MEDIA BRIEF

on Prevention of Mother-To-Child Transmission (PMTCT)

for Zambian Journalists

SADC
SOUTHERN AFRICAN DEVELOPMENT COMMUNITY
TOWARDS A COMMON FUTURE

NATIONAL HIV/AIDS/STD/TB COUNCIL
NAC
ZAMBIA

Panos Institute Southern Africa

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
AZT	Azidothymidine (Zidovudine)
CSO	Central Statistics Office
DBS	Dry Blood Spots
DNA	Deoxyribonucleic Acid
EGPAF	Elizabeth Glaser Paediatric AIDS Foundation
EID	Early Infant Diagnosis
ELISA	Enzyme-Linked Immuno absorbent Sero Assay
FDC	Fixed Dose Combination
FP	Family Planning
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immuno-deficiency Virus
IYCF	Infant and Young Child Feeding
MC	Male Circumcision
MCP	Multiple Concurrent Partnerships
MDGs	Millennium Development Goals
MTCT	Mother-to-Child Transmission
MCP	Multiple Concurrent Partnerships
NVP	Nevirapine
NASF	National Aids Strategic Framework
PEP	Post Exposure Prophylaxis
PI	Protease Inhibitor
PICT	Provider Initiated Counselling and Testing
PMTCT	Prevention of Mother-to-Child Transmission
PNC	Post natal Care
RTI	Reverse Transcriptase Inhibitor
STIs	Sexually Transmitted Infections
TB	Tuberculosis
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey
ZSBS	Zambia Sexual Behaviour Survey

GLOSSARY OF SOME KEY TERMS

Vertical transmission:	This is the term used to describe transmission that happens directly from the mother to either an unborn child or infant
Risk factors:	These are situations that make something most likely to happen, i.e., increases the chances of infection with HIV
Exclusive breast feeding:	This is when a baby is only fed on the breast milk without any additional fluids or foods
Replacement feeding:	This is when some other substance – fluid or solid – is given to an infant in place of breast milk
Antiretroviral drugs:	These are medicines that are taken to slow down viral replication with the ultimate aim of reducing the amount of virus in the body of someone living with HIV.
Weeks of gestation:	The amount of time or duration of pregnancy
ARV Prophylaxis:	This is when antiretroviral drugs are taken in order to prevent HIV infection from happening
Regimen:	Is a set of prescribed treatments that may comprise of a number of types of medicines or foods or other activities
CD4 cell count:	CD4 cells are white blood cells that are responsible for immunity in the body. A CD4 cell count is a blood test performed to measure the number of CD4 cells as a way of assessing the strength of the immune system.
Viral Load:	Number of viral copies in the blood.

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INTRODUCTION

BACKGROUND AND RATIONALE FOR THIS MEDIA BRIEF

For a long time since HIV and AIDS was first diagnosed in Zambia in the mid-1980s, the Government of Zambia has undertaken various initiatives aimed at mitigating the spread of the pandemic and its negative impact on national development.

These initiatives have been driven by and through the Ministry of Health, the department mandated to provide health services to the people of Zambia, together with other quasi-government institutions that have been created to broaden the fight against the pandemic.

However, in order for these initiatives and programmes to work, the Ministry has relied on the cooperative efforts and contribution of various stakeholders who have played, and continue to play their respective roles diligently.

These include our cooperating partners at both unilateral and multi-lateral levels, who have over the years provided the much-needed financial, moral and material support, non-governmental organizations, the media and our citizens at large, all of whom have a stake in ensuring that the war against HIV and AIDS is not lost.

The fight against HIV and AIDS cannot succeed without a sustained flow of accurate information on the various aspects of this devastating pandemic. It requires an informed citizenry that will respond positively to initiatives that are intended to mitigate its impact on the country.

Needless to say, the media in Zambia have played, and continue to play a critical role in sensitising the public.

However, while the Zambian Journalists have tried their best in the process of information dissemination on HIV and AIDS, no serious efforts have been made to help, and provide them with basic and accurate facts that will help them do their work even better.

It is these gaps that this Information Pack attempts to address. In this Information Pack, in conjunction with the major stakeholders, Panos has provided some of the most important basic facts that will contribute to enhancing the fight against HIV and AIDS.

The Prevention of Mother-to-Child Transmission (PMTCT), which is the focus of this manual, is a critical phase in addressing the problem of HIV and AIDS. There can be no better way of guaranteeing a healthy future for Zambia, than first ensuring that its children are born, and remain healthy.

This manual endeavours to address the broad issues around PMTCT, such as basic knowledge on how the HIV virus destroys immunity, how Anti-Retrovirals (ARVs) work, the magnitude of the pandemic and the key drivers of HIV/AIDS in Zambia. It also highlights existing HIV strategies, the risk factors for

transmission during pregnancy, labour, delivery and breast feeding and the challenges faced by PMTCT programmes.

This publication is aimed at supporting and providing Journalists and Editors with the relevant information to enhance their role in raising awareness on HIV prevention, especially PMTCT, improving risk perceptions, influencing behavioral change, and questioning potentially harmful social norms.

Journalists need to be equipped with information to empower communities in fighting mother to child transmission of HIV through the utilization of community radio, local media and national radio and television. Mass media interventions are a critical part of an effective prevention approach. The National AIDS Strategic Framework (NASF 2011-2015) stresses the importance of public information and community involvement in addressing HIV and AIDS issues. Engaging the community will improve information flow and community understanding of HIV PMTCT services in Zambia. This in turn will provide a platform for community dialogue and for prevention of mother to child transmission of HIV. Media also has a critical role to create awareness on the evolving issues of PMTCT and to put the PMTCT issues on the public agenda by covering related topics regularly and in a responsible manner so as to raise awareness of possible solutions and problems. This can be done through news coverage in both print and electronic media, TV and radio talk shows, soap operas and celebrity spokespeople.

However, journalists cannot take up these roles unless they are specifically trained and properly informed about the PMTCT issues; hence, Panos has developed this Information Pack. It is hoped that the manual will be useful not only to inform journalists about specific PMTCT issues, but also assist to guide training in HIV and AIDS reporting in general on the epidemic drivers in Zambia.

TARGET AUDIENCE

Although the information pack can be used by anyone seeking information on PMTCT, it is specifically intended for Journalists and Editors so that they can verify facts as they perform their day to day reporting activities. It was developed in such a way that reporters across all disciplines such as political, business or health can easily and accurately factor in PMTCT issues in their stories. The manual can be adapted for use as resource and reference material at media training institutions. The material in this information pack can be reproduced and distributed for use as hand outs as long as adequate acknowledgement of Panos Southern Africa is given.

Journalists and their Editors should take full advantage of this Information Pack to unravel the many myths and beliefs that have surrounded this subject over the years and, in a way, tended to slow down our collective efforts to eliminate the HIV/AIDS pandemic especially in the area of maternal health. Similarly, all other members of the public who may have the opportunity should read this manual. It can only enhance their understanding of the pandemic and help them to appreciate the importance of PMTCT and ensure a future Zambia that has healthy and productive citizens.

HOW TO USE THIS INFORMATION PACK

The main purpose of this Information Pack is to provide Zambian Journalists and Editors with factual information on the important issue of Prevention of Mother-to-Child Transmission of HIV and AIDS (PMTCT).

The Manual is presented through eight Chapters, each addressing a specific theme. Before the Chapters, however, there is an introductory section under which the rationale for this manual, the target readership and information on how to use this manual is provided. The "How To" section, with a bit more detail, however, complements the table of contents which, together, will guide the readers of this Information Pack to the specific pages under which the information they are seeking may appear, with their specific sub-themes.

A glossary of some technical terms is also provided to help the readers grasp their intended inferences in the context in which they are used. Also included is a page indicating the various acronyms used in this manual for purposes of clarity and short-form presentation to make reading easier. Finally but not the least, the Information Pack contains tables for graphic presentation of some statistics, processes and procedures. The tables also contain important information which the readers can find useful.

Chapter One

Chapter One defines the general demographics in the country and presents the current status of HIV and AIDS at national level. It includes the rates of infection per province, and juxtapositions the PMTCT programmes in Zambia especially as they are aimed at preventing vertical transmission of the virus to both unborn and newly born babies.

Chapter Two

This chapter goes further and explains in detail how the HIV virus destroys the immunity of persons under attack. It also defines what HIV and AIDS are and explains how ARVs work to rebuild the defences in the body.

Chapter Three

Chapter Three identifies the major drivers of HIV and AIDS in Zambia, which are: multiple and concurrent partners, low and inconsistent condom use, low levels of male circumcision, mobility and labour migration, vulnerability and marginalisation, and vertical transmission from mother to child. It also identifies cross cutting issues that help to drive the pandemic. These include vulnerability and risk factors at the couple, community and macro levels, such as low levels of accurate risk assessment; Alcohol use; Gender inequality, beliefs about male sexuality and taboos and barriers regarding couple communication about sex.

Chapter Four

Chapter Four addresses the HIV prevention strategies that have been developed in the country over time, such as the important issue of prevention of infection through sexual contact, counselling and testing, prevention in health care settings and PMTCT.

Chapter Five

This chapter examines the four prongs for PMTCT programmes and strategies aimed at mitigating the impact of HIV and AIDS. These are primary prevention of HIV, prevention of unintended pregnancies among HIV positive women, prevention of HIV transmission from infected mothers to their babies and care and support to HIV infected families.

Chapter Six

Zambia is not alone in the fight against HIV and AIDS. This is a global problem with global dimensions. As a member of the international community and as a global citizen, Zambia has to pursue its fight against this pandemic in resonance with international norms, initiatives and standards. In this chapter, the various large-scale international initiatives to prevent mother-to-child transmission of HIV are highlighted. Accordingly, All the PMTCT initiatives in Zambia are in line with these international initiatives including and especially the Millennium Development Goals (MDGs) and UNGASS targets that are related to women, children and HIV.

Chapter Seven

Chapter Seven considers the risk factors for transmission of HIV during pregnancy, labour, delivery and breastfeeding. This is an important chapter in so far as PMTCT is concerned. This chapter discusses what is already known about what puts an infant at higher risk of becoming infected with HIV from the mother. The viral, maternal, foetal, obstetric and infant factors all influence the risk of MTCT.

Chapter Eight

Chapter Eight is the last in this manual. It focuses on the role of the community in PMTCT. All programmes and strategies around PMTCT are targeted at the various strata or members of the communities, who must respond positively to its messages for these efforts to succeed. It, therefore, emphasises the involvement of men and community trained personnel, and assesses the challenges faced by PMTCT programmes.

CHAPTER ONE CURRENT STATUS OF HIV AND AIDS IN ZAMBIA

Zambia is a large, landlocked country divided into nine administrative provinces and 74 districts. (A tenth Province, Muchinga, has been created after the subdivision of Northern Province into two, the other part consisting of the western districts remaining as Northern Province. The mapping process for the new Province is still on-going, hence the use of the map showing nine Provinces.) It has a total population of 13,046,000 and an almost equal gender distribution, CSO (2010). The population is predominately young with 17.2% under the age of five, and 50% under 15 years of age, ZDHS (2007).

The country is highly urbanized with 39% of the population living in urban areas. With a surface area of 752 000 km2, population density is low at 17.3 persons per square kilometre. Annual population growth is 2.8%, and the total fertility rate according to the last Zambia Demographic Health Survey (ZDHS) in 2007 was 6.2 births per woman. Life expectancy at birth is 48 for males and 52 for females, Census Report (2002).

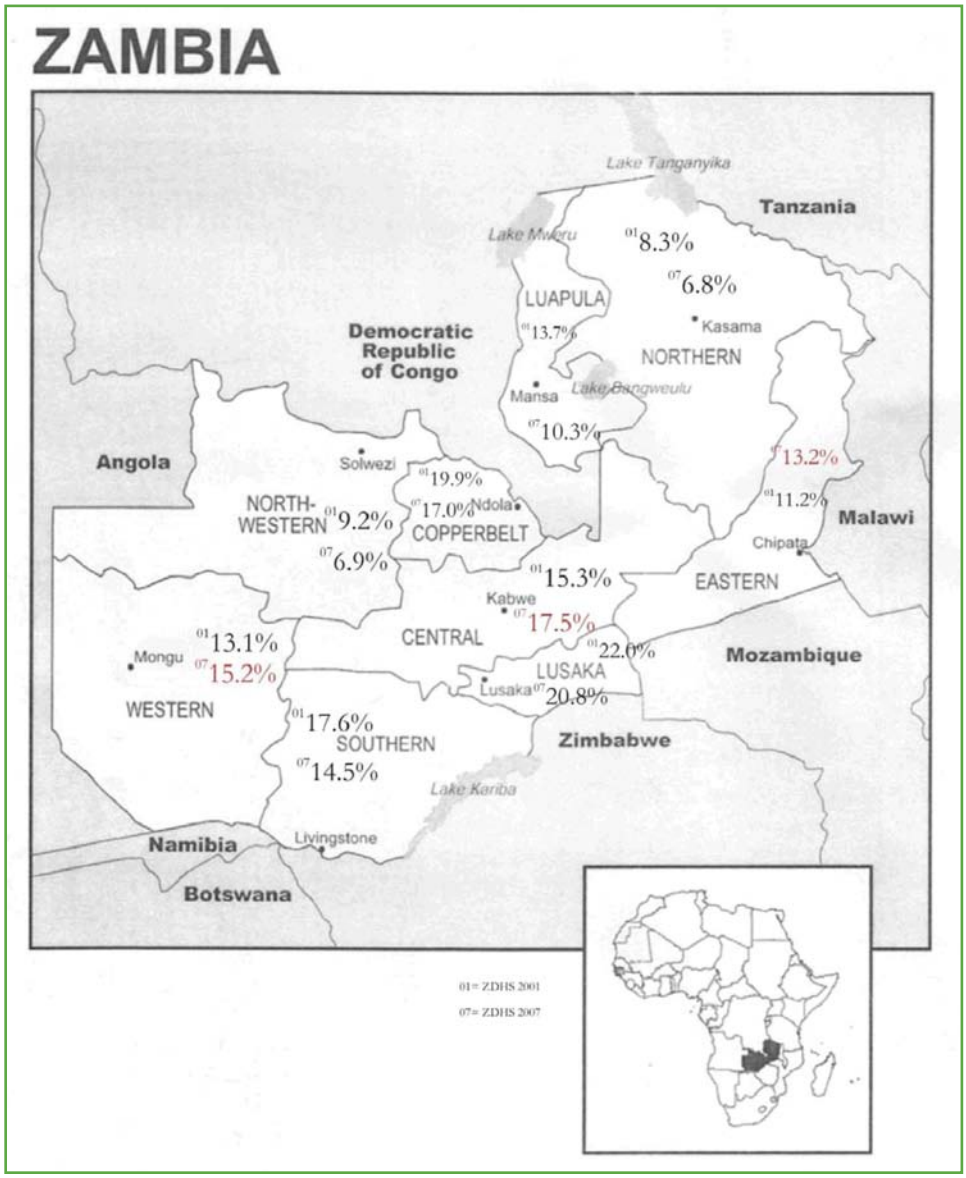
Over the years some improvements have been seen in the situation of children and women in Zambia. Nevertheless, continued concern about maternal, infant and young child survival exists in the context of persisting high levels of HIV and AIDS. Under five mortality stands at 119 per 1,000 live births, infant mortality at 70 per 1,000 live births, and maternal mortality at 591 per 100,000 live births, ZDHS (2007). Zambia has in place the PMTCT programme which was initiated in 1999 to address the burden of vertical transmission of HIV. With a high antenatal HIV prevalence, estimated at 16.4 percent in 2008, approximately 80,000 infants born annually are at risk of acquiring HIV from their mothers. Demand for PMTCT services will continue to increase throughout the country and will contribute to a significant reduction of transmission of HIV and subsequent child morbidity and mortality, PMTCT Guidelines (2010). Vertical transmission from mother to child accounts for about 10% of all new infections, MoT (2009). Although HIV prevalence has stabilized due to the success of the country's HIV prevention and treatment programmes, this has happened at a relatively high level of 14.3% (20079), a decline from 16% in 2002. According to the Zambia Demographic and Health Survey (2007), 78% of men and 61% of women had never been tested for HIV. Of all those ever tested, only 38% of women and 20% of men had returned to the testing centres to know their HIV status. Use of rapid tests with the implementation of same day result, provider initiated testing and counselling is increasing the number of Zambians who know their HIV status.

The pandemic in the country is highly diverse with regional variations. Northern Province has the lowest prevalence at 6.8% compared to Lusaka Province which has the highest prevalence at 21% (see Figure 1), ZDHS (2007).

Rural areas generally have higher prevalence rates than urban areas and this can be attributed to lower population density, more rural location, less mobility, and higher poverty levels than their urban counterparts. There is a feminization of HIV in the country with females (16.1%) more likely to be HIV positive than males (12.3%) due to biological, economic and social factors.

Almost 90 % of new infections occur through unprotected heterosexual intercourse. The other major drivers of the pandemic are multiple concurrent partnerships (MCP), inconsistent condom use, low rates of male circumcision, and high risks among specific groups including sex workers, migrants and the mobile population. An interesting finding from Zambia's HIV Prevention Response and Modes of Transmission Analysis is that out of 100 new HIV infections 71 are estimated to arise through sex with non-regular partners and 21% are estimated to occur in people who report that they have only one sexual partner. It is estimated that 11 % of cohabiting partners are discordant (one partner infected while the other is not), ZDHS (2007). Perinatal or Mother-to-Child Transmission (MTCT) accounts for about 10 % of new infections, ZDHS (2007). Although HIV incidence is stabilizing, an estimated 82,681 adults were newly infected with HIV (59% women, 41% men) in 2009. This said, the number of new infections in children, aged 0-14 years, have declined since peaking at 21,189 in 1996 to 9,196 in 2009.

Figure 1: Map of Zambia showing comparison of HIV prevalence by province



CHAPTER TWO HOW THE HIV VIRUS DESTROYS IMMUNITY

What is HIV?

HIV is an abbreviation, which stands for **H**uman **I**mmune-deficiency **V**irus. This is the virus that causes AIDS. It was discovered by French and American Scientists in 1981 in the midst of concern about a strange wasting illness that was affecting and killing adults. This virus was termed HIV because it only infects and affects HUMAN BEINGS. Secondly, when it affects human beings, it destroys the body's ability to fight off diseases; this renders the immune system defenseless and vulnerable to many other infections, HIV factsheets (nd).

What is AIDS?

AIDS is an abbreviation, which stands for **A**cquired **I**mmune **D**eficiency **S**yndrome. "Acquired" means "to get": This indicates that the virus that causes AIDS infects people, leading to the symptoms. "Immune" means "protected". It refers to the body's ability to fight off infections. "Deficiency" means, "Lack of". It shows that the HIV-infected person lacks protection and, therefore, cannot fight off infections, even the common diseases. "Syndrome" means a collection of signs and symptoms. AIDS is a condition characterized by many different illnesses, HIV Factsheets (nd).

A person who is only infected with HIV looks healthy. Over time, as the virus destroys his or her immunity, he or she develops AIDS: the mixture of signs and symptoms of the various diseases which take advantage of the body's weakened defenses (immune suppression) to attack. A person can live with HIV for a long time (up to 15 years) before developing and showing signs of AIDS. A person with early HIV may not be recognized unless he or she undergoes an HIV test. When the HIV virus gets into a person, the virus identifies CD4 cells, gets inside the cells, multiplies itself inside the CD4 cells and destroys the cells in the process. The new HIV copies get out of the destroyed cell, each looks for new CD4 cells to attack and destroy. As a result, there will be a lot of HIV copies in the blood and less CD4 cells. As the number of CD4 cells decreases and the amount of virus increases, the immune defences are weakened and people infected with HIV become vulnerable to opportunistic infections. HIV is a chronic viral infection with no known cure. Without ARV treatment, HIV progresses to symptomatic disease and AIDS.

How ARVs work

There is no cure for HIV. Once the virus is in someone's blood, there is no treatment to kill the virus and clean the blood, so the virus remains in the body for the rest of one's life. However, there are medicines known as ARVs that can be taken to slow down the way HIV attacks the immune cells. The ARVs give the immune cells a chance to recover, hence someone who would have been in the AIDS stage can revert back to being asymptomatic after taking the medicines. Taking these medicines is normally referred to as the Highly Active Antiretroviral Therapy (HAART).

For HIV to multiply itself inside the CD4 cell that it would have attacked, it needs some enzymes for the process to happen. One of the enzymes is called **reverse transcriptase.** A group of ARVs works by stopping the production of this enzyme and these are called reverse **transcriptase inhibitors (RTIs).** After the HIV has multiplied itself inside the CD4 cell, the many new copies of HIV need yet another enzyme for them to be able to get out of the cell and go and attack more CD4 cells. This time around, the enzyme required for this process is called protease. There is a group of ARVs that inhibit production of the protease and they are called **protease inhibitors (PIs).**

Research is still underway to find more ARVs that will disturb the process of the virus attacking the immune cells. There are hopes that a new group of ARVs is coming up and this is believed to work by inhibiting the entry or fusion of the virus to the CD4 cell. For HIV to be able to multiply itself, it needs to get right inside the CD4 cell. The entry will be inhibited by the new group of ARVs – **entry or fusion inhibitors.**

ARVs are used in combinations in order to maximise on disturbing the HIV process of multiplying and destroying the CD4 cells. These combinations are called cocktails and this is why HAART is called combination therapy. By using the combination therapy, HIV multiplication is slowed down giving the body a chance to repair the immune system by producing more CD4 cells to replace the ones already attacked by HIV.

It is possible to measure or determine the extent to which the immune system has been decimated; blood tests are done for CD4 cell count. It is advisable for people living with HIV to periodically have this CD4 cell count done to assess how strong their immunity is, even when they are asymptomatic. When one has started on HAART, it is part of the monitoring of treatment to have periodic CD4 cell tests to see how well the immune system is recovering, the CD4 cell count should increase while the viral load should decrease if the medication is working properly.

CHAPTER THREE KEY DRIVERS OF HIV AND AIDS PANDEMIC IN ZAMBIA

Zambia has been engaged in the fight against HIV since 1984, with little success. However, the HIV and AIDS prevalence rate dropped from 16% in 2001 to 14% in 2007. It is for this reason that Zambia mobilized support from unilateral, bilateral and multilateral organizations to conduct an epidemiological synthesis in 2009. The processes helped Zambia identify the key drivers of the epidemic as extracted from the epidemiologic synthesis, MoT (2009). It is hoped that if all interventions are targeted at the drivers, Zambia is likely to realize the ambitious goal of having a nation free from the threat of HIV by 2015.

Driver 1: Multiple and concurrent sexual partners

Multiple and concurrent partner (MCP) behaviour is prevalent among all sexually active age groups, and specific communication on the risks related to multiple partners, sexual concurrency and networks, extramarital relationships, secondary partners in transactional and age/wealth disparate relationships is weak. The incidence model estimates that in 2008, about 71% of new infections arose from casual heterosexual sex behaviour, including in people with multiple and concurrent partners.

Driver 2: Low and inconsistent condom use.

Condom use has not risen enough to significantly impact HIV transmission. Programmes need to do more to tap the unrealised potential of condoms to prevent sexual transmission of HIV and STIs, and prevent pregnancy in HIV-positive women. The condom programme needs to focus where uptake and impact are greatest, such as in sex work, casual sex, discordant couples and prevention with positives.

Driver 3: Low levels of male circumcision (MC).

A number of observational studies indicate that circumcised men have lower levels of HIV infection than uncircumcised men, Weiss et al (2000). Trials carried out in Kisumu, Kenya, and Rakai District, Uganda, revealed at least a 53% and 51% reduction in risk of acquiring HIV infection, respectively, (Bailey et al 2007, Gray et al 2007). These results support findings published in 2005 from the South Africa Orange Farm Intervention Trial, which demonstrated at least a 60% reduction in HIV infection among men who were circumcised, Auvert et al (2005).

Scaling up of MC deserves more urgency in Zambia. Only one province (North Western) traditionally practises circumcision as part of culture. MC intervention should be given top priority in all parts of Zambia.

Driver 4: Mobility and labour migration.

Sub-populations with high mobility are known, but not enough prevention activities are strategically placed and offering adapted HIV services to these populations. For sub-populations in formal employment requiring absence from home, there is a need to lobby employers for complementary risk reduction measures. There is a great need to effectively target international migrants and other populations with high mobility. Provinces with highly mobile populations and many labour migrants – Lusaka, Western and Copperbelt Provinces – have the highest HIV prevalence levels in the country.

Driver 5: Vulnerability and Marginalization

In Zambia, high risk behaviour among sex workers, both on the streets and in brothels, and in male-to-male sexual relationships, i.e., Men having Sex with Men (MSM) are illegal, but still remain major drivers of HIV and AIDS. The number and size of prevention activities addressing commercial sex work is insufficient and most do not include clients of sex workers. Although many sex acts with clients are probably protected, there is still a high level of unprotected sex with clients and steady boyfriends of sex workers. The incidence model estimates that in 2008, almost 7% of all new infections arise from sex work (in sex workers, clients and regular partners of clients). Policies and programmes are also inadequate to address the specific needs of MSM.

Driver 6: Vertical transmission from mother to child.

One out of 10 new infections occurs in children aged 0-14 years; most are vertical transmissions from mother-to-child. PMTCT access and coverage must be improved further: Zambia has built up PMTCT services within a few years and achieved commendable results, including the PMTCT service capacity built at facility level and in the community sector, and innovative partnerships with the private sector. Reproductive health counselling and family planning to prevent unintended and unwanted pregnancies among HIV positive women has been shown to be effective internationally, and there is further scope in Zambia to increasingly reduce vertical transmission through such interventions.

Cross Cutting Issues:

Apart from the above, there are a range of other cross cutting issues that play as drivers to HIV and AIDS. These include vulnerability and risk factors at the couple, community and macro levels, for instance: Low levels of accurate risk assessment; Alcohol use; Gender inequality and beliefs about male sexuality; Intimate-partner violence and sexual coercion; Behaviours such as age-disparate relationships and transactional sex which have cultural resonance; and Taboos and barriers regarding couple communication about sex. Most drivers of the HIV epidemic are underpinned by social and cultural norms.

A shift in emphasis from changing individual sexual behaviour to changing social norms is therefore necessary.

CHAPTER FOUR HIV PREVENTION STRATEGIES IN ZAMBIA

The key elements of the HIV interventions in Zambia involve the following four priority areas:

1. Prevention of sexual transmission of HIV;
2. Counselling and Testing (CT);
3. HIV prevention in health care settings including PEP; and
4. Prevention of Mother to Child Transmission of HIV (PMTCT)

PREVENTION OF SEXUAL TRANSMISSION OF HIV

Sexually transmitted Infections (STIs) are a public health problem in Zambia. Up to 10% of all out-patient attendees at health institutions are related to STIs. Gonorrhoea, syphilis and chancroid are among the most common infections, ZDHS (2007).

A strong link exits between sexually transmitted infections and the sexual transmission of HIV. Many studies have demonstrated that sexually transmitted infections are a co-factor for HIV Prevalence and Syphilis transmission. STI control may potentially play an important role in the reduction of HIV transmission.

Respondents in the 2007 ZDHS who had ever had sex were asked if they had contracted a disease through sexual contact in the past 12 months, or if they had had any symptoms associated with STIs such as a bad-smelling, abnormal discharge from the vagina/penis or a genital sore or ulcer. The data show that respondents with a history of STIs or STI symptoms have substantially higher rates of HIV infection than those with no history of STIs or STI symptoms.

The presence of untreated STIs increases the chance of HIV transmission during unprotected sex between an HIV positive and HIV negative person. The ministry of health has initiated community and clinic based interventions to help control the spread of STIs. Free treatment of STIs is offered at all government clinics and health centers, complimented by efforts to raise community awareness of the dangers of STIs, especially during pregnancy.

COUNSELLING AND TESTING

An important step in prevention and accessing HIV and AIDS services is for each person to know their current HIV status. HIV counselling and testing is the entry point to the following specific interventions to reduce MTCT:

- Antiretroviral treatment and prophylaxis
- Safer infant and young children feeding practices

The national policy on HIV testing and counseling stipulates that counseling and testing services be free of cost for users and encourages provider-initiated counseling and testing. Screening for general employment purposes is prohibited.

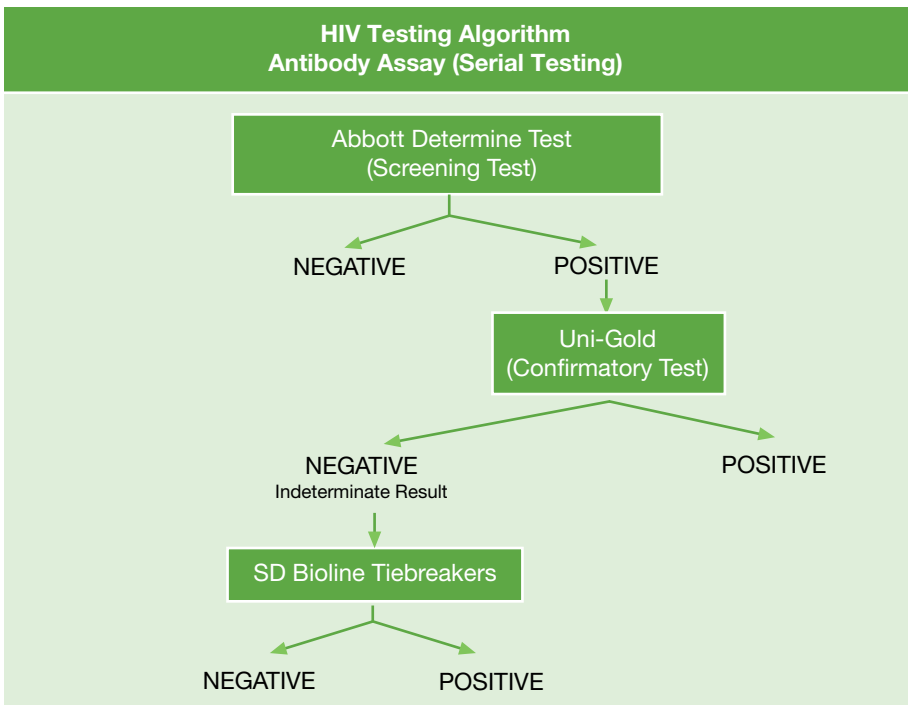
The HIV test is carried out using the rapid HIV testing kit. In Zambia, we use serial testing and the rapid tests used are Abbott Determine for screening and Uni-Gold as a confirmatory test. Zambia has National Guidelines for Counselling and Testing developed in 2006, National Guidelines for HIV Counselling and Testing for Children developed in 2011, and National Quality Assurance Strategy for HIV Counselling and Testing developed in 2007.

According to the HIV testing algorithm, in order for one to be said to be HIV positive, they are tested as follows:

If the Abbott Determine test is negative; the client is considered HIV negative and is advised to re-test after 3 months. If the Abbott Determine test is positive, a confirmatory Uni-Gold rapid test is carried out. If both tests are positive, the client is considered HIV positive. If the Abbott Determine is positive and Uni-Gold is negative, the client is considered HIV Indeterminate. In this case, a third test called SD Bioline, considered to be the tie breaker test, is carried out. If the tie breaker test is positive, then the client is considered to be HIV positive, and if it is negative, the client is considered to be HIV negative but advised to re-test after 3 months. The algorithm is summarised in figure 2 below.

The major benefit of the rapid test is that it can be done in a short space of time and therefore the Clients should receive their HIV test results the same day. On a monthly basis, 10 percent of all blood Samples tested for HIV should be sent to a district or other referral laboratory for quality control and Quality assurance.

Figure 2: HIV Testing Algorithm



*To increase uptake of counselling and testing, the government declared 30th June as National VCT Day, which has been commemorated annually since 2006, and, the same year, the government issued National Counselling Guidelines which encourage using rapid HIV test and emphasise that testing be routine but voluntary and based on informed consent.

HIV PREVENTION IN HEALTH CARE SETTINGS

HIV Prevention can be achieved through the provision of safe blood, training of health care providers, improved medical practices and provision of post exposure prophylaxis (PEP). The areas of emphasis are :

- Provide PEP for health care workers and victims of sexual abuse;
- Blood safety and blood products;
- Community engagement and empowerment;
- Handling and processing of sharp instruments;
- Handling and disposal of clinical waste; and
- Provision of commodities and supplies, including management of logistics and procurement of injection safety and infection prevention commodities. National capacity building among health workers on the safe use of needles, syringes and sharp instruments to prevent HIV and other infections has been conducted countrywide.

Infectivity estimates for transfusions of infected blood or blood products are much higher than for other modes of HIV transmission due to the far larger viral dose per exposure than for other routes, Baggaley et al., (2006). The Zambia National Blood Transfusion Service (ZNBTS) has been screening blood and blood products to reduce HIV transmission through contaminated blood and blood products since 1988, MoT (2009). According to the national HIV/AIDS policy objectives on safe blood, government commits to screening all blood and to selective recruitment of donors to minimize the number of discarded units. According to the UNGASS Report (2010), 100% of blood units are screened for HIV in a quality assured manner by the ZNBTS under the Ministry of Health**.**

PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV

What is Mother to Child Transmission (MTCT)?

The fourth priority in HIV prevention in Zambia is Prevention of Mother to Child Transmission of HIV, this intervention is explained below in detail.

Mother-to-child transmission is when a baby born to a woman who is HIV positive, becomes infected. This is sometimes referred to as vertical transmission. The baby can become infected during pregnancy, during labour, at delivery, or during breastfeeding without intervention. Between 15-30% of babies born to HIV positive women will become infected with HIV during pregnancy and delivery. A further 5-20% will become infected through breastfeeding.

CHAPTER FIVE

THE FOUR PRONGS FOR PMTCT PROGRAMMES AND STRATEGIES

Figure 3: FOUR PRONGS OF THE PMTCT PROGRAM

Prong 1: Primary prevention of infection

Making HIV testing and counselling widely available

HIV testing and counselling services need to be made available to all women of child bearing age group. This is because PMTCT interventions depend on women knowing their HIV status. HIV testing and counselling is both patient initiated, i.e., voluntary, and Provider Initiated Counselling and Testing (PICT) through routine ANC. With regard to PICT, the opt out approach is practised. Counselling and testing is offered to all, while receiving the test result remains open to those opting to know.

Providing suitable counselling for women and men who are HIV negative

Counselling provides an opportunity for a woman who is HIV negative to learn and feel empowered on how to protect herself and her infant from HIV infection. It is usually powerful and effective to adopt safer sex practices, encourage partner testing and counselling and discuss family planning as a couple.

Providing early diagnosis and treatment of STIs

Early diagnosis and treatment of STIs can reduce the incidence of HIV in the general population. STI treatment services present an opportunity to provide information on HIV infection and PMTCT as well as referral for HIV treatment, care and support services.

Providing access to condoms

Condoms can help prevent HIV transmission when used correctly and consistently. Low and inconsistent condom use has been identified as one of the key drivers of the HIV and AIDS pandemic in Zambia.

Programs that promote condom use for HIV prevention should also focus on condom use for PMTCT especially in view of the fact that risk of infection to the child increases with increased viral load during pregnancy and during the breastfeeding period.

Prong 2: Prevention of unintended pregnancies among women who are HIV infected

Using Family Planning (FP) to reduce MTCT

Introducing FP referrals and/or services into programs designed for PMTCT has an important impact on the reduction of MTCT by:

- Avoiding unplanned and unwanted pregnancies to women who are infected with HIV;
- Reducing the number of HIV -infected babies born to HIV-infected women. It also reduces the number of children orphaned by HIV and AIDS;
- Reducing the number of HIV -infected (and uninfected) infants born to them
- Providing an entry point for HIV prevention education and MTCT information to a wide audience of women (and men) of reproductive age; and
- Ensuring that messages given in FP settings (about contraceptive choice, MTCT, infant feeding, etc.) are consistent with those given in MTCT settings.

Using FP to reduce MTCT as a strategy has been underutilized in Zambia. Links between FP services and other HIV and AIDS-related services (such as PMTCT) have rarely been made operational. Media can assist to properly market family planning commodities like condoms (male/ female) contraceptives. FP is a basic right of HIV-infected women in order for them to voluntarily control their fertility. Voluntary family planning offers the following significant benefits for women and families:

- The health of women and children is improved by reducing the risks associated with age at pregnancy (too young or too old), too many pregnancies or pregnancies spaced too closely together;
- Family planning allows families to better plan their lives; and
- Individuals can achieve greater prosperity and security for the family.

Adoption of barrier contraceptive methods has benefits for HIV–infected women beyond the contraceptive effects. These include prevention of HIV transmission from HIV-infected women to their HIV-uninfected sexual partners as well as the theoretical possibility of protection against re-infection with the HIV virus and acquiring other strains of the HIV virus (super-infection) or other STDs.

Prong 3: Prevention of HIV Transmission from women infected with HIV to their infants

The Zambian PMTCT 2010 guidelines are based on the WHO 2009 Rapid Advice. These guidelines were based on the new evidence, like:

- Benefits of **earlier initiation of ARV prophylaxis** during pregnancy in reducing mother-to-child transmission;
- **Effectiveness of ARV prophylaxis** provided during breastfeeding in reducing mother-to-child-transmission;
- **Effectiveness of different ART regimens** for children and adults; and
- **Optimal timing and criteria for ART initiation** in children and adults

As a result of the new evidence, it was critical for the guidelines to recommend initiation of ARVs earlier during pregnancy, from as early as **14 weeks of gestation**. The guidelines also highlight the great benefits of using ARVs during the entire Breast Feeding period, i.e., recommend ARV prophylaxis to either the baby or mother up to the end of the entire breastfeeding time. The new regimen now recommends that HIV positive mothers are to breastfeed for at least 12 months, as long as the baby or mother is receiving ARV's.

Mothers, when identified in pregnancy as being HIV positive, should have a CD4 test to determine whether they need to take medication for their own health or for their unborn infant's health. If their CD4 count is below or equal to 350 cells/mm3 they need to start taking antiretroviral drugs for their own health. If a woman has a CD4 count higher than350 cells/mm3 then they do not need to take medication for their own health. However, they need to take medication to prevent HIV transmission to their infant(s) as recommended in the 2010 PMTCT guidelines.

Mother taking ARVs (antiretroviral drugs) for her own health

A mother taking ARVs for her own health should take a combination of ARVs as soon as possible. This course of medication should be permanent and taken every day in order to postpone the development of her illness. In this situation, if an infant is being breastfed they should have daily NVP (nevirapine) for 6 weeks.

Mother taking ARVs for her infant's health

A mother whose CD4 cell count is still high will need to take ARVs for the health of the infant for the period that she is pregnant until a week after delivery. The aim of the regimen is to keep her viral load so low that the baby's chance of becoming infected from the mother will be reduced. All infants born to HIV positive mothers should receive a course of medication for PMTCT, which is linked to the drug regimen that the mother is taking. If a mother is permanently taking ARV medication (for mother's health) then the infant should receive daily NVP for 6 weeks. If the mother's regimen is for the health of the infant, then the infant should receive daily NVP until one week after breastfeeding has ended.

Babies should be exclusively breast feed up to 6 months, thereafter supplements can be added. All breastfeeding should be stopped by 12 months of life.

Points to note:

"If an infant is not breastfed, they should still be given daily NVP from birth up to 6 weeks".

"Note that all babies exposed to breastfeeding must be on NVP prophylaxis until after one week when breast milk has been stopped"

"Women should start attending ANC as early as possible preferably at 14 weeks of pregnancy"

"***All pregnant women eligible for ART should be started on treatment as soon as possible regardless of gestational age".***

"Those on ART prior to pregnancy should continue throughout pregnancy".

"All pregnant women should be advised to deliver in a health facility".

Figure 4: SUMMARY OF THE ART PROPHYLAXIS REGIMES TO PMTCT

MINISTRY OF HEALTH

Antiretroviral Prophylaxis Regimens to Prevent Mother-to-Child Transmission Of HIV

	Antenatal HIV positive pregnant woman	Intrapartum HIV positive pregnant woman	Postnatal HIV positive pregnant woman	All exposed infants
For HIV positive women from 14 weeks of pregnancy	AZT 300mg twice daily	NVP 200mg single dose at onset of labour. 3TC 150mg and AZT 300mg stat dose at onset of labour and thereafter repeat every 12 hours until delivery.	3TC 150mg and AZT 300mg twice daily for 7 days.	**Breastfeeding infant:** **i.** NVP at birth and daily until one week after all exposure to breast milk. **ii.** Start co-trimoxazole from 6 weeks until a week after all exposure to breast milk has ended and HIV status confirmed negative.
For HIV positive women presenting in 3rd trimester	AZT 300mg twice daily.	NVP 200mg single dose at onset of labour. 3TC 150mg and AZT 300mg stat dose at onset of labour and thereafter repeat every 12 hours until delivery.	3TC 150mg and AZT 300mg twice daily for 7 days.	**Non-breastfeeding infant:** i. Commercial milk formula. ii. NVP at birth and for 6 weeks. iii. Start co-trimoxazole from 6 weeks until HIV status confirmed negative.
For HIV positive women who have not received prophylaxis antenatally		NVP 200mg single dose at onset of labour. 3TC 150mg and AZT 300mg stat dose at onset of labour and thereafter repeat every 12 hours until delivery.	3TC 150mg and AZT 300mg twice daily for 7 days.	
HIV positive women who are on ART or eligible for ART	Continue ART or if eligible start ART	Continue ART	Continue ART	**Breastfeeding Infant:** i. NVP from birth until 6 weeks of age. ii. Start co-trimoxazole from 6 weeks until a week after all exposure to breast milk has ended and HIV status confirmed negative. **Non-breastfeeding infant:** i. Commercial milk formula ii. NVP from birth until 6 weeks of age weeks. iii. Start co-trimoxazole from 6 weeks until HIV status confirmed negative.

National AIDS Council

World Health Organization

unicef

Prong 4: Provision of treatment, care and support to women infected with HIV, their infants and their families

If women are assured of adequate care, support and treatment, they are more likely to accept to be tested and counselled for HIV and, if positive, they will accept interventions to reduce MTCT. It is important to develop and reinforce linkages with programs for treatment, care and support services to promote long term care of women living with HIV and their families.

ARV prophylaxis for the mother

ARV prophylaxis given to a mother who is HIV positive does not provide long term protection to the woman. Pregnant women with advanced HIV infection require HAART to reduce the risk of developing AIDS related illnesses. Treatment is available in most public health institutions.

Care and support of the infant and child who is HIV exposed

Children whose mothers are HIV infected are at higher risk than other children for illnesses and malnutrition for multiple reasons, which may include the following:

- They may become infected with HIV and become ill even when adequate health care and nutrition are provided;
- Those who receive replacement feeding lack the protective benefits of breastfeeding against respiratory infection, gut infections and other complications;
- If the mother is ill, she may have problems caring for them adequately; and
- Their families may be economically vulnerable due to AIDS related illnesses and deaths among adult relatives.

Infants and children who are HIV exposed require regular follow up care especially during the first two years of life including the relevant immunizations at the correct ages, HIV testing and ongoing monitoring of feeding, growth and development.

CHAPTER SIX THE BASIS FOR PMTCT STRATEGIES IN ZAMBIA

International PMTCT Initiatives

There are a number of large-scale international initiatives to prevent mother-to-child transmission of HIV. They include the following: The President's Emergency Plan for AIDS Relief (PEPFAR), MTCT-Plus, The Global Fund, The Call to Action Project, The UN Inter-agency Task Team on MTCT and the WHO PMTCT Strategic Vision 2010-2015 Preventing Mother-to-child Transmission of HIV to reach the UNGASS and the Millennium Development Goals.

In all these strategies, WHO continues to take the lead in providing countries with guidelines on how best countries can effectively implement PMTCT interventions.

All the PMTCT initiatives in Zambia are in line with the following Millennium Development Goals (MDGs) and UNGASS targets that are related to women, children and HIV:

Figure 5: MDG GOALS AND UNGASS TARGET

MDG 4: Reduce child mortality

Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

MDG 5: Improve maternal health

Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

Target 5.B: Achieve, by 2015, universal access to reproductive health.

MDG 6: Combat HIV/AIDS, malaria and other diseases

Target 6.A: Have halved by 2015 and begun to reverse the spread of HIV/AIDS.

Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all who need it.

UNGASS Target

By 2010, reduce by 50% the proportion of infants infected by HIV by ensuring that:

Eighty per cent of pregnant women accessing antenatal care have HIV information, counselling and other HIV prevention services available to them.

Figure 6: WORLD HEALTH ORGANISATION STRATEGIC DIRECTIONS

WHO Strategic directions

The WHO strategy to accelerate the scale-up of HIV prevention, care and treatment for women and children comprises seven principal strategic directions as follows:

Commitment:

Strengthen commitment and leadership for achieving full coverage of PMTCT services.

Technical guidance:

Provide technical guidance to optimize HIV prevention, care and treatment services for women and children.

Integration:

Promote and support integration of HIV prevention, care and treatment services within maternal, newborn and child health and reproductive health programmes.

Equitable access:

Ensure reliable and equitable access for all women, including the most vulnerable.

Health systems:

Promote and support health systems interventions to improve the delivery of HIV prevention, care and treatment services for women and children.

Measurement:

Track programme performance and impact on mother-to-child HIV transmission rates and on maternal and child health outcomes.

Collaboration:

Strengthen global, regional and country partnerships for providing HIV prevention, care and treatment for women, infants and young children and advocate for increased resources.

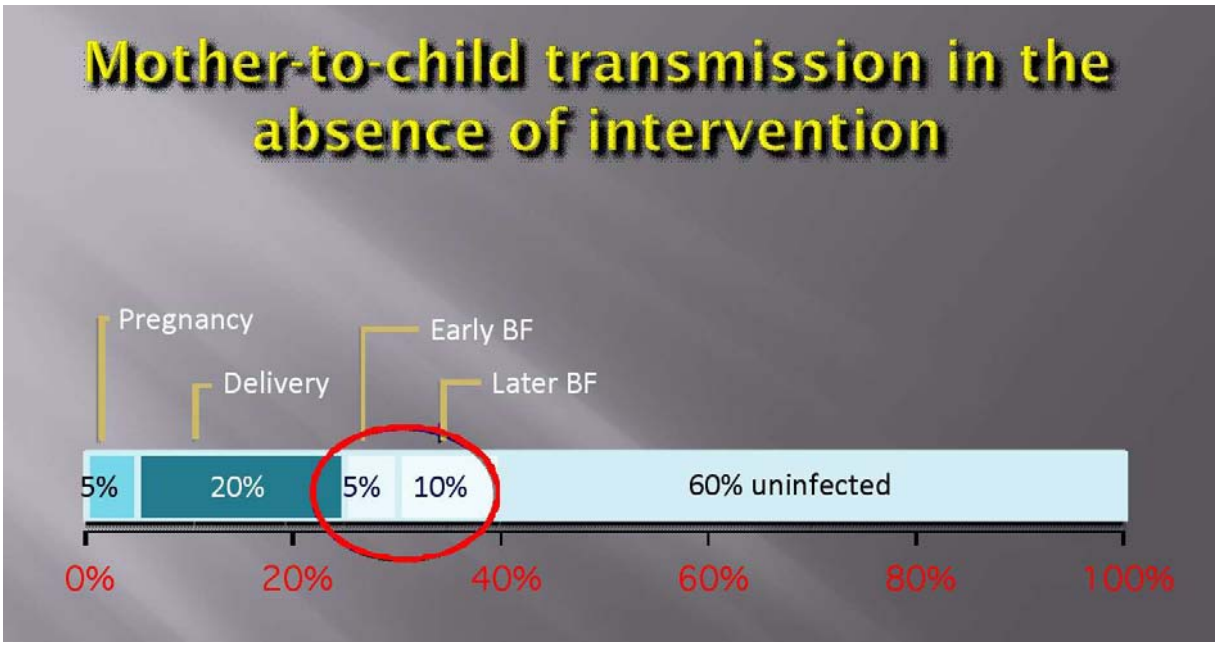
CHAPTER SEVEN

RISK FACTORS FOR TRANSMISSION DURING PREGNANCY, LABOUR, DELIVERY AND BREASTFEEDING

A great deal is now known about what puts an infant at higher risk of becoming infected with HIV from the mother. The viral, maternal, foetal, obstetric and infant factors all influence the risk of MTCT. The most influential factor for MTCT is the amount of virus in the mother's blood – viral load. The risk of transmission is greatest when the viral load is high – which is the case with recent or advanced HIV infection. For this reason, it is therefore vital to prevent a woman from becoming newly infected while she is pregnant or while she is breast feeding.

- **Even without intervention, not all children born to HIV positive women become infected with the virus. However not even one child should be put at risk of HIV infection in Zambia where interventions are available.**

Figure 7: RISK OF HIV TRANSMISSION DURING PREGNANCY, DELIVERY AND BREAST FEEDING



Out of 100 children born to HIV positive women, without any PMTCT interventions, the following transmission rates occur:

- 5 children are likely to be infected during pregnancy;
- 20 children are likely to be infected during delivery; and
- 5-10 children are likely to be infected during breastfeeding.

The term “mother to child transmission” tends to downplay or overlook the role of the father in the transmission process. Consequently, some written material has parent to child transmission (PTCT) instead of mother to child transmission.

Biologically, it is the mother’s HIV status that directly determines if or not a baby becomes infected. However, it should be borne in mind that if a woman becomes infected during pregnancy or while breast feeding, the unborn child or breast fed child can become infected so the role of HIV positive fathers should always be part of the prevention of mother to child transmission (PMTCT) discussion and interventions.

Risk of HIV Transmission During pregnancy

In most cases, during pregnancy, a child is protected from maternal infections by the placenta. Most infections including sexually transmitted and HIV do not normally cross the placenta. However HIV does not cross the placenta unless:

- The mother has viral, bacterial or parasitic (especially malaria) placental infection during pregnancy
- The mother first gets infected with HIV during pregnancy, developing high viral loads
- The mother has severe immune deficiency associated with AIDS
- Maternal malnutrition during pregnancy may directly contribute to MTCT of HIV

Figure 8: Risk of HIV transmission during pregnancy can be reduced by starting ANC early and adhering to treatment or prophylaxis.

To reduce risk of transmission during pregnancy, there is need to ascend above beliefs and myths that discourage women to talk about early pregnancy and shun seeking ANC services.

To reduce risk of MTCT, pregnant women are encouraged to start ANC as early as 14 weeks (3 months)

Risk of HIV Transmission during Labour and Delivery

Infants of HIV infected mothers are at a greater risk of becoming infected during childbirth. Most infants, who acquire HIV during labour and delivery, do so by swallowing or aspirating blood or cervical secretions. Factors associated with high risk of MTCT of HIV during labour and deliveries include long duration of labour following rupture of membranes (breaking of waters) and invasive delivery techniques that increases the baby's chances of mixing with maternal blood.

Zambia has low institutional deliveries and this puts a lot of babies at risk of HIV transmission. There is need to advocate for access to health facilities as well as mobilise community support for all pregnant mothers to deliver at health facilities for safer delivery and be provided with services that can reduce MTCT.

Risk of HIV Transmission through Breastfeeding

HIV is present in breast milk although the viral levels are significantly lower than in blood. The risk of MTCT through breast milk depends on:

- The pattern of breastfeeding (babies that are exclusively breastfed have a lower risk of infection than those that have mixed feeding).
- Breast pathologies (inflamed breast, cracked nipples, bleeding nipples and other breast infections) are associated with higher risk of MTCT.
- Maternal viral load (this is higher with recent infections and advanced disease in mother. The risk doubles when a woman becomes infected with HIV for the first time while breastfeeding.
- Maternal immune status – advanced AIDS
- Poor maternal nutrition status

Infant feeding in the context of HIV

Ideally, breastfeeding should continue to be encouraged as there are added benefits as to why a human baby should be fed with human milk as opposed to animal or formula milk. Human milk is easier for the baby to digest and the milk contains anti-infective proteins that give the baby strength for protection against childhood illnesses. Animal milk contains a lot of casein which is difficult for a human baby to digest.

Figure 9: Reducing HIIV transmission during breast feeding calls for treatment for mother or extended NVP prophylaxis for baby.

The good news is that HIV positive women can safely breastfeed with either the mother on ART or the baby on extended NVP prophylaxis. These options reduce MTCT risk to less than 5%. These services are available in all public health facilities in Zambia

Figure 10: COMPARISON OF HUMAN AND COW MILK

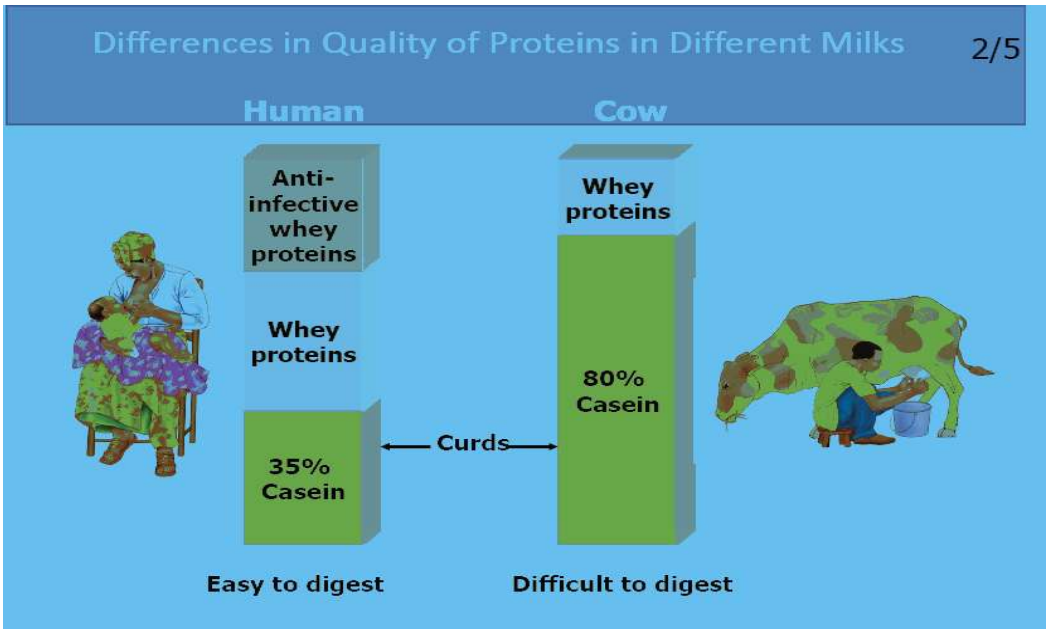


Figure 11: SUMMARY OF MATERNAL FACTORS THAT MAY INCREASE THE RISK OF MTCT OF HIV

Pregnancy	Labour and delivery	Breastfeeding
High maternal viral load – new or advanced infection Viral, bacterial or parasitic placental infection Sexually transmitted infections Maternal malnutrition Immune suppression Starting ANC late	High maternal viral load – new or advanced infection Prolonged rupture of membranes Invasive delivery procedures First infant in multiple birth Delivering at home Not taking treatment or prophilaxis for PMTCT	High maternal viral load – new or advanced infection Early mixed feeding Breast abscess, nipple fissures, inflammation Poor maternal nutrition status Oral disease in the baby Non adherence to treatment for mother or extended NVP prophylaxis for baby.

**It is important to note that strategies for PMTCT aim to prevent, reduce or reverse the above mentioned risks.*

CHAPTER EIGHT THE ROLE OF THE COMMUNITY IN PMTCT

It is important to note that the vast majority of people in Zambia do not have HIV (ZDHS, 2007) and we can still do much to ensure that they stay safe. There are many different things communities can do to prevent the spread of HIV and AIDS. Educate every person in the community to be aware that MTCT can be prevented if all work together using comparative advantages.

It must be every citizen's responsibility to encourage and help pregnant women access ANC services, encourage couples to know their HIV status, and facilitate adherence to treatment and prophylaxis for pregnant women and breast feeding babies. Towards the end of pregnancy, pregnant women who live far from delivery centers should be encouraged to utilize waiting homes or mothers shelters where available (PMTCT Guidelines, 2010).

Trained community members are expected to help with the following:

- Encouraging pregnant women in their community to go for early antenatal booking as early as 14 weeks (3 months).
- Encouraging women to deliver in health facilities
- Encouraging couple counseling and testing for HIV
- Encouraging and supporting disclosure of HIV test results
- Performing group education, testing and counseling
- Offering on-going psychosocial counseling
- Reducing stigma and discrimination associated with HIV and AIDS.
- Supporting adherence to treatment (ARVs and co-trimoxazole)
- Advocating for Male involvement in PMTCT
- In the event of a home delivery, ensure that the mother and newborn baby are taken to the health facility for medical assessment, timely administration of ARVs and immunizations.
- Supporting breastfeeding and extended NVP prophylaxis

Involvement of Men

The involvement of men has long been accepted as key to reproductive health services acceptance and adherence in Zambia, and is increasingly becoming appreciated as important for successful uptake and utilization of PMTCT interventions.

Men are, indeed, still the decision makers in many of the settings where PMTCT is offered. For PMTCT to be successful, the issue of male involvement needs to be addressed as there have been marked increases in HIV testing uptake and ARV prophylaxis use when partners are involved, UNGASS (2010). Media has a role to play by designing communication messages that encourage and empower men to take part in reproductive health initiatives. There is need to capitalise on the positive gender stereotype that men protect the family.

Challenges faced by PMTCT Programmes

Even where PMTCT services are available, not all women receive the full benefit. Reasons for HIV positive pregnant women not accessing PMTCT services include:

- Fear of Stigma and discrimination;
- Home deliveries;
- Social and physical barriers; and
- Low male involvement.

HIV testing is critical because women who do not know their HIV status cannot benefit from interventions. However some women refuse to be tested because they fear learning that they have a life-threatening condition.

Women who initially test negative early in pregnancy can become infected during pregnancy. Without returning to clinics for retesting, treatment opportunity for PMTCT is not accessed. Sometimes, women who test HIV positive do not return to clinics for follow up visits, or fail to take the drugs they have been given. Fear of disclosure is a common reason why women are reluctant to return to their HIV clinic.

REFERENCES

1. Auvert B, Taljaard D, Lagarde E, et al (2005). Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS Med*; 2(11):e298

2. Baggaley R, Garnett GP, Ferguson N M (2006). Modelling the Impact of Antiretroviral Use in Resource-Poor Settings. PLoS Med 3(4): e124. doi:10.1371/journal.pmed.0030124

3. Bailey C, Moses S, Parker C B, et al (2007). Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomized controlled trial. *Lancet:* 369: 643-56.

4. Gray H, Kigozi G, Serwadda D, et al (2007). Male circumcision for HIV prevention in young men in Rakai, Uganda: a randomized trial. *Lancet:* 369:657-66.

5. HIV Prevention Strategy (2009). National HIV/AIDS Council, Republic of Zambia.

6. Integrated Prevention of Mother-To-Child Transmission of HIV (2010). National Protocol Guidelines, Ministry of Health, Republic of Zambia.

7. NASF 2011-2015(2010). National AIDS Council, Republic of Zambia.

8. Zambia Demographic and Health Survey (2007). Central Statistical Office (CSO), Ministry of Health (MOH), Tropical Diseases Research Centre (TDRC), University of Zambia, and Macro International Inc. 2009. Calverton, Maryland, USA: CSO and Macro International Inc., ZDHS 2007

9. Zambia HIV Prevention Response and Modes of Transmission Analysis (MoT), (2009). Zambia National HIV/AIDS/STI/TB Council, Lusaka, Zambia. Available at: [www.nac.org.zm]

10. Zambia Country Report (UNGASS), (2010). Multi-sectoral Response Monitoring and Evaluation Biennial report, Submitted to the United Nations General Assembly Session on AIDS Declaration and Commitment.

11. Weiss H A, Quigley M, Hayes R (2000). Male circumcision and risk of HIV infection in sub-Saharan Africa: a systematic review and meta-analysis. *AIDS*;14:2361-70.

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