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CONTENTS

Implementation of the prevention of mother-to-child transmission of HIV programme in Zimbabwe: achievements and challenges

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Abstract

Recent scientific developments have led to feasible and effective interventions to reduce the risk of mother to child transmission of HIV. Even in resource poor countries, PMTCT programmes are being articulated as a priority in the national strategic frameworks. Thus PMTCT programmes are moving from being pilot projects to national programmes comprehensively integrated into other reproductive health programmes or HIV and AIDS prevention, care and support programmes.[1]

In Zimbabwe the prevention of mother-to-child transmission (PMTCT) of HIV infection has become an important national task. The 2001 national survey of HIV prevalence among women attending antenatal care revealed that 29.5% of the women were HIV positive.[2] While an effective PMTCT programme using nevirapine can reduce the rate of this transmission by 50%,[2] the Zimbabwe PMTCT National Expansion Programme has had its share of achievements and challenges since its launch in 2002.

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Introduction

HIV transmission from mother to child remains the second most common mode of HIV transmission in sub Saharan Africa after heterosexual transmission.[3]

Efforts to reduce this transmission have seen the implementation of the PMTCT National Expansion Programme in Zimbabwe, in 2002. Provinces were asked to step up their coverage and have at least 50% of their district hospitals implementing PMTCT activities by the end of 2002.[4]

The PMTCT national expansion programme is guided by a protocol of planned activities that involve:

1. Community social advocacy and mobilization for the programme at all levels.
2. Group information about PMTCT to pregnant women attending antenatal care.
3. Voluntary counselling to willing mothers (pre and post counselling).
4. Conducting HIV rapid testing.
5. Administration of nevirapine to HIV positive women.
6. Modifying obstetric procedures when delivering HIV positive women.
7. Administration of nevirapine to babies born to HIV positive women.
8. Follow up of mother and baby pairs.[2]

This paper reviews the achievements and challenges met in the various stages of the Zimbabwe PMTCT National Expansion Programme.

Achievements.

Resource mobilization.

The Ministry of Health and Child Welfare opened doors to both international and local donors for financial and technical support of the national PMTCT Expansion programme. Among the donors who responded to this request were WHO, UNAIDS, CDC, KAPNEK CHARITABLE TRUST, UNICEF, ISPED, CESVI, COSV, ZVITAMBO, ZAPP, NAC and Hope Humana.[4]

Expansion work for the PMTCT National Expansion Programme started at the beginning of 2002. A national team responsible for the active coordination of the various PMTCT activities was put in place in the AIDS and TB Unit. This team, being funded by KAPNEK CHARITABLE TRUST, strengthened the single coordinator who had beforehand attempted to coordinate this complex national task.

At provincial level, PMTCT focal persons were identified and put in place. In some districts, PMTCT district site managers were also placed. In some PMTCT sites both health and non health cadres were hired with support from donor partners to participate in various PMTCT activities.[4]

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By the end of 2002, out of the 59 districts in Zimbabwe, 32 (54%) had registered for PMTCT and out of a total of 1 370 maternity offering institutions, 952 (69.5%) had registered for PMTCT.[4]

Community social advocacy and mobilization for the programme at all levels.

With funding from different donors, the districts that had registered for PMTCT implemented community and social advocacy and mobilization activities. It was needful that this activity had to be done. Expected behaviors and programme activities had to be explained to communities. Further more, in order to increase client participation, clients' myths and misconceptions had to be cleared first.[5]

Community and social mobilization effectively helps to assess community problems, perceptions and needs that are likely to impinge on the success of the programme. Failure to involve the community at the start of a programme, results in an unsuccessful intervention, as the community *may not know* how to participate.[6]

However, while the noble idea of community social advocacy and mobilization was carried out, information, education and communication materials where not made available to many districts. Matebeleland North was the only province that produced its own PMTCT materials during the 2002 Trade Fair.

The Minister of Health, Doctor D Parirenyatwa, launched the PMCT communication strategy in Chivi district in June 2003. However, this PMTCT national communication strategy has not been made available to PMTCT sites due to production and distribution constrains.

All PMTCT interventions should include a community education component. Before and during interventions, programme planners need to understand community norms and establish meaningful dialogue with community members. In this way culturally appropriate and varied interventions can be designed that meet the needs of beneficiaries living in diverse situations.[5]

Group information about PMTCT to pregnant women attending antenatal care.

This information is given to all women attending *antenatal* care, and to all attendees at any health facility (including men). Topics covered include:

1. General information about HIV transmission and prevention.
2. Specific information on PMTCT interventions that are locally available.
3. Issues of HIV voluntary testing and confidentiality.
4. Information about nevirapine administration.[2]

To aid verbal communication on PMTCT, print or electronic information is needed for reinforcement. In those sites where one finds print or electronic information, the handouts are either too few to be distributed or the language is not appropriate to the local community.

Voluntary counselling to willing mothers (pre and post counselling).

The World Health Organization defines voluntary counselling and testing (VCT) as a confidential dialogue between a client and a care provider aimed at enabling the client to cope with stress and take personal decisions related to HIV.[7] In the sites offering PMTCT services, a total of 1 119 health workers were trained in PMTCT.[4]

However, most of these health workers were not midwives and they do not work in the *antenatal*, delivery or *post natal* departments. Therefore, they do not interact with pregnant women to offer them counselling. With the staff attrition rate in Zimbabwe today, the few that are directly involved with pregnant women, are so overloaded with work that time to give quality VCT is not available. In some sites where donors have put in place extra staff for VCT,[4] they are then left alone to cover the many women needing counselling. Thus they experience stress and burn out quickly.

The infrastructures too are *another constraint for VCT* activities in most sites offering PMTCT as there are no adequate private rooms set aside for counselling. Hence counselling either takes place in offices, side wards, storerooms, or any space available. This situation, affects the ethical issues of client comfort, privacy and confidentiality.

In one local town, Kapnek Charitable Trust funded the construction of private rooms for counselling at Vengere Clinic and at Rusape General Hospital.

Conducting HIV rapid testing.

Due to the *unavailability of laboratory scientists* in many sites offering PMCT services, the Secretary for Health together with the Health Professions Council in Zimbabwe and the Medical Laboratory and Clinical Scientists Council of Zimbabwe gave an exception for nurses to be trained in HIV rapid testing. To legalize the decision, the Health Professions act (Chapter 27:29) had to be amended. A general notice of 2003 of the act then included clauses to accommodate training of Nurse Practitioners in rapid HIV testing for the prevention of parent to child transmission of HIV and voluntary counselling and testing programme.[8]

In the PMTCT programme, the Centre for Disease Control (CDC) is the sole sponsor of HIV rapid testing kits in Zimbabwe. *The nurses trained* in HIV rapid testing are using combinations of Determine, Oraquick, Unigold and Virocheck rapid testing kits. CDC has contracted Geddes Pharmaceuticals to be responsible for the distribution of the HIV rapid testing kits.

The challenges facing availability of the HIV rapid testing kits at site level and the testing itself are.

1. All orders for the kits should pass through the AIDS and TB unit for authorization before they are posted to CDC and Geddes for processing. The time lapse in this logistical process delays availability of the kits.
2. Kits should either be collected from Geddes by individual PMTCT sites or Swift transport company could distributes them to the sites. Due to gross shortage of transport and fuel, most sites are not able to collect their kits. Some sites do not have paid up Swift accounts *hence the company cannot* transport their kits. Due to their geographical position, Swift cannot reach some PMTCT sites.

3. While some nurses have completed the theoretical training in HIV rapid testing, the majority of them, have not yet completed their practicals. Hence certification of these nurses is still pending (as required by the Medical Laboratory and Clinical Scientists Council before they start testing).
4. While the Medical Laboratory and Clinical Scientists Council requires that the nurses pay some registration fee *and annual subscription fee* for practicing in HIV rapid testing, the nurses feel that this extra demand on their hard earned cash is not necessary as they are already subscribing to the Nursing Council (after all rapid HIV testing is not their core business).
5. Since HIV testing is such a sensitive issue, quality control mechanisms for the nurses doing HIV rapid testing have not yet been fully developed.
6. Support and supervision of these nurses remains a constraint, due to lack of transport, fuel and cash for travel and subsistence claims for the managers.

Administration of nevirapine to HIV positive women and to the HIV exposed baby.

Studies have shown that when giving the mother and baby antiretroviral(ARVs) drugs nevirapine is the most cost effective and effective way of reducing HIV transmission to babies. In developed countries, ARVs are taken during pregnancy, delivery and breastfeeding. Through use of ARVs combined with elective Caesarean section and replacement feeding from birth the rates of HIV transmission to babies have been reduced to less than 2% in these countries.[5]

The AIDS Clinical Trial Group (ACTG) protocol 076 conducted in France and USA was the first trial to show evidence that a long course of zidovudine could reduce mother to child transmission of HIV. The intervention reduced transmission of HIV from 26% to 8%.[12] A cost benefit analysis of this zidovudine regime showed that it was not economically viable and applicable in resource poor countries.[13-14]

The Thailand clinical trial using short course Zidovudine revealed a 50% reduction in HIV transmission,[15] Though this shortened course was cheaper, because of the breastfeeding practices in African countries it was found to be unsuitable.[16]

The Uganda clinical trail (HIVNET 012) which involved administration of 200mg of nevirapine to the mother during labour and 2mg/kg to the baby within 72 hours of birth was found to be effective and economically viable for resource-poor countries. In the study, it was found that at 14 to 16 weeks of age, the transmission rate was 13.1% in the nevirapine group compared to 25.1% in the zidovudine group.[17-19] This is the regime that is being used in the Zimbabwe PMTCT programme.

If an HIV positive woman reaches 28 weeks gestation, she is given nevirapine 200mg to take home. As soon as true labour starts, the woman is advised to swallow her nevirapine tablet. Once an HIV exposed baby is born, he/she is also given nevirapine within 72 hours of birth.[4]

The logistical challenges facing distribution of HIV rapid testing kits also affects the distribution of nevirapine. However, other challenges include:

1. Disclosure issues by HIV positive women since HIV is highly stigmatized in Zimbabwe. HIV infected people experience social rejection and discrimination.[7] When an HIV positive women is given nevirapine to take home, she finds it hard to tell other nurses that she has nevirapine. If by any chance she delivers at home, (as was noted in the Zimbabwe Demographic and Health Survey (1999) that a child in a rural area is almost four times more likely to have been born at home than an urban child), she finds it hard to tell the *traditional birth attendants* that she has nevirapine to take.
2. Unavailability of nevirapine *syrup at rural health centre level.* If an HIV positive women delivers at home, *even if she has taken her nevirapine* tablet, when she takes her child to the rural health centre, she is shocked to be told that her child cannot get nevirapine because it is not available at that level of the health delivery system. She then has to travel kilometers to the next level where nevirapine syrup is likely to be available (that is if that level is offering PMTCT services).

Follow up of mother and baby pairs.

Long term care of HIV exposed mothers and babies is ultimately expected to be offered within the Integrated Management of Childhood Illnesses [IMCI] programme which is currently being developed within Zimbabwe and funded by UNICEF. The currently recommended schedule of visits for HIV exposed infants is combined with the routine follow up/immunization schedule {10 days, six weeks, three, four, five, nine,12,15 to 18 months respectively}. Follow up may be more frequent for HIV exposed infants if symptomatic infections are present. Cotrimoxazole given as a prophylactic medication can be life saving and prevent serious complications from opportunistic infections. Follow up should be linked to existing community-based care programmes.[2]

While guidelines for the follow up of mother and baby pairs exposed to HIV are in place, the challenge being experienced is to identify these mothers and babies at any level of the health care delivery system. The system of follow up of these mothers and babies is thus not well established.

Cotrimoxazole tablets and syrup are not always readily available in adequate stocks for the increasing number of mothers and babies. Antiretroviral drugs (ARVs) are also not yet readily available and affordable to the same mothers and babies.

At every visit, mothers ask health workers the famous question 'Is my baby now HIV negative?' Polymerase Chain Reaction (PCR) can be used to diagnose HIV infection in the infant from a few weeks of age. However, it is not currently available in Zimbabwe. In babies, ELISA or any HIV rapid test can be performed at any age, but these

are inappropriate before 15 months of age.[2] thus health workers cannot give answers to the mothers basing their facts on clinical evaluations.

To date there is no published record to show *the proportion of babies who are HIV negative* after both mothers and babies have taken nevirapine in the PMTCT national expansion programme.

This information would be useful:

1. To make informed decisions on whether to continue the PMTCT programme using nevirapine.
2. To motivate communities to increase their participation in the PMTCT programme.
3. To lure more donors into funding the more complex facets of the PMTCT programme.

The challenge contributing towards lack of data that shows the number of babies who are HIV negative post nevirapine administration, is that the PMTCT monitoring tools did not capture this data. The data capturing mechanisms in the PMTCT programme have not been integrated into the existing health information reporting system. However, it is hoped that in 2004 the revised PMTCT progress reports will be able to capture this data.

Since some organizations involved in the PMTCT programme are approaching the programme from a research perspective, they could be using data that shows the positive effects of nevirapine. The author advocates sharing this information with the Ministry of Health and Child Welfare and other stakeholders in the PMTCT programme.

Exclusive breastfeeding for four to six months with abrupt weaning is the standard recommendation for good infant feeding in PMTCT in Zimbabwe. However, though this practice has been promoted, it is often not practiced exclusively for several reasons:

- Some women go to work outside the home, hence they cannot exclusively breastfeed.
- Women may not get the adequate support they need from their families to enable them to exclusively breastfeed and abruptly wean their children at six months.
- Breast milk substitutes are not locally available in remote communities and are also very expensive in communities where they are available.[5]

A review of breastfeeding practices by UNICEF showed that in Zimbabwe, only 16% of mothers exclusively breastfed for three months. UNICEF concluded that in most developing countries where breastfeeding is the norm, it is mixed feeding that is practiced.[20]

Breastfeeding as a risk factor for HIV transmission from mother to child was first demonstrated as a case report from Australia,[21] where cumulative evidence from studies from North America, Europe and Africa confirmed the finding.[22-25]

Studies are still giving varying figures (ranging from 25% to 48.7%) for mother to child transmission of HIV; 14% to 20% being associated with breastfeeding.[26-29]

The World Health Organization still recommends exclusive breastfeeding during the first six months of life, but where replacement feeding is acceptable, feasible, affordable, sustainable and safe, the HIV positive mother should avoid breastfeeding.[30]

PMTCT progress.

The following activities are among the other mentioned PMTCT programme achievements:

1. Production of a national PMTCT training manual (October 2002).
2. A draft PMTCT trainer of trainers curriculum guide.
3. A draft PMTCT Logistics and Procedure Manual (October 2002).
4. PMTCT National Site Protocols for Ministry of Health and Child Welfare Zimbabwe (February 2003).
5. A draft PMTCT National Communication package (launched in June 2003).
6. Draft PMTCT monitoring tools (finalized in November 2003).

Table I gives a summary of the PMTCT national expansion progress. From the registered sites, monitoring of the PMTCT programme showed that from January to December 2002, 45 690 women were eligible for counselling. However, 33 724 (73.8%) women were reported to have had pretest counselling. Of those counselled, 66% agreed to have an HIV test and of those who were tested, 22% were found to be HIV positive. About 35% of those who were found to be HIV positive received nevirapine for PMTCT of HIV.[4]

Table I: PMTCT provincial progress reports 2002.

Characteristics	Mac	MC	ME	MW	MN	MS	MID	Mas	Hre	Byo	Chi	TOT
New ANC Counselled	6 415	4 050	2 302	2 981	987	3 790	1 091	98	2 991	4 120	4 899	33 724
Tested	5 802	3 220	1 004	805	108	1 889	845	41	1 397	3 172	3 904	22 079
HIV pos	1 002	587	163	284	42	380	202	16	203	984	998	4 861
nvp mother	102	426	52	98	2	22	49	6	235	230	490	1 712
nvp baby	102	326	68	109	2	36	65	6	90	105	498	1 407

Key: ***Mac:*** *Manicaland* ***MC:*** *Mashonaland Central* ***ME:*** *Mashonaland East* ***MW:*** *Mashonaland West*
MN: *Matebeleland North* ***MS:*** *Matebeleland South* ***MID:*** *Midlands* ***Mas:*** *Masvingo*
Hre: *Harare* ***Byo:*** *Bulawayo* ***Chi:*** *Chitungwiza* ***HIV pos:*** *HIV positive*
nvp: *Nevirapine*

The variations in the figures presented from the provinces are due to:

1. Differences in the number of PMTCT sites established in each province or town. (Manicaland 29, Mashonaland central five, Mashonaland west 30, Mashonaland East 13, Matebeleland North 18, Matebeleland South seven, Midlands 12, Masvingo 41, Harare 11, Bulawayo seven, Chitungwiza five).[10]
2. The time the sites got registered and became fully operational (some sites in other provinces were established as early as February 2002 while sites in Masvingo were established much later).
3. Health worker perceptions, experiences, attitudes, commitment and motivation within each site.
4. Donor support in each province (funds for training, support and supervision and creation of additional posts for PMTCT staff were readily made available to some privileged districts like Nyanga, Rusape, Seke, Mudzi, Chivhu, Chinhoyi, Banket, Kadoma and Kariba).
5. Erratic availability of nevirapine tablets and syrup and HIV test kits at site level.

The possible challenges as to why Harare has very few mothers who were counselled could firstly be that only four out of the 12 health facilities in the City Health Department were registered and operational PMTCT sites, and secondly that data on PMTCT activities in the private sector in Harare is not being captured.

The reason why Harare gave more nevirapine to mothers other than those found to be HIV positive in its centres could be that Harare receives more referrals. Some of the referred women could have received nevirapine during antenatal care in their rural centres.

In a more general analysis, the data shows a reduction in the numbers of women who get tested for HIV and who eventually take nevirapine. The author wonders whether firstly, male decision making processes contribute to this reduction, and secondly, fear within women is affecting uptake of the PMTCT programme.

In the area of research, there was a national assessment of the PMTCT national expansion programme in 2003. The assessment raised the following as challenges needing redressing:

1. Barriers to same-day provision of rapid HIV test results (namely staffing, training and procedural issues).
2. Minimal mother infant follow up.
3. Standardization of staffing for both counselling and PMTCT management.
4. Erratic site access to nevirapine and HIV test kits.
5. Lack of space for counselling.

Major challenges to the PMTCT progress in Zimbabwe have been noted to include:

- Manpower and transport shortages.
- High staff turnover.
- Limited male participation.
- Use of draft monitoring and evaluation tools for PMTCT.
- Lack of operational research to guide some decisions.[4]

Conclusion

While the Zimbabwe PMTCT National Expansion Programme has been rolled out, challenges and recommendations highlighted in the PMTCT *national assessment (2003) need to be reviewed* and informed decisions made so that the biggest question 'is my child now HIV negative' can be answered.

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