antenatal clinic; most (112) said that they had heard about HIV counseling and testing in the group health talk. The vast majority of the clients said that they liked the group talk. The reasons cited included: "*the contributions from other fellow clients… questions asked by other clients… many people hear the message at once… I gained knowledge*." A small number of clients expressed disliking the group talk, and the most common complaints were the lack of privacy or opportunity to ask questions. (All of the responses indicating dislike came from rural or semi-rural areas). They did not feel comfortable asking questions or discussing personal issues in a group.

87 (of the 132 who had received information on HIV counseling and testing at the PMTCT sites) responded that they also had a one to one talk with a counselor about having an HIV test. When asked what they liked or disliked about the one on one talk, the responses were extremely positive and women repeatedly mentioned the following as examples of things they liked: learning more information about HIV, having a counselor show concern for them, and feeling free to say and ask anything. Many women commented on how they appreciated the privacy. In the words of one woman, she liked "*the privacy of being the two of us, the counselor and me*."

Half of the respondents (63/125) said they had talked to someone else before making a decision to take the test. Almost all of the women spoke with their husbands, while just a few had spoken with mothers, sisters and friends.

98 of 148 women indicated they had taken an HIV test. The majority (78/98) received the results. We asked clients to describe their reasons for wanting to receive test results. Almost all the responses gave the reason of wanting to know her HIV status, with a few elaborating that knowing HIV status would allow them to know how to take care of themselves and/or their babies. About half of the clients who did not receive their results indicated that the results were not ready or the counselor/nurse was not available. The others had various reasons such as living far from the health facility, wanting to consult with their husband, or simply not wanting to know. Almost all the respondents felt positively about the quality of the counseling session. The following are examples of what clients had to say: *"I felt supported and respected."* "*It was good, because it really prepared me for the results so much that even now I am comfortable with my status."*

Three quarters of women who received their results (60/80) indicated that the counselor discussed with them regarding sharing test results with someone else. The majority (64/80) stated they shared their test results with someone. Most clients said they shared their HIV results with their husbands, while a few mentioned mothers and friends.

During the posttest counseling of HIV negative women, about one-half of clients (27/52) recall the counselor discussing the window period and/or the need to be retested in 6 weeks or 3 months. Risk reduction was reported to have been discussed in the majority (42/52) of posttest counseling sessions with HIV negative women. The overwhelming majority of the HIV negative clients felt that the HIV counseling they received at the clinic made a difference regarding their knowledge on HIV. Many commented in general that they learned things they didn't know and about increased knowledge regarding primary prevention. Knowing their (HIV negative) status also made them feel confident and better about their future.

During the rapid assessment, 38 HIV positive women responded to questions about their posttest counseling experience. Almost all (35/38) women stated that the counselor had explained what it means to be HIV positive for her and the baby. Most clients understood being HIV positive as having the virus that causes AIDS. Several women mentioned that their babies might get the virus, while others mentioned they could take medicine to prevent passing the virus to their babies.

In terms of knowledge acquired during the counseling session, most of the respondents said the counseling made a difference, citing examples of new or increased knowledge regarding what it means to be HIV positive, self care and PMTCT (with several specific comments about how taking drugs could prevent transmission). Some clients spoke about their improved psychosocial state, for instance, "*before the session I was full of fear" and another spoke of "no longer being afraid."*

Nearly two thirds (24/38) said the counselor asked/discussed whether they wanted to share with someone that they are HIV+; four-fifths (19/24) of these women said that the counselor helped them plan or practice how to do that. 35/38 clients said that counselors talked about ARVs and advised them to take them, while only 2/38 clients said they were just given the drugs. Again, 35/38 women said that counselors talked to them about how and what to feed the baby. 33/38 women said the counselor asked them to come back.

In general, community members had positive attitudes about the VCT offered during ANC. The communities feel that it is important/good for a pregnant woman to know her HIV status early in pregnancy or before delivery so that preventive medicine, nutritional supplements and infant feeding options could be discussed/obtained. The community informants indicated that they believed that the health workers were doing a good job and that counseling was usually well done. Some respondents thought that counselors were giving encouraging positive messages to HIV positive individuals, which was a good enough reason to go for VCT. Health workers were reported as treating people the same regardless of HIV status and that the community did not have fear of going for testing because of what the health workers might say or do. It was also mentioned that women had confidence in the health workers otherwise they wouldn't be going back for posttest counseling. Overall, they felt that confidentiality was well respected, though there were some criticisms of a counselor asking a PLHA to discuss a client's results without the client's consent.

Provision of Short Course Anti-Retrovirals

The provision of a short course of ARVs appears to have positive benefits for HIV positive women. It makes them feel they are taking good care of their baby, but the results also suggest that more attention needs to be given to ensuring that the drugs are taken correctly. This should also include ensuring that providers are able and willing to address women's questions about ARVs and supporting safe disclosure of HIV status, in order to maximize the potential efficacy of drugs.

Among the 32 HIV positive clients who had been provided ARVs and were interviewed, 30 women indicated they received ARVs to prevent mother-to-child transmission of HIV. Half of the women (15/30) said they had been given AZT, 1 had received Nevirapine, while 14 could not remember the name of the drug. Almost all women (28/30) said they took the tablets as instructed. However, when asked how to take the antiretroviral drug provided, of the 27 that responded, 17 knew the correct way to take their tablets, while 10 gave wrong or ambiguous responses.

Nurses, nurse counselors and midwives mainly dispensed the drugs. At Tulemane (small primary health center), the lab technician was also providing the drugs. While most providers who regularly dispense the ARVs named the correct dosage, six gave incorrect dosing information (4 for AZT and 2 for Nevirapine) when asked how they dispense ARVs. A substantial number of providers said they mentioned the fact that the drug was meant for reducing transmission to the baby and was not a cure for HIV, some mentioned that they should not share their drugs. A few went ahead to explain that the drugs acted by reducing the viral load. Some mentioned that anemia was a likely side effect of AZT and explained the need for Hemoglobin testing.

All 30 women said the providers' instructions for taking the tablets were clear. 27/30 women indicated that the provider explained the purpose of the drug, while 3 indicated that the provider hadn't. 15 women said they had questions regarding the drug, yet only 2 women said the provider answered their questions regarding the drugs. Slightly less than half of the women (14/30) said that they had told someone that they were taking the drug. The majority told their husbands while a few told their mothers.

The majority (20/29) of providers who dispensed ARVS said they followed up their patient's use of ARVs in some way or other. Methods of follow-up mentioned included patient report and pill count when the mother comes back for another dose or during home visits and direct administration of the drug by a provider while the mother was in labor. However, nine providers said they had no way to check that their clients were using the ARVs correctly since they could not visit them at home and so had to rely on what their clients tells them.

About half the providers (13/27) had encountered some difficulty in providing ARVs. Reported problems included side effects such as vomiting and dyspepsia, the client or her partner responding unfavorably to taking a number of medications (e.g., iron, multivitamins, septrin and ARVs), and women becoming anemic and AZT having to be stopped. Some women given AZT at 36 weeks would deliver soon after without taking the drug for the minimum two weeks. Also, many women were not sure of their last menstrual period, thus making it difficult for providers to determine the exact age of gestation and when to start AZT.

When asked "how do you feel about taking the tablets," 16 of the 25 responses were positive with women reporting they felt "*good, cared for, relieved.*" Several women spoke about how the drug would help their baby – "*I feel good because my child is healthy.*" When the women were asked if they would recommend that other HIV positive pregnant women take these drugs, all the respondents answered affirmatively, because "*at least the baby has a chance not to be infected.*" In short, according to one respondent, "*I would tell other mothers because it helps their babies*."

Infant Feeding Counseling

Providers demonstrated good knowledge both in the provider interview sessions of the advantages and disadvantages of exclusive breastfeeding for six months, exclusive breastfeeding for three months, wet nursing, infant formula and expressed heated milk as the infant feeding choice for an HIV positive mother. Most providers were not familiar with milk banks and home prepared modified animal milk. When speaking to an HIV positive woman about infant feeding, counselors saw their role as to give information, encouragement and support and assist in making a decision about an infant feeding option.

However, most providers showed a bias towards infant formula as the preferred infant feeding method for HIV positive women. When asked "What are your opinions about HIV positive women who breastfeed?" 4 providers gave a positive opinion, 18 gave a negative opinion mostly about the risk of infecting the child through breast milk, and 8 said they were neutral and that it was the woman's choice. Similarly, in response to a question on "What are your opinions about HIV positive women who do not breastfeed?" 28 providers had a positive opinion that the woman was doing the "right thing", one was negative, and 7 were neutral. Finally, in response to a question on whether they thought there was one best infant feeding method for HIV positive women, 21 providers replied formula, 1 replied exclusive breastfeeding for 6 months, and 10 said there was no best method—each had advantages and disadvantages. (One said we need to evaluate the program and see!) Providers were nearly unanimous in recommending breastfeeding for HIV negative women, though one mentioned the concern that the HIV test result might be a false negative, and four others said it is the mother's choice. Providers' opinions about breastfeeding by HIV positive women and the optimal choice of feeding method for HIV positive was unrelated to whether he/she had received training on infant feeding counseling, nor were there systematic differences among sites in these opinions.

The information collected in the observations and exit interviews shed light on the provider-client dynamic in which ultimately the providers frequently steer women towards an infant feeding method based just on her HIV status. According to our observations, a considerable amount of information was provided. The observers noted that during the 42 observations of infant feeding counseling sessions, providers almost always discussed the advantages and disadvantages of exclusive breastfeeding for three or six months then abrupt cessation and formula. Expressed heat-treated milk and modified animal milk was mentioned in about one-third of sessions, and wet nursing was mentioned in five sessions. Yet in the majority of sessions, counselors were not ascertaining the client's specific circumstances, which is necessary to help women consider her ability to implement various feeding choices. For example, only 10/42 providers inquired whether the mother had money to buy formula and only 6/42 asked whether the client had access to adequate supplies of water and fuel. Just 7/42 asked whether the client had disclosed her HIV status to her partner, and 5/42 asked whether the client had disclosed her HIV status to other family members or close friends.

In slightly over half (26/42) sessions, the providers adequately explored (and in 12 observations "somewhat" explored) the feasibility and acceptability of various feeding options. Every provider observed with the exception of one (41/42) made suggestions rather than commands about infant feeding options. Half of the providers (21/42) directly addressed partner involvement in infant feeding decisions, more than half (23) did so somewhat, and one-fifth (9) did not.

However, from the client perspective, the counselors are seen as providing convincing, sound, comforting information about what the optimal choice is and are helping women feel they have made a good decision (even if they have not made much of a decision but rather followed the counselor's lead). In the exit interviews, the majority of the 69 women who had received infant feeding counseling indicated that the counselor had explained just one option (infant formula feeding was the most popular option, followed by breastfeeding). However the majority (47/69) of women felt that the infant feeding counseling session had helped them decide how to feed their babies. 30/69 of the respondents said they had chosen formula feeding, while the rest had decided to breastfeed, with eleven opting to feed as per norm while the rest specified exclusive breastfeeding for either 3 or 6 months respectively. Despite most women indicating that they did not receive more than one infant feeding choice, only 15/69 reported that they felt a particular option was being promoted. In the voice of one woman, *"I understand what it meant, that is why I chose infant formula."* 54 women said that the counselor had also discussed safety issues with the chosen feeding methods.

Community members also demonstrated good knowledge of the complexity of the infant feeding decision and could cite the advantages and disadvantages of breastfeeding and formula for the HIV positive mother. Several key issues emerged from the community discussion on infant feeding. First, both exclusive breastfeeding followed by early cessation of breastfeeding, on the one hand, and infant formula, on the other, are contrary to community norms on infant feeding and generate some level of derision that children are being fed inadequately. Second, family and particularly partner support is needed for a woman to successfully manage infant formula. One discussant said *"If you stop the child from breastfeeding, the family would take it that the wife has brought the disease especially if the husband is looking healthy and it would bring hatred. So it would be good if the couple is counseled together."* Another man highlighted how he can be a supportive partner: *"Okay, looking at the in-laws and other relatives, when my wife tells me that she will not breastfeed, then I should sit with my family (parents) and explain that we have a problem, we have been found to be HIV positive, and if they are reasonable they would understand."* Family issues are particularly difficult for younger, newly married women to manage.

Community members also felt that HIV positive women should be open about their status and serve as peer counselors. They are preferred as a source of support for infant feeding issues because they are like the other women in the PMTCT program rather than health providers, who are seen as old and long removed from their own experience with feeding an infant.

An issue for providers and the community is that there be a reliable supply of infant formula and/or milk for babies. This is seen by both groups as important to maintaining the credibility of the program.

Partner Involvement

Generally it was felt that a husband and wife should make decisions regarding testing, PMTCT and infant feeding together. A woman at Keemba said, "*The only thing is to agree with your husband from the time you conceive not to do things on your own. When you want to be tested tell him, and when you come out positive explain to him in a nice way and then decide together on the infant feeding option."* Some women want to join the program but they can't because the husbands refuse, and when the baby dies the woman becomes sad because she believes the baby could have been saved.

But men at Chipata clinic felt that outreach workers in the community are sidelining the men and are only interested in gathering women. Men are not usually invited nor included in the activities, so men walk away. *"The health workers do not understand the role men can play and that HIV is mainly a male problem. They also tell women about the need for VCT but the problem is with us men."* Most discussants said that men need to be well informed so that they can stand by their woman if she tests HIV positive and make decisions together. They proposed that men should be targeted and sought in male friendly places such as bars, church gatherings, etc., *"because when our spouses ask us to escort them to the MCH, we are not comfortable with the clinic settings."*

A male discussant in Monze said that, mothers know about the program because they are given pamphlets, *"but the head of the home is a man."* It was heard that this has resulted in some women being discouraged (by their husbands). It was clear from these discussions that most women are unable to convince their partners to go for VCT if they have access to the information first. "*Women are unable to convince men – until when RHC staff explain."* It was heard that, however, once the men acquire the information about the program most of them become very supportive. A man in Keemba best summarized this "*the PMTCT program also helps us (men) know our status, this way we can be able to prevent our children from contracting the disease."*

Antenatal Care

A comprehensive antenatal package is the foundation of the PMTCT program in Zambia. A full antenatal service should be offered, which includes maternal tetanus toxoid immunization, STD screening and treatment, iron and folate supplementation, malaria intermittent preventive treatment; tuberculosis treatment, where appropriate; and information on HIV prevention, VCT, infant feeding, and family planning. The PMTCT program strives to strengthen these serves while fully integrating ANC and PMTC activities.

49 observations of antenatal care sessions were completed during the evaluation. Some providers were observed numerous times including one traditional birth attendant (TBA) in Keemba who was observed six times. Table 5 shows the frequency of occurrence of recommended history and physical examination activities and the provision of selected medications during these antenatal visits. Table 6 gives results on how frequently various HIV and other safe motherhood topics were discussed during the antenatal visit.

Overall the standard history taking and antenatal examinations were routinely performed. However, there was more variability in the performance of assessments of conditions which may impact on the mother's or baby's health such as STIs, including syphilis, TB, and anemia. Preventive medications such as intermittent preventive treatment for malaria, mebendazole and vitamin supplements were also not routinely given. As was seen with the reports of clients about HIV topics discussed during their MCH visit, about half of session included discussion on HIV. While this does show progress in integration of PMTCT and ANC, there are still many missed opportunities to discuss HIV and other safe motherhood topics with clients.

Table 5: Frequency of recommended antenatal care activities and medications provided during antenatal visits, based on observations of antenatal visits.

	Yes	No	Not applicable	Missing
Client's blood pressure plotted on the maternal card	49			
If BP was high, follow-up care provided	5	2	40	2
Client's weight plotted on card	40	5		4
Obstetric history taken	26	1	22	
Relevant medical history taken	24		25	
Relevant family and social history taken	22	2	25	
Provider inquired about fetal movements	48	1		
Provider checked for anemia	41	8		
Provider palpated for the fundal height	49			
Fetal heart monitored	49			
Provider checked for oedema	49			
Client was assessed for STIs or UTI	32	16		1
Client offered treatment for STI	5	6	38	
Client assessed for TB	2	47		
Client offered treatment for TB	0	2	47	
Provider offered intermittent preventive treatment for malaria	24	16	9	
Vermox (mebendazole) given	11	25	13	
Tetanus Toxoid (for current pregnancy)	36	1	11	1
Syphilis screening (for current pregnancy)	33	10	6	
Hemoglobin test (for current pregnancy)	27	14	8	
Malaria prophylaxis (for current pregnancy)	27	22		
Folate and iron (for current pregnancy	43	6		
Vitamins (for current pregnancy)	30	19		

Client was given opportunity to ask questions	39	10		
Client's questions were adequately addressed	31	1	17	

Table 6: Frequency of discussion of HIV and other safe motherhood topics during antenatal visits, based on observations of antenatal visits.

Topics	Mentioned	Not mentioned
HIV transmission among adults	25	24
MTCT	27	22
Advantages, disadvantages, or availability of HIV testing	26	23
Meaning of HIV results	17	32
ARVs	0	49
Other STIs	31	18
Self care	21	28
Maternal nutrition	12	37
Preparation for delivery	11	38
Danger signs of pregnancy	8	40
Breast feeding	18	31
Replacement feeding	11	38
Family planning	11	38
Other, specify	3	46

Observers were given an opportunity to provide comments about the ANC sessions observed. These comments include positive and negative remarks about the quality of antenatal care sessions. For example, in Monze the observer noted "the provider gave information covering almost all health education topics on pregnancy and lactation in a very pleasant manner. She did a running commentary of all procedures she was performing on the client and made the clients feel at ease and comfortable." In Keemba, the nurse offering antenatal care explained in detail that pregnancy was not a disease but a condition to be enjoyed. Furthermore, the observers were very impressed with the professionalism displayed by the TBA and it was obvious the TBA had been well trained in obstetric care. PMTCT brochures were provided to clients in both Monze and Keemba. Observers noted that in Keemba and Mbala nurses who were not trained midwives were providing ANC services and exhibited some deficiencies in carrying out examinations and providing PMTCT information. Services in Mbala and Tulemane were affected by shortages of equipment and supplies such as lighting, weighing scales and reagents for HB. Several observers noted that some antenatal sessions were quite short and/or did not include all of the examinations and information giving specified for a quality service.

Labor And Delivery Practice

The Zambian minimum package of care for PMTCT emphasizes intra-partum care that reduces the probability of HIV transmission. This includes an emphasis on keeping the membranes intact for as long as possible, use of aseptic techniques in conducting deliveries, and avoidance of invasive procedures, such as episiotomies, unless absolutely necessary. Providers generally do not perform routine artificial ruptures of membranes or episiotomies. A few answers suggested that this is a change since the PMTCT training. Of those who said they did routine perform these procedures, many tended to use artificial rupture of membranes or episiotomies as a means to accelerate labor in the case of delayed labor. Most providers (23/26) said they performed vaginal exams on all women in labor except those with vaginal bleeding and those who had pre-term rupture of membranes and they limited vaginal examinations to only those necessary to monitor labor. The majority of providers (20/26) always cleansed the vagina, and some gave the solution used as chlorhexidine 0.25%.

Family Planning

Family planning counseling was observed to be generally of good quality with providers establishing good rapport with clients, explaining the advantages and disadvantages of the various methods, and demonstrating proficiency with family planning provision procedures. However, there was little integration of HIV issues into family planning. Among the 48 family planning sessions observed, providers mentioned HIV transmission in 12 sessions, MTCT in only 8 sessions, and HIV testing in 9 sessions. That the risk factors for HIV and pregnancy are the same was only mentioned in 10 sessions, and dual protection through the use of a condom, as well as a family planning method, was only mentioned in 16 sessions.

The topic of family planning did not generate much discussion in the community focus groups however two issues did emerge. In one site (Keemba), it was mentioned that family planning could be used to reduce MTCT. During the focus group discussion at Chipata clinic some discussants agreed with the above sentiments, while others had opposite views. "*Although Family Planning counseling is a good strategy of preventing MTCT, the problem is if people were to use condoms all the time, there would be no children in the compound. So the drug (ARV for PMTCT)) is giving hope to us HIV positive individuals about the possibility of having healthy children. We must tell people not to use condoms but to go and access PMTCT in order for them to have children."* The sentiment that the PMTCT program would and should encourage HIV positive couples to have a child was echoed in other discussions.

Care, Support, and Stigma

Interestingly, the dominant issue when asked about the care and support of HIV positive individuals was stigma and discrimination more so than medical, material or social

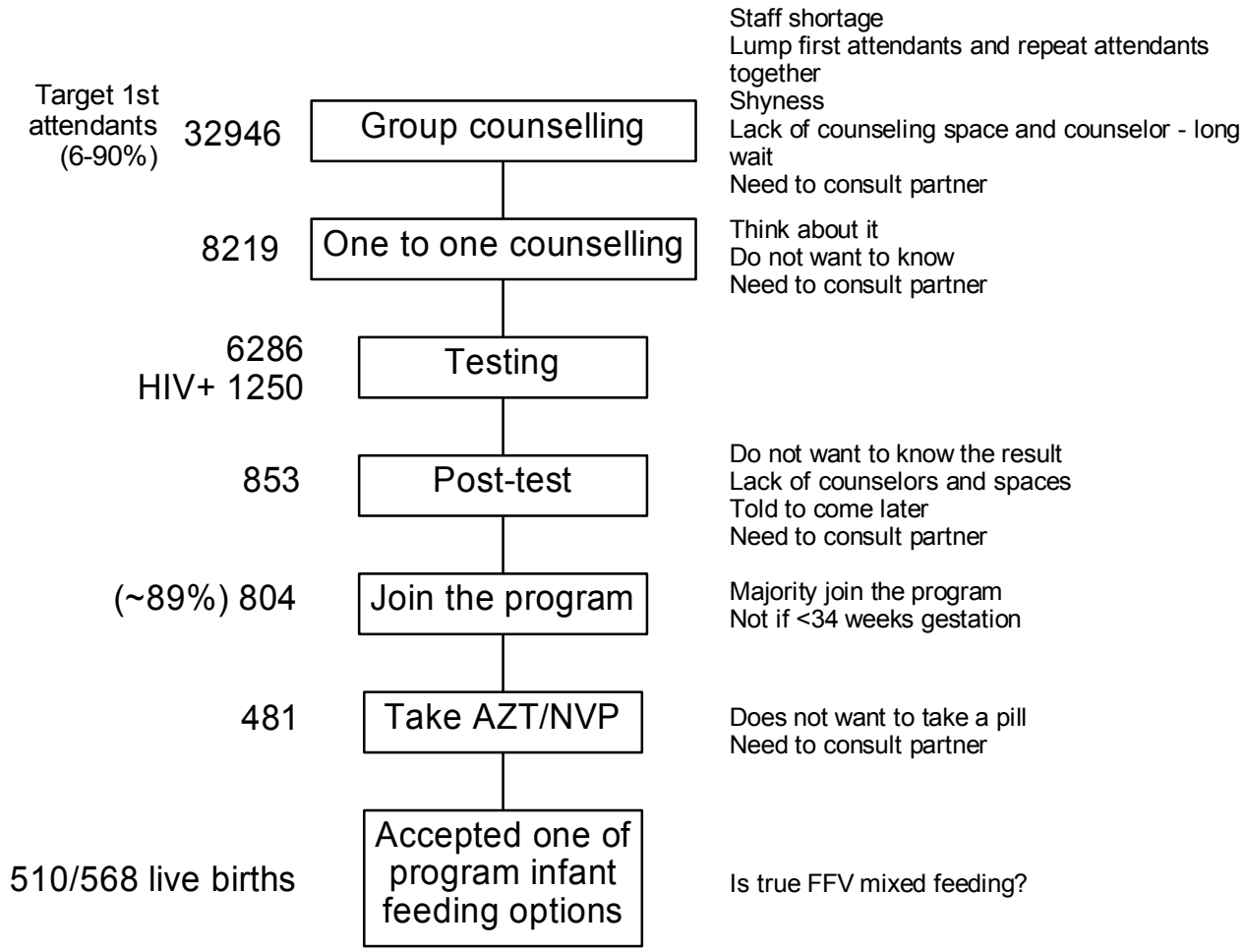
support. The community saw the care and support offered by health workers to be comprised of messages about living positively with HIV, introduction to the PMTCT programs "which supports them [the clients] with food," treating HIV positive women without fear, treating them the same as HIV negative women, and maintaining confidentiality. A woman's HIV status is revealed to the community when she breastfeeds for only six months or uses formula. The discussion group participants were divided about the extent of stigma in the community; some community members believed that stigma was widespread (more so in Lusaka that in the rural areas), and that many HIV positive women and men had been isolated or abused by their spouses and/or families once they revealed their HIV status. However this contradicted with the specific experiences cited, which were of people living openly with HIV and accepted by their families. One factor mentioned which contributes to stigma is the lack of supportive follow-up after VCT of these patients. Factors that are contributing to a reduction in stigma include the greater number of people who have been tested and perhaps inescapable openness about their status, which is revealed when they use the PMTCT program, and more knowledge of the prevalence of HIV that leads many people to suspect they may be HIV positive.

The only other care issue raised repeatedly was access to staple foods. It is important to note that the food situation in some of these sites is precarious at the best of time due to poverty but at the time of the assessment Zambia was experiencing critical shortages of staple foods. The main care and support activity mentioned in the discussions was that of food provided by the clinic and by people in the community.

A number of strategies for increasing health provider's role in reducing stigma were suggested by the providers themselves. These include providers going into the community and providing community education with the aim of increasing community awareness of HIV and MTCT and creating support for PLHAs, so that they know that *"HIV is not a sin."* It was also emphasized that providers should treat all women (positive and negative) similarly without showing preferences. Providers should maintain and reinforce privacy and strict confidentiality. Lastly, they should foster the creation of community support groups such as post-test clubs for women living with HIV/AIDS.

Service Uptake is Affected by a Myriad of Supply and Demand Factors

The schematic below shows the number of women who have accessed antenatal care and the various PMTCT services since the program was introduced. It synthesizes how the PMTCT supply and demand factors discussed above interact and affect the coverage and effectiveness of the program. Some suggestions for building on the strengths of the program documented in the rapid assessment as well as addressing some of the impediments to program success are addressed in the final section of this report.



LESSONS LEARNED FOR REPLICATION AND SCALE UP

Human Resources

There is a dire need for the Ministry of Health to employ more staff. There is a critical shortage of trained health personnel, and the few available are already overburdened, on top of which a new program was introduced to be performed by the same personnel. Providers are working in a very difficult situation, often without sufficient universal precautions for protection and with almost no access to post-exposure prophylaxis if they are exposed to potentially contaminated body fluids, despite the very high HIV sero-prevalence rates. There are few job aids, i.e. utensils for demonstration of preparation of baby formula, etc. PMTCT programs should be realistic about the staff required to implement the program and acknowledge the needs of their providers to be protected and to have the basic tools need to conduct their work. Part of planning for scale-up should

include planning and budget for additional staff, universal precautions, and post exposure prophylaxis for all PMTCT providers.

Despite these hardships, the PMTCT program was praised by most providers because it provided good services, enabled clients and providers to know the woman's HIV status which helped in providing care or because of its focus on protecting babies and making them healthy. For some providers, the program enhanced morale because they felt they are providing a useful service to the community, the program provided extra allowances and brought supplies. The PMTCT program should recognize these motivational factors and capitalize on them as it strives to engage and support committed providers.

Training

Training needs to be an ongoing activity as diverse and large numbers of providers are involved in the delivery of PMTCT services. There is very high staff turnover, and to succeed with in-service training, there has risen a need to train provincial pool of facilitators, so that training could be decentralized. The conceptualization of training could be expanded to incorporate on-site teaching and learning including peer-to-peer training so that providers can provide on-the-job-training for new colleagues who take up responsibility for PMTCT services. However for the training to remain sustainable, pre-service training will have to be introduced in all nursing and medical schools.

Infant Feeding Counseling and Support

Providers demonstrated a bias towards infant formula as the infant feeding method for HIV positive women. Additionally, the provision of infant formula by the PMCT program is highly valued by the community. The safety of the use of infant formula in these communities is unknown. As part of planning for replication and scale-up, safety data should be collected and combined with the information provided by providers and the community about the role of formula in preventing MTCT. Data on feeding patterns and link with HIV transmission will be available next year from a longitudinal study of a cohort of women utilizing PMTCT services at Chipata. These data can then guide the program in updating training materials and recommendations regarding infant feeding counseling and support. If the PMTCT program takes the decision to no longer provide free formula, the impact of this decision on program acceptability and uptake needs to be considered and addressed.

Partner Involvement

Male involvement and support is critical to the success of PMTCT programs. The PMTCT program should 1) focus their efforts on providing information directly to men and 2) locate these communication activities for men outside of the antenatal clinic. Antenatal clinics are women's spaces and not easily adapted to accommodate men. Examples of these approaches include:

- Targeting male community leaders with PMTCT education and information
- Offering community education on PMTCT in locales where men congregate such as bars, football fields, taxi stands
- Creating discussion/support groups for men.

Peer counseling

The community and providers strongly recommend that HIV positive women who went through the PMTCT program be mobilized as peer counselors to provide information and support to women currently in the PMTCT program. They are seen as potential assets to the program because they have shared the same experience and are of a similar age and background to the women in the program. They thus have a high degree of credibility and can offer welcomed advice and support. Additionally, if more women are open about their HIV status, the providers and community believe that this would contribute to a reduction in the stigma attached to HIV infection.

Missed Opportunities in ANC to Address HIV (and Safe Motherhood)

The rapid assessment results show progress in integration of PMTCT and ANC, yet there are still many missed opportunities to discuss HIV and other safe motherhood topics with clients. Each ANC contact has the potential to address HIV through both improving the health of the mother in pregnancy and by providing women with information about counseling, testing, reducing the risk to her baby, and protecting herself. As the PMTCT programs mature and strengthen their linkages with other programs such as safe motherhood, there is considerable scope for both programs to strengthen the provision of an integrated ANC service which addresses all aspects of maternal health.

Family planning and HIV

Family planning, by helping HIV positive women to prevent a mistimed or unwanted pregnancy, is another important PMTCT strategy. The use of barrier methods of family planning can also be a primary prevention strategy by protecting the woman from sexually transmitted infections, including HIV. While the family planning services observed at the pilot PMTCT sites were of good quality in terms of providing women with information about a range of family planning methods and somewhat exploring a client's fertility preferences, the majority of sessions did not address the dual risk of unwanted pregnancy and HIV infection, nor did they raise the issue of considering one's HIV status or getting an HIV test as part of the decision about using family planning or choosing a method. Some members of the community also suggested that now that there is a PMTCT program, HIV positive women/couples no longer need to use family planning. These results suggest that there is a need to update the guidelines and training (or offer refresher training) for family planning provision.

Supply system is good model

The supply system is a good model of effective integration with existing systems. While most medical and drug supplies have been procured by UNICEF, the PMTCT drug distribution system utilizes the already existing government infrastructure for drug distribution, Medical Stores, to store and deliver supplies and the existing district and site level mechanisms for stocking clinics. This system has worked well and clinics have experienced relatively few outages of essential supplies. As a result, providers and clients praise the PMTCT program for making additional drugs available in the clinics. HIV test kits are procured and distributed through the National VCT Program and the PMTCT Secretariat has the responsibility of coordinating with this program to ensure that adequate number of tests kits are ordered and delivered.

Scaling-up

Considering that HIV/AIDs is an emergency in Zambia, the PMTCT Working Group, together with its co-operating partners, has recognized the need to begin scaling-up as soon as possible. The PMTCT-WG has moved a step further this year with the inclusion of new sites in Monze and Mbala districts. Scaling up into the private sector is also ongoing. The PMTCT-WG has trained health workers and provided IEC materials at the private hospitals of Konkola Mine in Chingola and Chilabombwe, which serve a client population of more than 50,000. These health workers are now training government health workers.

The PMTCT-WG has developed an expansion plan that lays out specific objectives and strategies for scaling up. In particular, they identify the need to fully involve key partners such as district authorities, traditional chiefs, doctors working in government and private settings, persons living with HIV/AIDS and the Safe Motherhood/Child Survival Programs and to position the PMTCT program within a continuum of care and support for HIV infected/affected individuals. The expansion plan describes the proposed minimum package of care for PMTCT, the necessary program support activities—formative research, communications, health worker training, working with the Zambian VCT services to ensure VCT services are available, provision of supplies, upgrading institutional capacity, strengthening referral and support systems and monitoring and evaluation, building pre-service training capacity, provides criteria for site selection, and identifies the districts where PMTCT should be scaled up in the first year of the expansion phase.

Since there are many governmental and non-governmental players involved in the implementation of quality PMTCT services, an institutional framework is being developed to provide the leadership, coordination, guidance and resource mobilization necessary to maintain and sustain the PMTCT program. Expansion requires CBoH leadership and district ownership and funding of the district PMTCT programs through CBoH. A special effort will be made in the area of clarifying institutional roles and coordination in the coming months.