

**GUIDELINES FOR PREVENTION OF MOTHER TO
CHILD TRANSMISSION (PMTCT) IN TANZANIA**

DRAFT

MINISTRY OF HEALTH

DAR ES SALAAM

TANZANIA

MARCH 2003

TABLE OF CONTENTS

<i>LIST OF APPENDICES</i>	iv
<i>ABBREVIATION AND ACRONYMS</i>	v
ACKNOWLEDGEMENT	vii
FOREWORD	viii
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: COUNSELLING	3
2.1 Core strategies to achieve these objectives:	3
2.2 Operational guidelines for counseling in PMTCT in the Tanzania context	4
2.3 General guidelines for provision of counseling in PMTCT	5
2.4 Staffing and management of counseling for PMTC at facility level.....	6
2.5 Registration and patient flow in ANC and other MCH services.	7
2.6 Informed decision making	7
2.6 Specific guidelines for counseling in PMTCT	11
CHAPTER 3: OBSTETRIC CARE IN HIV SERO POSITIVE PREGNANT WOMEN	19
3.1 Introduction	19
3.2 HIV infection in pregnancy.....	20
3.3 Mother to Child Transmission.....	22
3.5 Modification of obstetric care to HIV seropositive pregnant women	25
3.6 Antiretroviral regimen for PMTCT	27
3.8 Post natal care of the HIV seropositive mothers and infants.....	31
3.9 Special issues.....	35
3.10 Universal Safety Precautions	36
CHAPTER 4: HIV/AIDS AND INFANT FEEDING	38
4.1 Facts on mother to child transmission of HIV (MTCT).....	38
4.2 THE IMPORTANCE OF BREASTFEEDING.....	39
4.3 INFANT FEEDING OPTIONS FOR HIV POSITIVE WOMEN.....	41
4.4 COMPLEMENTARY FEEDING	51
4.5 MAKING DECISION AND IDENTIFYING SUPPORT	52
4.6 CARE OF THE MOTHER AND CHILD	54
CHAPTER 5: GUIDELINE FOR LABORATORY SERVICES	57
5.1 Recommendation for rapid hiv testing technology to be used for the Prevention of Mother to Child Transmission project	57

5.2	Sample collection.....	58
5.3	Testing algorithm for pregnant women.....	59
5.4	Choice of simple/rapid assays suitable for Tanzania.....	61
5.5	Diagnosis of HIV infection in children.....	62
5.6	Baseline Laboratory Evaluation.....	63
5.7	Quality control.....	64
5.8	National quality control assessment scheme.....	65
5.9	Other laboratory tests.....	65
5.10	Procurement and storage of test kits and reagents.....	66
5.11	Monitoring and Evaluation.....	66

CHAPTER 6: MANAGEMENT OF ARV’S AND OTHER SUPPLIES FOR PMTCT 68

6.1	Management of the drug(s) and supplies at Central level:-.....	68
6.2	Management at Hospital level:-.....	68
6.3	Monitoring the Utilization of the drugs:-.....	69

CHAPTER 7: COMMUNITY PARTICIPATION IN PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV 70

7.1	Understanding the Community.....	70
7.3	Entering the Community.....	71
7.4	Advocacy and communication.....	72
7.5	Community mobilization and empowerment.....	76
7.6	Multisectoral partnership.....	78
7.7	Psychosocial issues related to pmtct in the community.....	78

CHAPTER 8 : DEVELOPMENT OF IEC MATERIALS ON PMTCT 81

8.1	Important considerations when developing iec strategy.....	82
8.2	Planning.....	83
8.3	Audience segmentation (targeting).....	85
8.4	Pre-testing the messages/materials.....	86
8.5	Monitoring and evaluation:.....	87
8.6	Coordination and collaboration.....	88
8.7	Roles and responsibilities.....	88

CHAPTER 9: MONITORING AND EVALUATION 90

9.1	Monitoring.....	90
9.2	Evaluation.....	92
9.3	Data collection, entry and analysis.....	94

REFERENCESxxv

LIST OF APPENDICES

APPENDENCIES	i
APPENDIX 2.1 Voluntary Counseling and Testing (VCT) Supervision and Support	i
APPENDIX 2.2 Professional code of ethics and practice of counselors.....	vi
APPENDIX 3.1	xii
APPENDIX 3.2	xv
APPENDIX 4.1 The Ten Steps to Successful Breastfeeding	xviii
APPENDIX 4.2 The CODE.....	xix
APPENDIX 4.3: Estimation of the cost of cow’s milk option	xix
APPENDIX 9.1: PMTCT Tool 1: Antenatal Counselling Daily Register.....	xxi
APPENDIX 9.2: PMTCT Tool 2: Labour, Delivery and Birth Register	xxii
APPENDIX 9.3: PMTCT TOOL 3: MOTHER FOLLOW UP.....	xxiii
APPENDIX 9.4: PMTCT TOOL 4: CHILD FOLLOW UP.....	xxv

ABBREVIATION AND ACRONYMS

AIDS	-	Acquired Immunodeficiency Syndrome
ANC	-	Ante Natal Clinic
ARI	-	Acute Respiratory Infection
AZT	-	Azidothymidine
BFHI	-	Baby Friendly Hospital Initiative
CD4+cells	-	Helper – Iriducer T Lymphocytes
CD8+cells	-	Cytotoxic T Lymphocytes
COC	-	Combined Oral Contraceptives.
DHB	-	District Health Board
DMO	-	District Medical Officer
DNA	-	Deoxyribonucleic Acid
ELISA	-	Enzyme Linked Immunosorbent Assay
HIV	-	Human Immunodeficiency Virus
HIV-1	-	Human Immunodeficiency Virus types I
HIV-2	-	Human Immunodeficiency Virus type 2
HMIS	-	Health Management Information System
IMCI	-	Integrated Management of Childhood Illnesses
INH	-	Isoniazid
IUCD	-	Intra Uterine Contraceptive Devices
LBW	-	Low Birth Weight
M&E	-	Monitoring and Evaluation
MTCT	-	Mother to Child Transmission
NNRTI	-	Non Nucleoside Reverse Transcriptase Inhibitor
NRTI	-	Nucleoside Reverse Transcriptase Inhibitor
NSI	-	Non Syncitial Inducing
NVP	-	Niverapine
ORS	-	Oral Rehydration Solution
PASADA	-	Pastoral Activities and Services for the People with AIDS
PCR	-	Polymerase Chain Reaction

PMTCT	-	Prevention of Mother to Child Transmission
PTB	-	Pulmonary Tuberculosis
RPR	-	Rapid Plasma Reagin
SB	-	Still Birth
SI	-	Syncitial Inducing
STD	-	Sexual Transmitted Diseases
TBA	-	Traditional Birth Attendant
TPHA	-	<i>Treponema Pallidum</i> Haemagglutination Assay
TPPA	-	<i>Treponema pallidum</i> Passive Agglutination
UNICEF	-	United Children's Fund
VCCT	-	Voluntary Confidential Counselling and Testing
VDRL	-	Venereal Disease Research Laboratory
WHO	-	World Health Organization
ZDV	-	Zidovudine

ACKNOWLEDGEMENT

These guidelines are the results of efforts of many partners in the National response in the prevention of mother to child transmission of HIV/AIDS in Tanzania.

I would like to recognize and express deep gratitude to all the pioneers in the PMTCT pilot phase in Tanzania whose experience, expertise and ideas helped to develop this document.

The Ministry of Health (MOH) also wishes to acknowledge the technical contribution of the following institutions that participated in the development of this document. These institutions include:-Muhimbili University College of Health Sciences, Muhimbili National Hospital, Bugando Medical Centre, Kagera Regional Hospital and Mbeya Referral Hospital. Others were; Pharmacy Board, National AIDS Control Programme, Medical Stores Department, Anglican Church of Tanzania, PASADA, Tanzania Food and Nutrition Centre, Health Education Unit and Ministry of Health.

I am also grateful to Dr. Yahya Ipuge and Dr. Angela Ramadhan for their tireless efforts in coordinating the development of this document.

Furthermore, I am very much indebted to all those individuals, who contributed in one way or another to the success of these guidelines.

Finally, I acknowledge the financial support offered by the Ministry of Health in collaboration with the Centre for Disease Control (CDC) which capacitated the development of these guidelines.

M..J. Mwaffisi

PERMANENT SECRETARY

FOREWORD

Prevention of Mother to Child Transmission of HIV (PMTCT) in Tanzania is a strategy aimed at reducing the number of children born with HIV infection. Transmission of HIV may occur during pregnancy, delivery or postnatal, through breastfeeding.

The National average prevalence of HIV infection among persons aged 15 – 59 years is estimated to be about 10%. Bearing in mind that this carries a considerable percent of childbearing age adults, this implies that there is also a greater chance of infants being born with HIV/AIDS if serious measures are not taken.

Several strategies have been tried in Tanzania to reduce HIV transmission but recorded new cases and infants born with HIV have been on the increase. In view of this, the Ministry of Health is committed to reduce the rates of transmission of HIV infection from the mother to the child by implementing the PMTCT interventions.

The Ministry of Health has developed guidelines which will be used by health care workers at all levels of health care system in the country. The aim of these guidelines is to equip health care workers with knowledge in order to have a uniform approach in carrying out the PMTCT interventions in the Reproductive and Child Health Services.

It is my hope that these guidelines will be utilised at maximum within the ongoing Health Sector Reform process. This will enhance quality of Reproductive and Child Health Services and increase community awareness and participation.

PMTCT is not an event, it is a process and these guidelines are just a start. I strongly encourage ideas and recommendations on how to improve them so that they may be used to update this document from time to time.

I urge all users of these guidelines to make it a living document in the Government's effort to improve the health and life of children, taking into account emerging community needs and scientific developments.

Hon. A.M. Abdallah
MINISTER FOR HEALTH

CHAPTER 1: INTRODUCTION

Mother to child transmission of HIV in Tanzania is set to have a dramatic and deleterious impact on child survival. Using an estimated HIV prevalence rate of 12% for antenatal women and a total of vertical transmission rate of approximately 40%, 72,000 babies will become infected with HIV from their mothers (approximately 25,000 through breastfeeding) per year. Ten percent of these babies would have died anyway in the absence of HIV in the first year of life from common childhood diseases. So mother to child transmission (MTCT) accounts for the additional 64,800 child deaths. Adding 64,800 to the existing 150,000 child deaths from common childhood infections represents a 43% increase in infant mortality. This is a big set back to the improved infant survival enjoyed by the country in the last two decades through universal immunization and improved integrated management of childhood illnesses (IMCI).

Realizing this the Ministry of Health in collaboration with UNICEF initiated a pilot programme on prevention of mother to child transmission of HIV in 2000 after the initial planning and needs assessment which started way back in 1998. The pilot programme involved the four national consultant hospitals and one regional hospital namely, Muhimbili National Hospital, Bugando Medical Centre, Mbeya Referral Hospital, Kilimanjaro Christian Medical Centre (KCMC) and Kagera Regional Hospital.

The purpose of the piloting programme was to find the feasibility of integrating prevention of mother to child transmission of HIV in routine Reproductive and Child Health Services throughout the country.

The experience gained in the piloting phase was that there has been a high acceptance rate for testing among pregnant women (>80%) and the whole exercise seemed feasible and practicable. However, there was low male partner's involvement and low community participation.

In view of the two-year experience and the ever worsening rate of HIV infection among children due to MTCT, the Ministry of Health has decided to scale up PMTCT services to the other health facilities beyond the pilot sites.

The purpose of this document is to provide guideline information on PMTCT to health care workers responsible for implementing reproductive and child health services at all levels of health care delivery system in the country.

The guidelines consist of eight components which include: voluntary counselling and testing, infant feeding option counselling, obstetric care, management of ARVs and other supplies, laboratory testing algorithm, community participation, information education and communication and monitoring and evaluation.

CHAPTER 2: COUNSELLING

Objectives of counseling in PMTCT:

1. To prevent maternal to child transmission of HIV/AIDS, through uptake of PMTCT preventive interventions
2. To prevent transmission of HIV/AIDS in child-bearing populations, through behavior change implementation
3. To improve the quality of life and survival in HIV infected and affected women and families

2.1 Core strategies to achieve these objectives:

HIV/AIDS during pregnancy and parturition has impacts at individual, family and societal levels. Evidence from studies conducted within Tanzania, emphasizes the importance of a client-centered approach towards HIV related counseling and the need of strict confidentiality to sustain counseling services. The high rates of HIV transmission in Eastern and Central Africa points to the need for a preventive component in counseling in HIV/AIDS, as a means to an end in itself; this is in addition to the process nature of HIV/AIDS counseling. Given these observations, the core counseling strategies that will be used to achieve the objectives of counseling in PMTCT include:

1. Voluntary counseling and testing
2. Nutritional and infant feeding options counseling
3. Crisis counseling
4. Supportive counseling

The counseling models or approaches to be used will seek to address the following: (1) How behavioral change occurs; (2) behaviors that need changing; and (3) where these changes need to occur to prevent HIV infection and its transmission to other people at the individual, community, and societal levels.

As a result the three models deemed most appropriate in the Tanzanian context will include a combination of *client-centered*, *behavior change* and *psychosocial* models because in HIV/AIDS, counseling aims at facilitating not only behavioral change but also psychosocial support.

Counseling interventions in PMTCT will need to occur at the individual, between couples, within the family and at the community-working in tandem/collaboration with grass-root levels of the public administration systems and CBOs/NGOs.

2.2 Operational guidelines for counseling in PMTCT in the Tanzania context

National and local levels oversight of counseling in PMTCT

1. The MoH – PMTCT strategy in coordination with the MoH – NACP shall convene monitoring meetings of a National PMTCT task force to ensure national and local coordination of PMTCT services in Tanzania
2. Every Regional/District Health Management Team (R/DHMT) should select one person to coordinate HIV/AIDS counseling activities who would be a contact point for the Regional/District Maternal and Child Health Coordinator (MCH Coordinator) to ensure national guidelines for PMTCT are followed and all standards for counseling in PMTCT are met. The counseling coordinator may or may not be the Regional/District AIDS Control Coordinator. The suggestion is that a person with counseling training and skills (Minimum requirement of 6/52 training in VCT) be appointed to assist the RACC/DACC on issues related to counseling in HIV/AIDS.
3. The district counseling coordinator should convene regular technical support meetings of VCT service providers that should include providers of VCT in PMTCT working within MCH facilities.
4. A national supervision of counseling in PMTCT checklist should involve such issues as supply of commodities like test kits, vacutainers, needles, condoms, and supplies for universal precautions and ARVs. Supervision that at district level will be done by the MCH coordinator in collaboration with the counseling coordinator should also include assessment of allocation of counseling skills/knowledge resources and confidential record keeping as a component of quality assurance tools.

2.3 General guidelines for provision of counseling in PMTCT

Training for counseling in PMTCT

1. All counseling providers in PMTCT should be nurse midwives counselors.
2. Nurse-midwife counselors should undergo at least six weeks training in counseling that includes inculcation of knowledge and skills in basic counseling and VCT, following a recommended national curriculum. This will ensure their competence in provision of VCT services.
3. Trained nurse midwives (Nurse midwife (NMW) counselors) should in addition have been exposed to a minimum of at least three weeks training in other counseling issues in PMTCT including ongoing supportive and bereavement counseling, nutritional counseling, counseling for infant feeding choices and ARV adherence.
4. Short courses should be developed for counseling to meet the needs of special populations such as pregnant adolescents and drug abusers.
5. Persons supervising counseling should in addition be exposed to a two-week course in counseling supervision. This would include the MCH i/c of facilities providing PMTCT and the District Counseling Coordinator.
6. Support auxiliary staff, should be exposed to training for orientation to PMTCT that covers the goals and purposes of PMTCT, the general structure of PMTCT providing services, communication skills and maintaining confidentiality.
7. Counseling providers in PMTCT should be exposed to refresher training sessions on at a minimum on an annual basis.
8. Training manuals and teaching materials (training packages) should be developed to aid all training activities of counseling providers, supervisors and support staff in PMTCT.
9. All training curricula should be periodically evaluated and updated.
10. Issues related to professional development of nurse-midwife counselors should follow the guidelines outlined by the MoH-NACP.

2.4 Staffing and management of counseling for PMTC at facility level

1. All MCH facilities should have adequate numbers of trained nurse midwife counselors.
2. Trained nurse midwives counselors should have been exposed to a minimum of six weeks training in VCT.
3. The MCH i/c at facility level shall be the coordinator of all counseling activities at this level.
4. NMW counselors should work with the rest of the PMTCT staff as a team that is multi-disciplinary that also has multi-sectoral working linkages with organizations/institutions working in HIV/AIDS related issues in the area.
5. Each site should have a minimum of two NMW counselors per site or a ratio of one NMW counselor to 10 new ANC attendees per day although the optimal would be a ratio of 1:6 respectively. (1:10 should be a consideration for sites with a large population of new ANC attendees)
6. NMW counselors should be released by facility managers from other duties to allow them to devote 100% of their working time to VCT and other counseling needs in PMTCT.
7. NMW counselors should have the necessary knowledge and skills to conduct rapid tests, using recommended national algorithms, in the absence of the availability of a full time laboratory technician in the MCH facility. A laboratory technician should however supervise testing as per testing guidelines. Peer support groups for nurse-counselors should be held on a weekly basis at facility level for debrief and prevention of burnout.
8. Individual/group NMW-counselor support session should be held on monthly basis with the District Counseling Coordinator at the beginning and maybe spread to quarterly basis when services are well established.
9. Facilities offering PMTCT should also cater for the special family planning and STD recognition and management needs of pregnant women living with HIV/AIDS
10. Facilities offering PMTCT should at a minimum have two rooms available for counseling. Attention needs to be paid here to the fact that testing for HIV does not take up space in one of the rooms. They needs to be a room specifically prepared for bleeding and testing with all the necessary small lab rooms requirements. Thus in principle for effective PMTCT it is recommended that a minimum of three rooms be made available.

11. The available rooms should be comfortably furnished to cater for the needs of pregnant women who will be seated for between 30-45 minutes at a stretch with the NMW counselors
12. The available rooms should be able to provide the required privacy for the counseling encounter and hence should not also be used for other clinic activities other than testing and counseling where rapid tests are in use.
13. A secure records section should exist that allows for safe and confidential storage of counseling records; should this not be available, the counseling rooms should be sizeable enough to accommodate lockable cupboards for record storage
14. Counseling records storage should be organized in a manner that allows their easy retrieval when clients attend for a counseling re-visit.
15. All counseling encounters should be carefully documented to allow easy access of information for weekly and monthly counseling reports.

2.5 Registration and patient flow in ANC and other MCH services.

1. Interactive HIV/AIDS pre-test **information** in groups should be offered as part of the health education sessions that are conducted for all women in MCH facilities.
2. All women attending antenatal clinics (ANC) as incident visits should be offered voluntary counseling and testing (VCT) using an opting-out approach. Towards this end, registration for ANC in all first time attendees should be linked to offering **individual pre-test counseling**.
3. All MCH facilities should have nurse-midwives with training in VCT at the minimum requirement as stipulated by NACP (1999) of six weeks exposure (240 Hrs of theory and practical training). Hence creating a cadre of Nurse-Midwife Counselors.
4. All MCH facilities should strive to provide same day (within an hour) results of HIV test to clients by using the MOH-NACP recommended rapid test kits.
5. Clients that are not ready to receive test results on the same day should not be pressured.

2.6 Informed decision making

- 1 All efforts should be made to ensure clients understand an HIV screening test is to be performed.
- 2 Informed consent for the testing procedures should be the rule.
- 3 Clients wishes should be respected if the refuse to be tested and such refusal should have no impact on the quality of MCH services provided for the client

- 4 The informed consent process for HIV testing as per the National Guidelines for HIV Counseling in Tanzania (Current policy verbal consent MoH, 1999) should be followed and documentation to this effect is available. Such documentation will include a “check mark” on counseling monitoring forms to indicate that verbal consent for testing has been provided by the client.

Confidentiality and anonymity

1. Given the service-oriented goals of PMTCT, anonymity is not a feasible option in counseling for PMTCT.
2. Evidence exists that indicates that lack of confidentiality is a significant barrier to VCT in general. Given the privileged nature of information on HIV test results, strict confidentiality will be the operating rule for counseling in PMTCT. This should be operationalized in the following ways:
 - All counselors should sign an oath of confidentiality once they have completed their training. Such an oath will be in operation in the professional life of the counselor. In the current environment where an official professional cadre of counselors does not exist, registration of counselors should occur at district level under the District Counseling Coordinator.
 - Use of identifying codes alone on all testing forms
 - Use of identifying codes and clients initials on all counseling reporting forms
 - Strict control of access to information that links clients name to the clients codes or clients test results
 - Strict control over releasing results to other health workers without the clients consent.
 - Confidentiality should be operationalized into all the procedures of the MCH facility, this includes:
 - a. Management of the waiting room to decrease potential stigma
 - b. Management of client-flow procedures to ensure smooth integration of VCT into MCH services
 - c. Availability of facilities for locked record storage
 - d. Access of client’s records should be only to staff with training in maintenance of confidentiality.
 - e. There will be no provision of written HIV test results, unless a client makes a written request for results. In this event, a copy of HIV test results will be provided.

3. In the event that privileged information is required in writing for official purposes outside the health sector and deemed to be of benefit for the client, such communication shall occur following acquiring written permission to release information from the client and will be dispatched under confidential seal.
4. Disclosure of test results shall only be to the individual who has undergone pre-test counseling and testing. In the event that client requests assistance from a counselor in disclosure of their test results to a significant other, this should only happen upon signed permission by the client¹.
 - It is recommended that disclosure of test results to a third party takes place at the ANC and the counselor assists the client in the process of sharing their results with the intended person.
5. Shared confidentiality will occur as is the practice in the health sector between health care providers where this is deemed necessary for the effective care of persons living with HIV/AIDS.

Who can be tested?

1. Women and their partners aged 18 and above who have provided informed consent to be tested.
2. Women and their partners aged 15-17 years (older adolescents) who are married, pregnant or engaged in behavior that puts them at risk of acquiring HIV/AIDS
3. Children below the age of 15 years- Drawing from the Child Development Policy of 1996 and the National Population Policy of 1996 that recognize sexual activity among adolescents and the right and need for reproductive health services for adolescents all pregnant adolescents requesting counseling and testing should be offered these services. However the counselor should strongly encourage the pregnant adolescent to inform parent(s)/legal guardian(s) of their decision to test and their test results. However, pregnant adolescents will not be coerced to inform a third party about their decision to test or their test results. Pregnant adolescents may need more psychological support than adults. A non judgmental attitude is imperative in such situations the clients (child and/or parents/guardians) should have access to a counselor with additional training in the unique issues related to HIV counseling and testing for adolescents.
4. 4. Persons of unsound mind (legal definition) can receive counseling, but testing should be deferred to such a time when the person of unsound mind has recovered. In the event that the person of unsound mind is mentally retarded, testing should be done with the knowledge and

¹ Disclosure to third Party Form does exist at the NACP

participation of a parent/legal guardian and it is deemed that the best interests of the person of unsound mind can be served by testing.

Referrals

1. Counselors and the District Counseling Coordinator should actively work to ensure that the PMTCT service becomes part of the existing network of services relevant to HIV/AIDS in order to build and maintain two-way referral systems.
2. Referral services that are used by the PMTCT counseling service should be known to treat persons with HIV/AIDS with respect and consideration.
3. PMTCT counselors should be familiar with additional follow-up services available in their communities. They should work with the counseling coordinator to develop and regularly update a directory of relevant services available in their area.
 - Such services include specialized medical care, mental health care, alcohol and drug use prevention/management, spiritual care, supportive and home based counseling, nutrition and food supplementation, legal, interventions for gender-based violence, income-generating assistance etc.
4. Clients should agree to referral and understand the likely necessity of the service providing their names to the agency/service to which they are being referred. Confidential seal should protect any written documentation for referral.
5. Clients should be given the opportunity to decline referral if they do not wish their name and HIV status to be disclosed to the agency/service to which they are being referred.

Mobile outreach

1. In remote areas, outreach VCT for PMTCT should be integrated in existing outreach MCH services (ANC, child growth monitoring and immunization, syndromic management of other STIs and family planning services).
2. Consideration of other outreach PMTCT services is recommended such as identification and treatment of tuberculosis and provision of TB prophylaxis.

2.6 Specific guidelines for counselling in PMTCT

Confidentiality

1. A coded name linked record keeping system will be used for all counseling contacts in PMTCT, utilizing a strict confidentiality procedure. The register that will be maintained will link identifying codes to names of clients. All counseling files will be coded with the identifying codes, while all forms contained within these folders will have identifying codes and client initials. The register and files will be kept in locked cabinets when not in use.

Pre-test counseling

1. Pre-test counseling should always occur at an individual level. However, pre-test information on HIV and the test should be provided in small interactive groups (6-8 people) as part of routine health education activities for all newly booked antenatal care contacts.
2. The scope of pre-test information in groups will include discussions on the HIV/AIDS situation in the country, basic facts on HIV/AIDS transmission and prevention with focus on PMTCT, basic facts about the test and interpreting results. (Infrastructure constraints at some MCH facilities need to be considered)
3. Both pre and post test counseling will draw from three models in HIV/AIDS counseling shown to be effective in the Tanzanian context. These include a client centered approach (C), a behavioral change approach (B), and an ongoing psychosocial support approach (P) - CaBaPa.
4. When clients request testing but decline counseling; it should be explained that VCT in PMTCT services is provided as a package that includes both counseling and testing. The benefits of counseling should be explained and the client encouraged to return when the client has more time and is ready to accept the full package of both HIV voluntary counseling and testing.
5. When clients request counseling only and decline to be tested, the service should be provided without any pressure or coercion to test.
6. Clients should be encouraged to disclose their test results if they have been to other centers for HIV testing. The reasons for seeking repeat testing should be explored with clients who have been tested elsewhere. Clients who seek repeated testing should be counseled about the reasons they continue to seek testing and unnecessary repeat testing should be discouraged, if the reasons provided are not valid.

7. Individual pre-test counseling should address the following issues;
 - Clarification of understanding of issues addressed in pre-test information in groups
 - Personalized risk assessment
 - Developing with client a risk reduction plan
 - Exploring support structures available for client
 - Exploring clients readiness to receive test results
 - Exploring what might client do if tested negative or positive
 - Exploring potentials for condom use including demonstration of condom use
 - Addressing any special needs presented by the client
8. At the end of each pre-test counseling session, the encounter should be carefully documented in available forms.

Individual post-test counseling

1. Individual post-test counseling should address the following issues;
 - Readiness and willingness to receive results
 - Giving the test results and helping client reach acceptance of the HIV test results
 - Reviewing the risk reduction plan and providing counseling support for its implementation
 - For positives addressing issues of positive living
 - For negatives exploring the window period and a date given for re-test.
 - Discussing safe disclosure of test results to partners and significant others and personalized options for safe disclosure
 - Family planning counseling and education for both HIV negative and positive women
 - Reviewing condom use education and use
2. It should be noted that given the variety of reactions to test results, post-test counseling may involve more than one session, to ensure all areas are covered with clients.
 - On going counseling support sessions should include nutritional and dietary counseling, counseling on infant feeding options and assessment for medical needs including severe psychological reactions as well as other needs that clients might request, such as legal assistance, social support etc.

3. Appropriate referrals should be made to additional services as needed such as medical, social (govt., CBOs/NGOs), legal, spiritual and mental health care /psychological support. This may be especially the case for HIV positive clients. Procedures for confidential referrals as outlined under the referrals section should be followed.
4. At the end of each post-test counseling session, the encounter should be carefully documented in available forms.

Nutritional counseling and counseling for infant feeding options

1. Nutritional counseling and counseling for breastfeeding options should be provided to pregnant women as well as couples.
2. Nutritional and dietary counseling should include the following issues
 - Education on nutritional needs during pregnancy and lactation
 - Exploration of locally available foods and personalized dietary options for the woman during pregnancy and lactation
 - Education on the nutritional needs of infants; exclusive breast feeding and weaning options as well as other infant feeding options
 - Education on HIV transmission and breastfeeding
 - Exploration of locally available infant feeding choices and their cost
 - Exploration of personalized options for breast feeding versus other infant feeding choices
3. Nutritional counseling and counseling for infant feeding options should be addressed during post test counseling (usually before 30 weeks gestation), reviewed before delivery, very soon after delivery and at the first post-natal clinic visit.
4. At the end of each nutritional and infant feeding counseling session, the encounter should be carefully documented in available forms.

Couple counseling

1. All MCH facilities should put strategies in place to ensure male involvement in antenatal, natal and postnatal care as well as child health monitoring.
2. Pregnant women should be encouraged to attend PMTCT providing facilities with their partners.
3. Issues that should be addressed in couple counseling should include:
 - Confidentiality and its limits

- Aspects covered under pre-test counseling using an approach that allows equal attention to be paid to individual concerns and feelings of both parties.
 - Ensure that there is mutual consent to be counseled, tested and receive results together. Should the counselor feel one party has been coerced to come for VCT, the couple should be requested to return for pre-test counseling at a later date together when they are both ready to receive the service.
 - Couples who come together to a PMCT providing facility for VCT should be encouraged to receive results together.
 - a. This will strengthen their commitment to the support of each other and commitment to other HIV preventive interventions.
 - At pre test counseling for couples, a thorough risk assessment and personalized risk reduction plan is mandatory
 - During post test counseling for couples, risk assessment and risk reduction plans should be revisited and appropriately adjusted by the couple dependent on their test results.
 - Counseling support should be provided for the implementation of the chosen risk reduction strategy.
 - For concordant HIV positive couples counselor should address issues of positive living
 - For concordant HIV negative couples counselor should explore the window period and a date given for re-test.
 - When dealing with discordant couples, counselors should ensure that no sides are taken, a non-judgmental approach is used and couples are encouraged to support each other.
3. Issues related to referral in couple counseling should follow the guidelines noted for post-test counseling and the referral section above.

Counseling pregnant, single adolescents

1. Adolescents are a special group, who have started risky sexual activities, and can still be guided into safer sexual practices. Adolescent girls are also a special vulnerability group for transmission of STIs

including HIV/AIDS. Counseling this group should take their special needs into consideration. Emphasis in counseling should be in:

- Risk assessment and risk reduction strategies – including education and demonstration of condom use and exploration of other risk behaviors such as alcohol and drugs use behaviors
- Exploration of potentials for future abstinence
- Exploration of social support systems and referral to youth support groups/NGOs

Assessment for clinically significant psychological distress

1. Depression has been noted to occur at a higher rate in the post-natal period amongst HIV positive mothers affecting weight gain and motivation to engage in preventive interventions. NMW counselors should be able to recognize depression and make appropriate referrals for treatment.

2.7 Quality assurance and monitoring of counseling for PMTCT services

Quality assurance for Counseling

- 1 The aim for quality assurance in VCT in ANC is to ensure that there is consistent and systematic application of quality assurance and ongoing hands-on supervision for sustainable delivery of effective PMTCT services
- 2 Quality assurance is necessary for NMW counselors so as to ensure high quality and standardization of service, safeguarding of the clients, prevention of burnout of counselors, professional safeguarding for counselors especially as counseling is a relatively new service in Tanzania and as yet not established as a profession with clear ethical and professional standards.
 - Practicing NMW counselors do not have a backing of a Professional Association of Certified Counselors to guide their practice or to protect them professionally
- 3 The methods to be used in quality assurance in PMTCT services will be (1) case studies, (2) counselor session self-assessment, (3) session observation, (4) client satisfaction measures and (5) objective and objective measures

General guidelines for quality assurance, monitoring and evaluation for counseling

1. Elements of Supervision, Monitoring and Evaluation should be integrated into the PMTCT services from the onset.
2. Quality assurance for counseling in ANC will be offered by experienced counselors with supervisory capacity
3. A supervisor (or system of supervisors at different levels) will be responsible for making sure ANC staff perform their PMTCT activities according to a specified standard of quality
4. The standard of quality should be defined nationally and adopted by the regions and districts this will include aspects of program design, programme indicators and staff job descriptions
5. The counseling supervisor will ensure PMTCT staff have conveyed correct and complete information to the client at the appropriate time
6. The counseling supervisor will ensure PMTCT staff are utilizing their skills in counseling appropriately and completely
7. The counseling supervisor works to maintain staff morale and positive attitudes(counseling support works to change ingrained habits that may run counter to type of counselor client interaction required for PMTCT)
8. The counseling supervisor will ensure that the environment (including supplies, logistics of client flow etc) is conducive to meeting the PMTCT programme goals
9. The counseling supervisors during quality assurance session will use quality assurance tools that will include checklists, formal and informal observation of day to day activities, counseling sessions, staff-client interactions, peer support meetings and feedback from both peers and clients.
10. For monitoring purposes, the counseling supervisor will use day to day record keeping, built in checks and reporting of daily activities to ensure that each staff member is performing his/her job correctly.
 - Monitoring systems include things like log books, registers, patient management forms etc
11. For the evaluation the counseling supervisor will use a structured and periodic assessment of counselor's personal skills, a quality assurance system in place, for the clinic setting, and programme activity.
12. For evaluation of the PMTCT services, the community should give feedback on programme successes and failures.

2.8 Record keeping and data management

1. The collected information from the quality assurance tools should be summarized by the NMW counselor on a daily basis and compiled in weekly and monthly reports and to be used on-site feedback meetings.
2. Like VCT data collected elsewhere, data collected from women attending all ANC's with PMTCT initiatives will use a standard data collection instrument.
 - Data collection will use data collection instruments recommended by the Ministry of Health (NACP-Monitoring and Evaluation).
3. The data collection form to be used at the ANC's will not include names but coded numbers to ensure the client of confidentiality. In addition, the client will be informed that no names will be recorded on the data collection form.
4. The data linking names of the clients and codes of clients will only appear on the record book to be kept in a locked cabinet in the counseling room. Only staff trained in confidentiality procedures will have access to this storage space.
5. The data collection form will be filled in duplicated before the client leaves the counseling room.
 - The NMW counselor will ensure all the areas of the data collection form are completely filled (Important to note: Client may refuse to answer all the questions)
 - The NMW counselor will check all the forms at the end of the day to see if they are many sections remaining unfilled.
 - Difficulties in filling the forms should be communicated to the local counseling supervisor for guidance
 - The original data forms will be sent to the district PMTCT data focal point person in a timely manner by the counseling supervisor at site level. The duplicate copy will remain at the ANC site for record keeping
 - a. A consistent system of forwarding PMTCT data records will be used to ensure records reach the district PMTCT data focal point person.
 - b. A tracking system will be used to show where PMTCT data records are at any point in time.
 - c. As in the ANC sites PMTCT data records will be stored in secure rooms with lockable storage space

6. For the ANC sites, the standardized assigning of codes will be done at district level by the district PMTCT data focal point person while that of the district level will be done by the regional PMTCT data focal point person.
7. Data from the ANC sites will be collated at district level while that from districts will be collated by the regional PMTCT data focal point person for processing and forwarding to the national PMTCT data focal point person preferably electronically.
8. Once data is compiled on computer, all data will be backed-up on diskettes at all levels-site, district, region and national levels
9. District PMTCT data focal point person will produce monthly summaries in quadruplet and will send these to the national, regional and district and site PMTCT coordinators.

CHAPTER 3: OBSTETRIC CARE IN HIV SERO-POSITIVE PREGNANT WOMEN

3.1 Introduction

HIV infection in pregnancy has become the most common medical complication of pregnancy in developing countries. This has major implications for the management of pregnancy, birth and infant feeding. The objective is to prepare health service providers giving obstetric care in the country to understand the importance of giving modified obstetric care to HIV infected pregnant women. In order to achieve this it is necessary to impart knowledge and skills on modified obstetric care to HIV infected pregnant women to all health service providers working in maternity services. The guidelines aim at providing additional knowledge and a change in practice to health service providers caring for HIV seropositive mothers throughout pregnancy, labour and delivery, and during the period of breastfeeding. The guidelines focus on practical issues likely to be handled on the day to day obstetric care.

Maternity services in this high prevalent area have several responsibilities: First to provide VCT to all pregnant women and to use these results to maintain their health in an optimal manner. Secondly, to utilize appropriate interventions to reduce the rate of Mother to Child Transmission (MTCT) of HIV and thirdly to train staff and provide them with equipment to prevent nosocomial transmission of HIV and other pathogens.

There are two types of HIV: type 1 (HIV-1) is the most common and type 2 (HIV-2) is found predominantly in West Africa with some pockets in Angola, Mozambique and recently in Tanzania. The clinical course of HIV-2 is slower than that HIV-1. Dual infection with HIV-1 and HIV-2 is possible. Although mother to child transmission of HIV-2 has been documented, this occurs less frequently than HIV-1. In view of this lesser prevalence of HIV-2 in pregnancy this document is focused on HIV-1 infection.

3.2 HIV infection in pregnancy.

Epidemiology of HIV

HIV is transmitted in mainly in three ways:

- Through unprotected sexual intercourse
- Through blood or blood products, donated semen or organs.
- From an infected mother to her child (MTCT).

More than 80% of the infections are a result of heterosexual transmission and over 90% of infections in children result from mother to child (MTCT). In developing countries heterosexual transmission is the predominant mode of transmission. East, Central and Southern Africa is the most affected region with the fastest growing epidemic with prevalence of 10 – 40 % among pregnant mothers; AIDS will increase infant mortality by 25% in the most prevalent areas.

Susceptibility of women to HIV infection

In Sub-Saharan Africa 60% of the Adults living with HIV are females (UNAIDS 2002). Women in the developing countries are at higher risk of HIV infection than their male partners for biological and social cultural factors.

- **Biological factors:**
 - HIV subtype e.g. E or C. They have special affinity to the Langerhan's cells of the cervix.
 - Vulva, vaginal inflammation or ulceration facilitate entry of the virus
 - Sexually transmitted diseases (STD) untreated, may facilitate transmission as a co-factor

- **Social cultural factors**

Some social cultural factors in communities may favour HIV infection to women.

- They carry the burden of caring of infected members of the family without adequate protection.
- Gender inequalities, poverty, less education, and lack of employment opportunities, force women to engage in commercial sex activities in order to survive economically.

- Sexual behaviors of male partners put many women at an increased risk of infection.
- Traditional practice and customs such as “dry sex” practices, vaginal douching with non antiseptic compounds, female circumcision and widow cleansing may all have an effect on increasing women’s risk of HIV infection.
- The desire and the social pressure to reproduce make it difficult for women to practice protected sex.

Effect of Pregnancy on the natural history of HIV infection

In pregnancy, immune function is suppressed in both HIV-infected and uninfected women. There is a decrease in immunoglobulins, reduced complement levels in early pregnancy, and a more significant decrease in cell-mediated immunity during pregnancy. Prospective follow up studies have shown that pregnancy appears to have little effect on disease progression in asymptomatic HIV-positive women. However, African women with late stage disease demonstrate more complications during pregnancy and delivery.

Effect of HIV on Pregnancy

Adverse pregnancy outcomes have been reported in a number of studies in Africa. Complications of pregnancy include:

- Increased incidence of spontaneous abortions.
- Increased incidence of pre-term deliveries.
- Low birth weigh (LBW) is more observed in symptomatic than asymptomatic patients
- Increased rate of still birth (SB).
- Bacterial pneumonia, urinary tract infections and other infections are more common during pregnancy in HIV seropositive women.
- Increased incidences of HIV-related opportunistic infections.eg *Herpes zoster*, Kaposi sorcoma etc.
- Infection complications are also common during the postnatal period in HIV positive women.

3.3 Mother to Child Transmission

Passing the HIV virus from an infected in mother to her infant is known as mother to child transmission (MTCT) or vertical transmission.

Mother to child transmission (MTCT) of HIV is the major source of HIV infection (90%) in children under 15 years of age. Without preventive measures up to 40% of children born to HIV seropositive women will be infected in this way. Transmission to the child can take place:

- During pregnancy *in-utero* (less common)
- During labour and delivery intrapartum (most common)
- During postnatal – through breast feeding (common)

In developing countries, where most women breastfeed about 1/3 of the transmission is thought to be through breast milk transmission. Most of the transmission in pregnancy occurs during and at the time of labour and delivery (65%) while transmission in early pregnancy is less common.

3.4 Factors influencing Mother to Child Transmission of HIV.

Viral factors

- Viral Load - Transmission is increased in the presence of high levels of maternal viremia. The local viral load in cervico-vaginal secretions and breast milk is also an important determinant of transmission risk in intra partum and through breast-feeding.
- Viral genotype and pheno type. Different viral phenotype show different tissue tropism.
- Macrophage – tropic non-sycitium inducing (NSI) viral isolates appear to be preferentially transmitted to children even when the dominant maternal strains are syncitium inducing (SI). Rapid/high viral isolates have been associated with transmitting mothers where slow/low virus isolates are associated with non-transmitting mothers. Increased viral diversity in the mother and repeated exposure to different viral strains through pregnancy is responsible for increase in transmission. Virus subtypes are more associated with MTCT.
- Viral resistance.

Maternal Factors

Immunological status;

Transmission from mother to child is more likely with decreased maternal immune status reflected by low CD4 counts; high CD8 percentage or low CD4/CD8 ratio.

- **Nutrition**

Deficiency in micronutrients in HIV infected pregnant women has been associated with increased transmission of HIV from mother to child.

- **Clinical status**

Symptomatic and late disease stage is associated with increased rate of transmission of the virus from mother to child.

- **Behavioral factors**

Several behavioral factors have been associated with an increased risk of transmission from mother to child. These include cigarette smoking, maternal hard drug use and unprotected sexual intercourse during pregnancy and lactation.

- **Antiretroviral treatment**

Antiretroviral treatment will lead to reduction of viral load and thus reduce transmission from mother to infant.

Obstetrical factors

With majority of mother to child transmission occurring at the time of labour and delivery obstetric factors are important determinants of transmission. The suggested mechanism for intrapartum transmission of HIV include infants skin and mucous membrane direct contact with maternal cervico-vaginal secretions during labour, ingestion of virus from these secretions and ascending infection to the amniotic fluid. Several obstetric factors have been implicated and these include:

- **Prolonged rupture of membranes (more than 4 hours).**

Duration of rupture of membranes for more than 4 hours before delivery is associated with increased risk of transmission of HIV infection from mother to child (strong association)

- **Mode of delivery**

Delivery by caesarian section has been shown to be protective compared to vaginal delivery (strong association)

- **Haemorrhage**

Intrapartum haemorrhage and invasive intrapartum fetal monitoring is strongly associated with high transmission of infection

- **Episiotomies**

Episiotomies or perineal tears, and instrument deliveries have relatively been associated with transmission of HIV infection from mother to child.

Fetal Factors

- **Genetic factors:**

These may play a part in transmission. Concordance between infant and maternal HLA has been associated with increased risk of transmission.

- **Prematurity:**

Because of fragility of the skin of the infant exposed to vaginal viral particles, this increases risk of transmission from mother to child

- **Multiple gestation.** The first twin is at more risk of HIV acquisition than the second twin.

Infant factors

Breast-feeding is largely responsible for a high proportion of mother to child transmission of HIV infection. Other infant factors associated with increased transmission are gastrointestinal ulceration or inflammation of the mucous membrane and the immature immune system of the new born which increase the infant susceptibility to infection. Post exposure prophylaxis with antiretroviral drugs e.g. AZT or Nevirapine are associated with reduction of transmission of infection from mother to child.

3.5 Modification of obstetric care to HIV seropositive pregnant women

Rapid progress has been made in understanding mechanisms of transmission of HIV infection from mother to child. Intervention strategies have demonstrated some success in preventing transmission of mother to child. Among these intervention is modified obstetric care to HIV seropositive pregnant women.

Antenatal Care

With increased access to voluntary HIV counseling and testing, HIV infection will be recognised as a common complication of pregnancy. This section describes both the antenatal, obstetrical care and medical care for HIV sero positive pregnant women. Many HIV positive women will be diagnosed for the first time during pregnancy. They will therefore need emotional support and medical care at this difficult time. Although much of the focus of intervention in pregnancy will be to reduce mother to child transmission, an on-going care and support of mother and child is very important.

- **Initial Examination**

HIV positive women identified in pregnancy must undergo a full physical examination. In particular this should focus on HIV related symptoms and illnesses and signs of opportunistic infection. Special attention should be paid to:

- Persistent diarrhoea
- Dermatological infection
- Respiratory infections especially PTB.
- Urinary tract infection
- Oral and vaginal candidiasis
- Lymphadenopathy
- Herpes zoster (recurrent or recent).
- Other STDs
- Severe weight loss

- **Investigations:**

All pregnant women should be screened for syphilis and have haemoglobin estimation. More investigations can be done if the woman is HIV seropositive provided laboratory facilities are available. These should include:-

- Full blood picture
- T-cell subject for CD4 and CD8 and CD4/CD8 ratio where facilities are available.

- **Obstetric evaluation and care**

The obstetric care for the antenatal HIV positive women is essentially the same as that for uninfected patients

- Additional visits will not be required for obstetric reasons although may need to attend for further counseling sessions.
- Avoid any invasive procedures likely to increase risk of transmission.. Such procedures as chorionic villus sampling, amniocentesis or cardocentesis.
- Avoid external cephalic version. This may carry a risk of transmission of infection from mother to child.

- **Nutritional support**

All women need advice on a healthy diet but HIV positive pregnant women will need more nutritional advise and support during the antenatal period. Weight should be monitored during the antenatal visits and nutritional supplements initiated if required. Micronutrients should be supplied during this time as their deficiencies have been associated with increased transmission

- **Life style and behavioral change**

HIV positive pregnant women should be counseled about behaviours which could damage their own health or immune system or which could be associated with an increased risk of transmission to the child.

- Smoking, alcohol and harddrug use should be discouraged.
- Unprotected sex during pregnancy and breastfeeding (use of condoms should be encouraged)
- Women should be counseled on how to deal with stress and on leading a healthy lifestyle.

Medical treatment

- **Prophylactic treatment.**

HIV positive women should receive prophylactic treatment throughout their pregnancies. This will include iron and folate, multivitamin supplementation, mebendazole (in areas of high hookworm prevalence), Sulfadoxine pyrimethamine for malaria prophylaxis in endemic areas and tetanus toxoid immunisation.

- **Treatment of other infections.**

HIV positive pregnant women are more likely to have other infections, which will require prompt treatment. These include:

- All STDs
- Urinary tract and respiratory infections.
- Vaginal candidiasis
- Isoniazid (INH) prophylaxis for Tuberculosis should be administered where active TB has been excluded. But where active TB infection is diagnosed then full treatment can be given during pregnancy but avoid streptomycin and pyrazinamide.

3.6 Antiretroviral regimen for PMTCT

Currently two treatment regimen are used for PMTCT purpose in Tanzania.

- **Nevirapine (For more information see appendix 3.1)**

This will be the drug of choice in many health facilities in Tanzania. Much of this drug is under the control of the mother. Since many women will know their serostatus for the first time during ANC and since many are stigmatised by the hospital procedures, then supply all HIV positive pregnant

women who are >28 weeks of gestation with a Niverapine tablet (if they accept) and counsel them on how to take it when labour starts emphasising the importance of the infant dose as well

Dosage of Niverapine:

Niverapine regime consist of one niverapine tablet (200mg) for the mother which will only be taken at the onset of labour and one dose of Niverapine syrup (2mg/kg body weight) for the baby which should be given within 72 hours after delivery

- If the woman or her baby vomits the drug within 30 minutes after taking the dose, should make sure that another dose is given. If vomiting occur after 30 minutes have passed, no additional dose is required.
- If the mother delivers within an hour after taking the Nevirapine Delay the infant dose for 12hours
- If the woman has taken the NVP tablet, come to the labor suite, but has false labor and does not deliver within 48 hours, she must receive a second NVP tablet from the labor ward staff to take home with her which will be used when she starts labor again.
- Counselling and adhering to taking NVP is much more important than delivering in hospital.

NB: The baby can still receive NVP dose up to 7 day after delivery. This may happen in rural communities with difficulties in accessibility. Unless the woman is in failure or has liver problems the level of Hb should not be a limiting factor since the dose of NVP is small.

- **Short course AZT.**

If you happen to be using this regimen in you institutions then do the following:

Supply AZT tablets (enough for two weeks) at a dose of 300 mg. BID. Counsel her to start taking the tablet starting from 36 weeks of gestation until labor starts. Then advise her to report immediately to Hospital or health centre where she will undersupervision of midwife continue with a dose of 300 mg every 3 hours from the beginning of labor to delivery. When she is planned for elective c-section she should start AZT 300mg 3 hourly 12 hours before the operation. There is no postpartum treatment for the mother or the neonate.

Pregnant women using AZT should have haemoglobin not less than 8 g/dl. If they are diagnosed anaemic, this should be rectified before initiating treatment. Advise her to report any side effects experienced while on medication

- **Triple antiretroviral Drugs (HAART) in Pregnancy .**

This is a more effective regimen and is the standard of care for HIV positive pregnant women in the developed world. As the price of these drugs go down more women from developing countries will access them HAART in pregnancy is able to reduce MTCT up to 1% in non breastfeeding populations

The recommended first line combination regimen in Tanzania

It includes Zidovudine lamivudine and Niverapine.

Zidovudine (ZDV) 300mg twice daily (NRTI)

Lamivudine (3TC) 150mg twice daily (NRTI)

Nevirapine 200mg twice daily (NNRTI)

(for more information see appendix 3.2)

3.7 Labour and delivery care of HIV positive women.

Most of the mother to child transmission of HIV infection occurs during labor and delivery (more than 60%). Many routine obstetrical practices at this stage favours vertical transmission. Modification of obstetric care at this stage is of paramount importance in view of preventing mother to child transmission.

- **Modification of routine labour and delivery care.**

- HIV seropositive pregnant women in labor, delay rupture of membranes until the cervix is 6-7 cm dilated. But this is not absolutely restricted if there is a strong obstetric indications such as foetal distress or abnormal progress.

- Do vaginal cleansing with 0.25% chlorhexidine solution. This will apply to all women in labour both HIV seropositive and negative. This does not prevent mother to child transmission but is associated with prevention of puerperal sepsis.
 - Any traumatic delivery envisaged should be avoided as much as possible (e.g. instrumental delivery) in a known HIV positive woman.
 - Labour management should follow normal obstetric guidelines and HIV positive women **do not need to be isolated**, but staff must use universal precautions.
 - Emotional support during labour is important particularly for HIV seropositive women who are concerned about their condition and risk of transmission of the infection to their children. Whenever possible HIV seropositive women should have the companions of their own choice who know about their HIV sero status and who can give support.
- **Antiretroviral (ARV) drug treatment in labour**
 - Niverapine 200mg (one tablet) should be swallowed at the onset of labour or at least one hour before delivery in case of delay.
 - For the patient on AZT Treatment dose of 300 mg 3 hourly should be given from when labour commences to delivery. This is part of the AZT treatment protocol.
 - The labour ward should have a buffer stock of NVP/AZT in case a patient has consumed all her drugs or she has forgotten them at home.
 - Nevirapine should be given to the neonate single dose of 2mg/kg. Body weight within 72 hours after delivery

- **Delivery Care**

Delivery should be conducted following standard practice avoiding unnecessary trauma or prolonged second stage of labour. However procedures which are likely to increase the risk of vertical transmission must be modified. These include:

- Episiotomy should only be done for serious obstetrical indications and not as a routine procedure.
- Assisted vaginal delivery should involve as little trauma as possible.
- Routine, suction of the babies should be avoided. Suction of the baby is done only if there is meconium or respiratory distress.

- Babies should be wiped clean or washed with a warm chlorhexidine 0.25% solution to remove maternal blood and secretions.
- The new bornes should receive an eye antibiotic ointment or silver nitrate 1% as prophylaxis against ophthalmia neonatorum.
- It is necessary to keep the new born warm and establish the maternal infant bond.
- The mother's choice of infant feeding must be respected and supported.

3.8 Post natal care of the HIV seropositive mothers and infants

The post natal period will be a continuation of an on going care and support. It is also an entry point to follow up and care for the newborn. In addition to medical and reproductive health care women will need emotional support in helping the families to cope with the HIV sero status and the challenge of risk of transmitting the infection to the infant.

- **Infant care**

In addition to routine underfives clinic follow up schedule, infant borne to HIV positive women should be seen at 1,3,6,12,15 and 18 months.

At every visit the baby should be examined thoroughly for any infection and treatment given. All infant borne to HIV positive women should be given cotrimoxazole prophylaxis starting at 6 weeks till when they are proved HIV negative at 15-18 months. Remember that babies should be tested for HIV at 15 and 18 months when the mothers antibodies have disappeared from the babies circulation and when the mother has stopped the breastfeeding.

- **Maternal care.**

In most cases the post natal period will be uncomplicated and HIV positive women will not require special medical care. They may need further counselling and support and will need information before discharge about possible complications and how they should go about it. The decision on infant feeding is best made before delivery but HIV positive women will need support and education on infant feeding options and contraceptive advice is also essential. Mothers should be seen at 1,4, and 6 weeks postpartum. HIV infected women are more prone to post natal infection complications including:

- Urinary tract infection
- Chest infections
- Infected episiotomy
- Puerperal sepsis
- Caesarian section wound sepsis.

Therefore health workers should be aware of signs of infection. They should look for:

- Fever or raised temperature
- Increased pulse rate
- Tender lower abdomen and pain at the episiotomy site
- Foul smelling lochia
- Wound pus discharge

Before discharge mothers should be counselled on how to look for these signs and seek for early medical treatment. Women should also be given instructions on perineal care and safe handling of lochia/ blood stained sanitary pads or materials.

- **Contraception and reproductive health care.**

Women should be counselled on and where to access contraception services. Suitable contraceptive methods are:

- **Combined oral contraceptive pills (COC).** These will confer very good contraceptive protection but no protection against STDS/HIV. It is important to note that COCs effectiveness may be affected by antibiotics use, e.g TB drugs and antiretroviral medication.
- **Progestagen Injectable/Implants contraceptives:** These will confer effective contraception but no protection against STD/HIV infection.
- **Barrier methods** (diaphragm female and male condoms) these will provide protection against STD/HIV from her partner and re-infection with different strains. Condom has contraceptive role as well. Therefore adequate information must be availed to the mother so that they can use condom at every sexual intercourse.
- **Emergency contraception:** HIV positive women should be informed about emergency contraception and should know where to obtain it. This is especially important where barrier

methods are being used as primary contraceptive method and women should be told about the possibility of using emergency contraception if the condom breaks or slips.

- **Intra-uterine contraceptive devices (IUCD).** This confers contraceptive effect but not protective against STD/HIV infection.
- **Sterilization.** It is a suitable contraceptive method for women who do not wish to have more children. But the advantages and disadvantages of this method must be clearly explained to the woman/couple. Counselling must be non directive and the decision should be that of the woman or a couple.
- **Other important health care services for a seropositive mother.**
 - Pap smear - HIV seropositive women should have a cervical smear if possible at the post natal clinic at 42 days post delivery. These women are at risk of developing cervical dysplasia and carcinoma. They should be advised to have a cervical smear annually. For those with CD4 counts below $200/\text{mm}^3$, six monthly smear should be advised where resources allow.
 - HIV sero positive women in the post natal period should be given information on maintaining their own health and to seek treatment if needed. The following should be considered:
 - Nutritional advice for healthy diet
 - Advice on stopping smoking, alcohol and drug abuse.
 - Information about gynaecological infections such as vaginal discharge and pelvic inflammatory diseases and the need to seek early treatment.
 - Referral to a specialized HIV/AIDS support services where these are available.
 - Regular medical check ups.
 - Advice on home based care and primary care management of diarrhoea, dermatitis and other common illnesses.
 - Advise on the need for prophylactic treatment of pneumocystic carinii pneumonia and TB.

- **Additional counselling and support**

HIV sero positive mothers will have uncertainties about their own HIV infection and the possibility of transmitting the virus to their children. They will require access to on going counselling and support when needed, although many will not want to come back for regular counselling sessions. It is

important to build link with community based support organizations and to provide support group for HIV positive women. Peer counselors and supporters can be a very powerful positive influence and provide help in coping with the infection and stress. Post natal counseling should include:

- Reinforcement of infant feeding choice
- Information about the possibility of infection to the child and information on how and where the child can be checked and treated.
- Discussion about disclosure of her HIV status to partner, family and friends.
- Discussion on how the mother will cope with possible stigmatization if not breastfeeding.
- Advice on suppression of lactation if not breastfeeding

- **Post Abortion Care**

HIV positive women are more likely to have spontaneous abortion or may be more likely to seek termination of pregnancy for many social reasons. In most cases the HIV status of the woman will not be known. Health workers should be aware of the possibility of HIV and look for signs and symptoms related to HIV. Where the woman is known to be HIV positive consider the use of antibiotics after uterine evacuation and ensure that there is referral for post abortion contraceptive counselling as well HIV counselling.

- **HIV sero negative women**

HIV counselling and testing in pregnancy provides an important opportunity to identify HIV negative women and counsel them about reducing their risk of infection. As the voluntary counselling and testing become more accessible, this could be a very important prevention intervention. HIV sero negative women should be given information about HIV and their risk of infection, safer sex practices (avoiding multiple partners and use of condoms), other STDs and the importance of “remaining negative”. General health information such as reduction of smoking, alcohol or drug abuse and the importance of adequate nutrition is as relevant to HIV sero negative women as to those who are HIV sero positive and should be given to all pregnant women.

3.9 Special issues

- **Elective Caesarian Section**

Caesarian section has shown in several studies to reduce the risk of transmission of HIV. In a large meta analysis of over 8500 mother infant pairs elective Caesarian section reduced the risk of transmission by over 50% compared to vaginal delivery. In women on ARV treatment and elective C-section in this analysis transmission was reduced from 7.3% to 2%. This was a non-breast feeding population. This potential benefit may not be available in many settings in developing countries including Tanzania. This has to be balanced against the risk of operation to the mother. Higher rates of postoperative morbidity have been reported in HIV positive women especially infective complications. Unfortunately elective C-section may not be available in all parts of Tanzania where resources are scarce and many women will opt for breast-feeding anyway. However there could be some cases in which caesarian section could be offered. This include pregnancies where labour is expected to be prolonged or in antepartum haemorrhage or premature rapture of membranes or where on understanding the preventive opportunity of this procedures is demonstrated individual mothers.

- **Induction of Labour**

Most induction of labour involves artificial rupture of membranes and administration of oxytocic agent or prostaglandin. As prolonged rupture of membrane is associated with increased risk of transmission, this may be dangerous for HIV positive women. Careful assessment of the need for induction and the desirability of induction rather than C-section is necessary

- **Breech delivery**

Breech delivery may require traumatic procedures than cephalic delivery, including episiotomy and assisted delivery. Where C-section is available, plan an elective C-section for breech presentation.

- **Trained TBA**

Many women still deliver outside the health institutions under the assistance of TBA both trained and untrained. There is therefore a need to educate the community and the TBAs about MTCT and the available strategies to prevent the transmission. The TBAs have an important role in HIV

education in the community, identifying the HIV positive women and refer them to health units. They also need to know their own risk of infection. Train TBAs on universal safety precautions.

- **HIV Testing in Labour**

This is a new concept and it is optional. Knowledge of a woman's HIV status at the time of labour may help to reduce the risk of transmission at this time, allow for administration of intra partum and postpartum anti retroviral therapy and also will enable her to modify infant feeding practice. There has been some calls recently to provide HIV testing for women whose HIV status is unknown even when they present for the first time in labour.

It is, however, very difficult to counsel and obtain informed consent for testing from a woman already in labour or to give a potentially life threatening diagnosis. Access to simple and rapid tests will make the testing technically feasible in this short time frame, but counselling remains very problematic. The decision on whether to implement testing in labour will need to be made according to the circumstances of the maternity unit and the views of women in the community.

Testing after delivery will not allow for any modification of labour and delivery care, but may influence the choice of infant feeding options or enable anti retroviral treatment to the child. In this setting there would be more time to counsel the mother and obtain informed consent for the test.

3.10 Universal Safety Precautions

All staff in maternity services should know how to deal with the exposure to blood and any other body fluid, which is common in obstetric practice. Universal precautions should be used at all times and appropriate equipment should be supplied. Important precautions include:

- Reduction of needle stick injuries by handling used needles as little as possible. Use of needle holder during procedure or place the needle and other sharps in appropriate containers.
- Wash hands with soap and water immediately after contact with blood or body fluids
- Wearing of suitable clean gloves when expecting exposure to blood or body fluids
- Wearing double gloves if possible for all operations which reduces considerably the amount of blood carried through the glove if it is punctured.

- Cover broken skin or open wound with water tight dressings
- Wear an impermeable plastic apron for delivery
- Wearing of suitable sterile gloves (e.g. long cuffed gloves when doing manual removal of placenta)
- Wearing of eye shield during operations e.g. C-section
- Proper disposal of used needles and sharps
- Safe disposal of solid waste e.g. blood soaked dressings or placenta
- Cutting the cord under the cover of lightly wrapped gauze swab
- Whenever possible avoid suction of the newborn. But if suction is necessary, when using suction machine the pressure should be less than 140 mmHg to avoid damage to the neonate mucous membrane.

For post exposure prophylaxis refer to the protocols set as per the health facility/institution

CHAPTER 4: HIV/AIDS AND INFANT FEEDING

Transmission of HIV may occur during pregnancy, delivery or postnatal through breastfeeding. Two to three out of ten babies will get the infection from their mothers in this way. It is also possible for babies who are born without HIV to get the infection from their mothers through breastfeeding. About one to two out of ten will get the infection this way. About 6 out of 10 babies born to infected mothers will never get the infection from their mothers even if they are breastfed.

At birth is not possible to test the HIV status of baby as a child of an infected mother may have maternal antibodies to HIV. It is only possible to know the HIV status of the baby after 15 months.

The infant feeding guidelines are therefore necessary for health workers and other care providers who are giving infant feeding counseling to HIV positive pregnant women and other family members of affected groups. The guidelines are intended to provide supportive material on infant feeding counseling on HIV/AIDS and complements the National Guidelines on HIV/AIDS.

The guidelines assume that counseling techniques on infant feeding are used and thus are intended to serve as an information base and a guide for covering the issues appropriately to ensure that all health workers and other care providers are adequately equipped to pass on accurate information to clients.

Infant feeding counselling should be supported by the use of specially designed information, education and communication (IEC) materials.

4.1 Facts on mother to child transmission of HIV (MTCT)

Thirty percent of the transmission of HIV infection from mother to child occurs during pregnancy, labour and breastfeeding.

MTCT

- A baby can get HIV from his / her mother before delivery and during delivery. 2-3/10 babies will get the infection from their mother in this way.
- It is also possible for babies who are born without HIV to get the infection from their mothers through breastfeeding. About 1-2 /10 will get the infection this way.

- Some babies will not get HIV at all from their mothers. About 6/10 babies will never get the infection from their mothers even if they are breastfed.
- We cannot test the HIV status of the baby until he / she reaches 15 months of age so we cannot tell if the baby is born with or without HIV.
- We do know that breastfeeding can transmit the infection at any point during breastfeeding – it could be soon after birth or any time when the baby is breastfeeding.

Factors, which increase the chances of transmitting the infection to the baby

- We do not know very much about what makes a particular mother transmit the virus to her baby.
- We do know that if the mother is sick with clinical AIDS while she is breastfeeding she is more likely to pass on the infection to her child through breastfeeding.
- If the mother has cracked nipples or mastitis she may also be more likely to pass on the infection to her baby.
- We also know that if the pregnant or lactating woman is re-infected through sexual contact with an HIV positive partner then she is more likely to transmit the infection to the baby than HIV positive women who are not re-infected during pregnancy or lactation.
- We also think that mixing breastfeeding with other foods and drinks can increase the chances of passing on the infection through breast milk.

4.2 The Importance of Breastfeeding

Breastfeeding is the act of feeding an infant with breast milk either by direct suckling from the breast or by giving expressed breast milk by a cup, spoon or special feeding tubes.

Breastfeeding is the best way to feed an infant in the vast majority of circumstances. The World Health Organization (WHO) has estimated that 1.5 million infants die each year because they are not breastfed. Breastfeeding saves lives.

It also helps to improve the mother's health, ensure availability of food in the household, community and the nation at large.

Recognizing this, WHO/UNICEF in 1991, launched the baby friendly hospital initiative (BFHI). For health facilities to attain BFHI status the ten steps to successful breastfeeding should be implemented (Annex 4.1).

Baby friendly practices improve conditions for all mothers and babies, including those who are not breastfeeding; efforts to introduce the BFHI should be strengthened in areas where HIV is prevalent.

The benefits of breastfeeding for infant, mother and community include:-

- Breast milk is the best food for the infant. It provides all the necessary nutrients and enough water for the first 6 months. Additional foods are required after 6 months.
- Breast milk is essential for development of the brain; and there is evidence of higher intelligence score in children who have been breastfed.
- Colostrum, which is produced in the first days, is higher in Vitamin A, which is essential for eyes, skin, and the immune system of the infant.
- It is easily digested
- It protects the baby from infections such as diarrhoea, chest infections, skin infections and otitis media.
- It may also reduce the risk of meningitis, urinary tract infections, eczema, diabetes, chronic intestinal infections and sudden infant death syndrome.
- Breast milk is always ready and clean.
- Breastfeeding immediately after delivery, contracts the mother's uterus and reduces the risk of bleeding.
- Exclusive breastfeeding and breastfeeding on demand delays return of menses, and plays important role in child spacing where mother lacks access to other forms of family planning
- It protects the woman by reducing the risk of cancer of ovary breast.
- It promotes bonding between the mother and the baby
- Saves money and time

Promoting, protecting and supporting breastfeeding among mothers who are HIV negative and those who do not know their status.

Breastfeeding needs to be protected, promoted and supported among mothers who are HIV-negative and those who don't know their status. For women who think they are at risk of HIV or who suspect that they

might be infected, they should be offered counseling for voluntary testing so that they can make an informed choice.

The information given to HIV-negative mothers and those who don't know their status should include the following:

- The advantages of breastfeeding;
- The importance of exclusive breastfeeding for 6 months and there after complemented breastfeeding to two years and beyond;
- The importance of rooming-in;
- The disadvantages of artificial feeding, bottle feeding and use of pacifiers;
- How to ensure enough milk, correct attachment and positioning;
- Management of breastfeeding problems; and prevention of HIV and safer sex.

4.3 Infant Feeding Options for HIV Positive Women

Breastfeeding is normally the best way to feed an infant. However, if a mother is infected with HIV it may be preferable to replace breast milk to reduce a risk of HIV transmission to her infant.

If a mother is HIV positive and chooses not to breastfeed her child, the risk of illness and death from replacement feeding should be less than the risk of HIV transmission through breastfeeding. Other wise there is no advantage of replacement feeding.

Current infant feeding options include:-

- Breastfeeding:-
 - Exclusive breastfeeding
 - Early cessation of breastfeeding
 - Expressed and Heat Treated breast milk
- Breast milk Substitutes
 - Commercial infant formula
 - Home prepared formula from cow's or goats milk
 - Home prepared formula from dried milk powder or evaporated milk

Breastfeeding

Exclusive Breastfeeding from Birth to Six Months

- This option rely on the mother exclusively breastfeeding for the first 6 months. This means that the baby consumes nothing else, not even water.
- Mothers who have chosen this options need to be supported to exclusively breastfeed as it is thought that exclusive breastfeeding is less likely than partial breastfeeding to transmit HIV to the baby.
- Staff need to help mothers to identify foods and drinks which are normally given to the baby reaching 6 months of age and the reasons for giving these foods so that solutions can be identified to the problem of mixed feeding.
- After delivery breastfeeding mothers must be shown how to position the baby correctly to avoid damage to the nipple and to ensure full latching on.
- The Ten Steps to Successful Breastfeeding should be fully complied with.

Why exclusive breastfeeding

For women who cannot safely substitute breast milk under any circumstances due the absence of capacity to prevent morbidity and mortality from inappropriate feeding alternatives, exclusive breastfeeding is the least risky infant feeding option. It is also a suitable option for women who lack any support to undertake alternative options. In addition, since 60% will never pass on the infection to their babies, women should have the right to continue their normal infant feeding practices.

The mother should:-

- Begin breastfeeding immediately after delivery
- Breastfeed exclusively for 6 months – this means not giving anything else, not even water.
- Introduce gradually hygienically prepared and nutritious soft foods at 6 months and then the family diet
- Continue breastfeeding for two years or more

Access issues

- This option does not cost the family any more money than a baby would normally cost

Advantages and disadvantages

- This option is probably the easiest for mothers though it still requires a commitment to exclusive breastfeeding.
- The baby will be protected from dying from diarrhoea and other diseases that may occur if breast milk is not given to the child.
- Breastfeeding may pass the HIV infection on to the baby.

Early cessation of exclusive breastfeeding

Early cessation means stopping the breastfeeding early. This will reduce the risk of transmission by reducing the length of time that the infant is exposed to HIV through breastfeeding. Therefore: -

- Breastfeed for 3, 4, 5 or 6 months. The actual month for stopping breastfeeding should be determined by the mother according to her circumstances. A definite time for cessation should be decided upon to prevent extended periods of partial feeding.
- Breastfeeding for the first 3-6 months must be exclusive this means not giving anything else, not even water.
- Breastfeeding must then be stopped. It should be stopped abruptly. It is not recommended to send the child away in order to stop breastfeeding. All breastfeeding must stop, even breastfeeding during the night or breastfeeding when the baby is crying
- The breast milk should be replaced by giving the baby cow's milk, infant formula and or other nutritious foods
- Mothers who are stopping breastfeeding early need to be supported to do so at the time at which they have decided stop.

Access issues

- For the first six months this option is free, however, after 6 months more money will be spent on cow's milk or other nutritious foods than if the baby were breastfeeding. The household must be able to afford these nutritious foods.

Advantages and disadvantages

- This option means that the baby is protected from diarrhoea and other disease by breastfeeding when he/she is very young but he /she could get HIV from breastfeeding during the first six months.

- By stopping breastfeeding at 3, 4, 5 or 6 months when the baby is less likely to die from diarrhoea and other diseases, you can also prevent the baby from getting HIV from breastfeeding after 3- 6 months

Expressed Heat Treated Breast milk

Pasteurization of milk is expensive and time consuming. This method can only be practiced by few mothers who accept and can afford. But in Tanzania it more feasible for research purposes.

Replacement Feeding (Breast milk substitutes)

Replacement feeding means the process of feeding of child who is not receiving any breast milk, with a diet that provides all the nutrients the child needs.

From birth to 6 months, milk in some form is essential for an infant. And if not breastfed an infant will need about 150 mls of milk per kg body weight a day. The breast milk substitute should be accessible acceptable affordable and sustainable.

Risk of using alternatives to breast milk

- For good growth and health we know that breastfeeding is the best food for babies and young children but when the mother is HIV positive breast milk could in some cases transmit HIV.
- In a country like Tanzania if all HIV positive women decided not to breastfeed to prevent giving the infection to their babies, 1-2/10 babies would die because either the mother is poor or it is difficult to feed the baby properly with breast milk substitutes. These babies would die from diarrhoea and other diseases.

Therefore the same number of babies would die from diarrhoea and other diseases as would get infected with HIV through breastfeeding.

Modified cow's milk or goat's milk

Home-prepared formula can be made with fresh cow's milk. Preparation of formula with these types of milk involves modification to make it suitable for infants, and care is needed to avoid over dilution. Micronutrient supplements are necessary as animal milks contain insufficient iron and zinc and may lack Vitamin A and folic acid. Cow's milk has more protein and a greater concentration of sodium, calcium

and other salts than breast milk. Modification involves dilution with boiled water to reduce the concentration. Dilution reduces the energy concentration of the milk so sugar must be added.

It should be noted that:-

- Cow's milk must be obtained every day throughout the year – at least 0.5 litre is needed per day per child
- The storage container for the milk, the utensils for boiling the water and the milk and the cup for feeding the baby must always be washed with soap and boiling water.
- Cows milk diluted with water must be boiled immediately before use and allowed to cool
- Sugar must be always added to the milk
- Micronutrient supplements should be given to the child every day

<p>REMEMBER: NEVER BREASTFEED AND GIVE A COW'S MILK RECIPE AT THE SAME TIME</p>
--

Access issues

- The cost for the first 6 months of the baby's life is about 30,000 Tsh in rural areas (5000 Tsh per month) and 57,000 Tsh in Dar es Salaam (9500 Tsh per month)
- Cows milk must be available through the year

Advantages and disadvantages

- This method will prevent the baby from getting HIV from breastfeeding.
- This method puts the baby at maximum risk of getting diarrhoea and other diseases unless it can be prepared exactly as the guidelines indicate.
- By never breastfeeding it is easy to get pregnant again after delivery. Therefore in order to prevent pregnancy contraception should be considered.

Advising a mother on the use of cow's milk

1. Always give advice in a separate area so that other mothers cannot observe the process.
2. Check that the woman has been referred by the HIV counselor.
3. The woman should be advised on the utensils which are required for preparation of the cow's milk:
 - A suitable container for boiling the water and milk, a cup for feeding the baby - the cup should only be used for feeding the baby and should not be used for any other household purposes
 - A utensil of known volume for measuring quantities of milk and water: -

- An ordinary teacup holds about 150ml. The outer cup for a 1-litre thermos flask holds about 300ml. The inner cup for a 1-litre thermos flask holds about 150ml.

4. Storage methods of the milk should be discussed with the mother.
5. Each of these utensils should be brought by the mother to the demonstration session on the appointed day with a quantity of cow's milk and sugar and micronutrient supplements (i.e. multiple supplements available from health facility, or ABIDEC syrup and iron syrup (1ml=20mg elemental iron) (e.g. Fesovit brand)).

Demonstrating the use of cow's milk

1. Check that the mother has brought suitable utensils and that she has micronutrient supplements (either multiple micronutrients or ABIDEC syrup and iron syrup)
2. An infant needs about 150ml of milk per kg body weight per day e.g. an infant weighing 5kg needs about 750ml per day which can be given as five 150 mls feeds. The quantity to be prepared should be determined by the mother (with necessary advice as from health care staff) at each monthly weighing session. Help the mother to make the necessary calculations for feeding her baby (for pregnant women use a birth weight of 3kg for the purposes of demonstration).
3. Water should be boiled first.
4. Before use wash the storage container and feeding cup in boiling water with soap and allow to dry. Do not dry with a cloth.
5. The milk, water and sugar should be mixed in the following proportions and then boiled to make up 150ml of home prepared formula:
 - 100ml cow's milk
 - 50ml boiled water
 - 10g (2 teaspoons) of sugar
6. Watch the mother prepare the formula herself and monitor her actions.
7. Check that she knows how to administer the micronutrient supplements (0.3ml of ABIDEC syrup using pipette and 0.5ml iron syrup using a syringe (to be washed after each use). Or multiple micronutrient supplement – crushed tablet)
8. Check again that the mother is prepared to proceed with cow's milk and is aware of the cost commitment required.

Dried milk powder and evaporated milk

The full cream variety of dried milk powder or evaporated milk powder should be used. Full cream milk powder is fresh cow's milk from which all water has been removed, leaving a dry milk powder. In this process, some vitamins e.g. vitamin C and B complex are lost. Nutrients such as proteins, fats, carbohydrates vitamin A and D and minerals are retained.

This, first needs to make up the milk as directed on the tin and then add extra water and sugars as with above recipe for home-prepared formula. Amounts in milliliters and grams should be translated into locally available household measures. Instructions for washing of hands and cleaning and sterilizing of utensils are the same as for commercial formula feeding.

The following are UNSUITABLE breast milk substitutes:-

- Skimmed milk
- Sweetened condensed milk
- Fruit juices or sugar water
- Dilute cereals or gruel

Commercial infant formula

Commercial infant formula is based on modified cows milk or soya beans and is the closest in nutrient composition to breast milk though it lacks some of the essential fatty acids present in breast milk. Formula is usually a powder to be reconstituted with water. It is usually adequately fortified with micronutrients including iron. Formula milk is available for babies from birth and from 6 months (usually known as follow-up formulas). It is very important that the appropriate formula is used according to the age of the child.

BOX 1: CHECKLIST FOR ENSURING THAT LABELS OF INFANT FORMULA COMPLY WITH THE LAW

1. Full information in Kiswahili and English
2. List of ingredients
3. Directions for storing the unopened contained and special direction after the container has been opened
4. The words IMPORTANT NOTICE or their equivalent directing on how to prepare and use the formula for consumption and shall include:
 - A statement of the superiority of breastfeeding
 - A statement that the product should be used only on the advice of a doctor or health worker
 - Instruction and a warning against the health hazards of inappropriate preparation
 - A statement that infants should be fed only with a cup and or spoon
4. Advisory note that infants over 6 months of age should receive supplementary foods in addition to formula
5. Date of manufacture and expiry to be printed in tamper proof on the container
6. Country of origin
7. The label shall not show any photographs, drawings or other graphic representations other than for illustrating methods of preparation and in no case shall depict a feeding bottle.

Advising a mother on the use of infant formula

1. Always give advice in a separate area so that other mothers cannot observe the process.
2. Check that the woman has a doctor's prescription for using infant formula.
3. The woman should be advised to purchase a tin of the formula, which she wants to use (no brand / company names should be recommended by health care staff).
4. The woman should be advised on the utensils which are required for preparation of the formula:
 - A suitable container for boiling the water
 - A cup for feeding the baby - the cup should only be used for feeding the baby and should not be used for any other household purposes.
 - A measuring utensil for the water, which allows measurement in milliliters.
5. Storage methods of the milk should be discussed with the mother.
6. Each of the utensils should be brought by the mother to the demonstration session on the appointed day.

Demonstrating the use of infant formula

1. Check the tin of the formula which the mother wants to use:
 - Check that the tin complies with Tanzanian law (if not send the tin to the District Health Officer) and advise the mother to purchase another brand (see box 1).
 - Check that the formula is intended for the age of the child to be fed.
2. An infant needs about 150ml of milk per kg body weight per day e.g. an infant weighing 5kg needs about 750ml per day which can be given as five 150 ml feeds. The quantity to be prepared should be determined by the mother (with advice as necessary from health care staff) at each monthly weighing session. Help the mother to make the necessary calculations for feeding her baby (for pregnant women use a birth weight of 3kg for the purposes of demonstration).
3. Read the instructions, follow them and prepare the formula as a demonstration. Follow each step carefully (i.e. boiling water and utensils) so the mother can see how long the preparation will take and what procedures are involved.
4. Watch the mother prepare the formula herself and monitor her actions
5. Check again that the mother is prepared to proceed with formula feeding and is aware of the cost commitment required for infant formula.

It is advised that:-

- The feeds must be prepared before each feed but boiled water can be stored in a thermos flask if available.
- The feed has to be carefully prepared with warm boiled water and with attention to measurements of powder and water
- The thermos and containers for boiling the water and the cup for feeding the baby must be washed in boiling water with soap before every use.

REMEMBER: NEVER BREASTFEED AND FEED TINNED INFANT FORMULA AT THE SAME TIME.

Access issues

- This method costs about 150,000 Tsh (25,000 Tsh per month) for six months
- Infant formula must be always available

Estimation of the commercial infant formula option:

		Dar es Salaam	Mbeya	Singida
Infant formula 40 X 500g tins @ 2500-5000		100,000 – 200,000 (depending on brand)		
Soap		1500		
Fuel (10% of family costs)	Charcoal	8100	4000	4000
	Kerosene	3400		
Thermos		2500		
TOTAL		107,400 – 212,100	108000 – 208,000	108000-208,000

Advantages and disadvantages

- This method will prevent the baby from getting HIV from breastfeeding.
- This method puts the baby at maximum risk of getting diarrhoea and other diseases unless it can be prepared exactly as the guidelines indicate.

- By never breastfeeding it is easy to get pregnant again after delivery. Therefore in order to prevent pregnancy contraception should be considered.

Special advice for women who have clinical AIDS

Women who have clinical AIDS are more likely to transmit the infection to their babies through breastfeeding. Also they may be less able to adequately care for the baby. It is therefore recommended that they should feed their babies with breast milk substitutes.

Instructions for feeding with a cup

Health workers should instruct the mothers to:-

- Hold the infant sitting upright or semi upright on their lap
- Hold the cup of milk to the infant's lips
- Tip the cup so that the milk just reaches the infant's lips. The cup rests lightly on the infant's lower lip and the edges of the cup touch the outer part of the infant's upper lip

The infant becomes alert and opens his or her mouth and eyes. A low birth weight infant will start to take the milk into his or her mouth with the tongue. A full term or older infant sucks the milk, spilling some of it.

- NOT POUR the milk into the infant's mouth. Just hold the cup to the infant's lips and let him or her take it.

When the infant has had enough, he or she will close his or her mouth and will not take any more. If the infant has not taken the calculated amount, he or she may take more next time, or the mother needs to feed more often.

- Measure the infant's intake over 24 hours, not just at each feed.

(Refer IEC materials on cup feeding)

<p>Women should be advised against bottle-feeding. If a woman wishes to bottle-feed she should be shown how to prepare the bottle hygienically using boiling water and soap giving particular attention to the teat where bacteria can collect.</p>

4.4 Complementary Feeding

Complementation is a process of providing foods other than breast milk or other milk from 6 months while continuing breastfeeding or giving other milks up to two years and beyond.

It should be remembered that breast milk or other milk is an important food for a baby, for the first 6 months. However, after six months it is important to give additional foods to the child as the needs increase due to the fast growth of the bay.

All babies need hygienically prepared nutritious energy dense complementary foods from the age of 6 months particularly if they are not breastfeeding. Recommendations to mothers should be based on locally available foods and could also use IMCI recommendations. Where appropriate, demonstrations should be given to the mother.

If another type of milk is available it can be given to the baby together with other complementary foods prepared from the family foods. At this time there is no need to dilute cows milk. Dried skimmed milk, yogurt and other milks can be used to enrich the food. Baby food can also be nutritionally enriched by using germinated cereal flour or by adding oil/and sugar to porridge. Fermented porridge (togwa) is also a good complementary food.

How to introduce complementary foods:

The mother should observe the following:-

- Breastfeed exclusively up to six month of age
- After six months start complementary foods slowly, one food at a time and increases the amount and frequency gradually up to 3-5 times a day
- Only freshly prepared meals should be given
- Foods should be given after milk feeds
- Use locally available foods rich in protein, energy and micronutrients
- Use clean utensils and keep them at a clean place
- If the infant is ill, give small frequent energy dense, easily digestible meals

What foods to give:-

- The complementary foods should be foods easily available from where the child lives
- Foods from legumes, meat and meat products fruits and vegetables and starch should be introduced slowly according to the age of the child
- Avoid using multiple mixtures in one meals as different types of foods have different cooking times

Frequency of feeding

- It is important to instruct the mothers to feed a child more frequently (3-5 times a day) because;
 - Infants have small stomach so they can not take large quantities at one time
 - The nutritional needs of children are high so they need to eat more frequently so that they can fight the infections

Hazards of early and late complementation

- Early complementation can cause problems to the bay as his stomach can not digest the foods properly because it is not mature enough for this, which may lead to malnutrition
- The child may reduce the suckling from the breast if he is breastfeeding and thus reduce the immunity obtained from the breast milk
- Late complementation of more than 6 months can cause the following:-
 - A child may get malnutrition as after 6 months the mothers milk alone all others milk are not enough to meet the nutrition requirements of the baby
 - A child may refuse to eat other foods and prefer milk alone which is not adequate at this age

4.5 Making Decision and Identifying Support

The purpose of infant feeding counseling is to give the client enough information so that she can make the right decision about how to feed her baby. The counseling session begins by explaining to her, according to an established format, the risks of mother to child transmission, the factors that make some women more likely to transmit the disease and the risks of not breastfeeding. This section is then

followed by a discussion of the woman's home circumstances that allows the counselor to understand which options may be the most suitable for the mother and support her in her decision-making.

- Each option is described in basic terms and the costs, disadvantages and advantages of each option are given. Then the health care provider should counsel the woman so as to help her carry out her own decision and also to identify and agree on receiving support so that she can carry out her decision.
- Finally the issues of prevention of re-infection and plan for future appointments should be communicated to the woman.
- It may not be possible to cover all the counseling sections in one session. Indeed it may be more appropriate to spread the counseling over two or more sessions. Counseling should at each stage encourage the inclusion of the client's partner or the father of the child.

Helping women to make decision

The health worker should ask the following questions to help to clarify the information given and to prepare the client for making a decision:

- Please explain to me what you have understood so far from our discussion?
- Do you think there are any other options, which haven't been mentioned so far?
- Which option do you think would be best for you? (During the discussion of which option is best for the mother it maybe helpful to refer back to the information gathered in section 4. She may need extra time to think about this or to discuss the decision with others in which case the rest of the counselling session could be conducted at the subsequent appointment.) The decision must be made by the client and NOT by the counselor
 - Once you have made your decision, I am here to help you to carry it out.
 - If you want to change your mind about your infant feeding option at any time we can reconsider the alternatives.

Identifying potential support and opposition

Women, who have chosen any option other than full breastfeeding, need to be reminded that people may notice that they are not feeding their babies as would be expected. For this reason it is helpful for the client to identify people to support her in her decision:-

- Community members such as the clients mother, sister and or partner.
- Health care staff and home based care providers.

- Seek the client's consent to inform the other nurses in the MCH clinic so that they can help the client in her decision. Explain that other staff can be informed by making a small mark on her MCH card (#4) and on her baby's MCH card (#1).
- If there are home based carers working in the vicinity of the client's home she should be asked if she would like someone to visit her at home to give her some support.

4.6 Care of the Mother and Child

Care of the mother

The mother needs nutritional care, prevention of re-infection prevention and treatment of opportunistic infections, family planning and discussion about antiretroviral therapy. (Details to be obtained in the obstetric guidelines chapter three).

Care of children of HIV positive mothers

- Children whose mothers are HIV positive are at higher risk than other children of illness and malnutrition because:-
 - They may be infected with HIV, and become ill even if they receive adequate feeding
 - If they are receiving replacement feeding they lack protection of breast feeding
- They have increased risk of malnutrition during the first 6 months if infant formula or home prepared formula feeds are not adequate because:-

- they are at increased risk of malnutrition between 6 and 24 months if complementary feeds are not adequate
- their mothers may be sick and may have difficulty caring for them adequately.
- All children should receive regular follow up and referred to specialized care when problems are identified
- At 15 – 18 months child can be screened for HIV after counseling the parents If the child is positive, the child should be referred to specialized care for prolonged follow up:-
- During the follow up care the following should be checked

For infants on replacement feeding under 6 months check, if the infant is:-

- Using suitable type of milk
- Able to get enough supply and
- If the mother is preparing the feeds correctly
- Checked micronutrient supplementation

For infants, above 6 months :-

- Check for appropriate complementary feeding
- At each visit check growth development and health of baby
- Check how mother is coping with her own health and check for any healthy and psychosocial problems.

Sexual relations with an HIV infected partner during pregnancy or lactating significantly increase the chances of transmitting the infection to the baby. Clients should be made aware of this and methods of protection should be discussed

Follow-up

Appointments should be set up according to the following schedule:

Timing of visit	Appointments to be made
Before delivery:	<ul style="list-style-type: none">• pre and post test counselling• infant feeding counselling• demonstrations if appropriate for chosen option
Immediately after delivery	<ul style="list-style-type: none">• demonstration and support for chosen option
One week after delivery	<ul style="list-style-type: none">• mother and child examination• session with counselor
One month after delivery and every month until baby is six months old	<ul style="list-style-type: none">• child examination• session with counselor
After the six month visit every three months thereafter until the baby is three years old	<ul style="list-style-type: none">• child examination• session with counselor

Issues for discussion in subsequent counselling sessions

- Discussion over the risks of re-infection
- The risks of becoming pregnant again
- How to recognize and deal with basic child hood illnesses (diarrhoea, ARI, fever, malaria etc) (refer to IMCI materials)
- How to prepare and administer ORS

How to ensure the baby is receiving enough milk

CHAPTER 5: GUIDELINE FOR LABORATORY SERVICES

Laboratory services provide an important backup for the management of HIV-infected pregnant women requires high quality services. The tests for diagnosis of HIV infection in a symptomatic clients need to have high sensitivity, specificity and positive predictive value. In addition, cost of laboratory tests and speed at which they are performed need to be balanced in order to make the exercise cost-beneficial. This aspect needs to be integrated with quality counselling services and confidentiality. This section therefore aims to equip the laboratory personnel with relevant knowledge and skills to meet the special demands of HIV testing of pregnant women.

5.1 Recommendation for Rapid HIV Testing Technology to be Used for the Prevention of Mother to Child Transmission Project

Screening of pregnant women for possible HIV infection is an important component in the prevention of mother – to – child transmission (PMTCT) service. To accomplish this, the use of simple/rapid assays has been recommended for use in voluntary counselling and testing (VCT) of HIV in PMTCT on the basis of the following observations:-

- Avoiding doubling travel time and expenses for visiting clinics.
- Simple/rapid assays do not need robust laboratory facilities or highly trained staff.
- They reduce delay between testing and starting antiretroviral (ARV) intervention.
- Their use increases the proportion of patients collecting their HIV testing results on the same day.
- Suitable algorithms based on a combination of two or more simple/rapid tests have been shown to have accuracy comparable to double ELISA or ELISA/Western blot testing strategies.

However, testing strategies based on the use of simple/rapid assays have the following potential shortcomings:

- On-the spot testing may provide more opportunities for breaches of confidentiality.
- Clients may make hasty decisions to undergo testing without having thought thoroughly about the consequences of the test results and before involving their partners.

- Simple/rapid assays may be slightly less sensitive for the detection of HIV infection in the early stage before optimal antibody levels are produced as compared to most ELISA assays, hence the need for thorough quality control and adherence to testing algorithms.
- No results on the same day may cause loss of confidence and eventual dropout (indeterminate results)

In spite of these few limitations, simple/rapid assays are reckoned to be cost-beneficial in an effective VCT, especially in resource-poor settings.

5.2 Sample collection

- Blood obtained by venepuncture should be collected in a 5ml empty sterile vacutainer tube or universal container and labelled with the client's antenatal number.
- Label the tubes/container and enter in the register book
- Leave to clot. Pipette the required volume for the on-the spot testing.
- For reactive samples separate sera and transfer into storage tubes labelled with the corresponding antenatal number.
- Open one tube or bottle at a time and keep the open container at least 0.5m apart from other containers in order to avoid client-to-client carry-over during specimen preparation.
- Use 5% (w/v) sodium hypochlorite as a disinfectant for the working surface. A fresh absorbent tissue should be used as a working surface.
- During specimen collection, a minimum of two people, one of whom should be the in charge of the antenatal clinic, must cross-check the labeling of specimens and the corresponding laboratory request form.
- On-the spot testing of the samples should be done by the trained staff using the kit assay protocol, which must always be available on the testing area.
- Record results in the form and record book immediately after testing.
- Linking of the test results to the clients' name should be done by the counsellor, who should not be involved in the specimen testing.

5.3 Testing algorithm for pregnant women

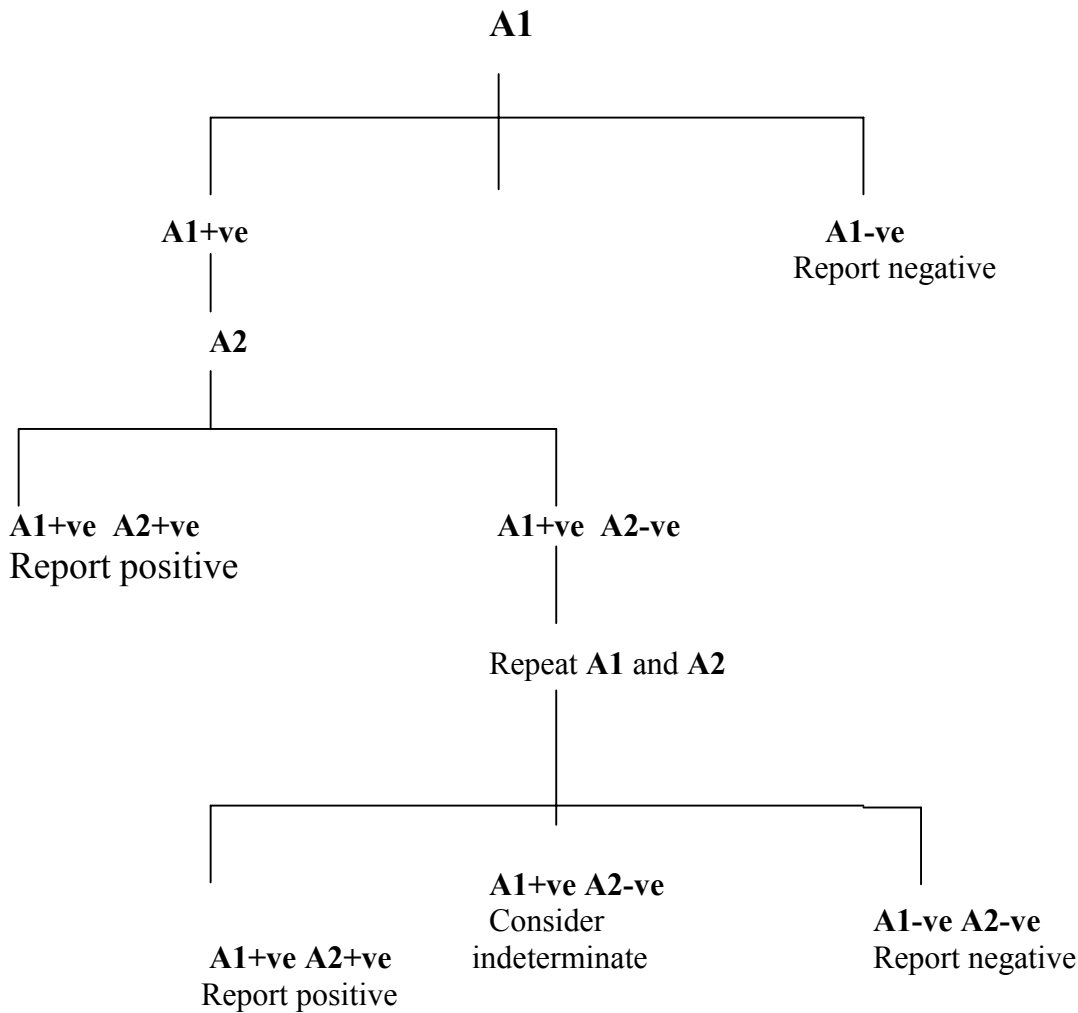
In line with the 1998 WHO/UNAIDS "**Revised recommendations for the selection and use of HIV antibody tests**" strategy II is recommended for the diagnosis of HIV infection in asymptomatic pregnant women in the planned PMTCT in Tanzania, where HIV prevalence among pregnant women is >10% in all sites. Guaranteeing confidentiality of test results is a fundamental principle of HIV testing, which also helps to protect clients from stigmatization.

A sample (serum or plasma) or whole blood is first tested with one simple/rapid assay. If reactive it is re-tested with a second simple/rapid assay based on a different antigen preparation and/or different test principle. A sample that is reactive on both tests is considered HIV antibody positive. If it is non-reactive on the first test it is considered HIV antibody negative. If a sample is reactive on the first test but non-reactive on the second test, it should be re-tested with the two assays. Concordant results after repeat testing will indicate a positive or negative result. If the results of the two assays remain discordant, the sample is considered indeterminate.

For asymptomatic individuals with indeterminate result, it is recommended to take a second sample after a minimum period of 2 weeks following the first sample and repeat the testing strategy. If it is found to be indeterminate it should be subjected to a confirmatory testing. However, if this result is also indeterminate, longer follow-up is recommended (3, 6, 12 months). If the results remain indeterminate after 1 year, the person is considered to be HIV antibody negative.

An additional blood sample should be obtained and tested from all persons newly diagnosed as seropositive on the basis of their first sample in order to eliminate any possible technical or clerical error. However, in order to make VCT cost-beneficial and increase the number of pregnant women who receive their HIV test results after proper counselling, a strategy of providing same day results should be promoted in all sites.

Figure 1: ALGORITHM FOR HIV TESTING STRATEGY II



A1 and **A2** are the 2 different simple/rapid assays.

5.4 Choice of simple/rapid assays suitable for Tanzania

Based on their reported performance characteristics, and re-evaluation in 2002, the following simple/rapid assays will be used in the planned PMTCT service in Tanzania:

- Capillus HIV-1/HIV-2 Trinity Biotech: Agglutination assay, recombinant antigens.
- Determine HIV-1/2 (Abbott): Immunochromatographic assay, recombinant and synthetic peptides.
- Uni Gold HIV (Trinity Biotech), recombinant antigens

Combinations of some of these assays have been evaluated in African country settings and found to yield highly reliable results.

An algorithm based on the use of Capillus as the first assay and Determine HIV-1/2 as the second assay will be used. It is recommended to use an ELISA strategy for confirmatory testing of samples with indeterminate reactivities.

Testing procedure

- The initial HIV testing should be done by a trained medical staff in the antenatal clinic, who should regularly supervised by a registered or licensed laboratory personnel.
- Two trained medical staff will conduct the testing. First staff will do capillus, if the blood sample is reactive/positive, the second worker/staff will do the second simple rapid assays.
- A qualified laboratory technician should do the second assay on specimens from clients who are initially seropositive. Extreme carefulness is required to ensure that mixing of samples does not occur, so that same day test results can be communicated to the client. For HIV seropositive clients who do not consent for same day test results, a second sample has to be taken during the next visit and tested by a technician.
- Kit contents should not be used beyond expiration date.
- Testing should be done according to the manufacturer's instructions as detailed in the test protocols included in the kits. The objective is to give test results on the same day. However, flexibility should be allowed for clients who may not wish to receive results immediately after testing.
- Appropriate biosafety precautions should be observed when handling materials that are potentially infectious. These include, but are not limited to the following:

- Wear gloves when handling specimens or reagents.
- Do not eat, drink, smoke, apply cosmetics or handle contact eye lenses in an area where potentially infectious materials are handled.
- Clean and disinfect all specimen spills using 5% (w/v) sodium hypochlorite or other suitable disinfectants.
- Decontaminate and dispose of all specimens, reagents and other potentially contaminated materials in accordance with local regulations.

5.5 Diagnosis of HIV infection in children

During PMTCT services, the aim is to provide adequate support for the HIV-infected mother and her infant over the first two years of the child's life. The final outcome measure of the project is to determine the efficacy of the ARV intervention in reducing MTCT of HIV. Children born to HIV infected women may remain HIV seropositive up to 18 months due to persistence of maternal antibodies transferred across the placenta. In most cases these antibodies disappear by 12 – 15 months of age. Therefore, laboratory confirmation of the HIV status of the child is very important. Unfortunately, the most sensitive and specific confirmatory tests for early diagnosis of HIV infection in children (viral culture and HIV nucleic acid detection techniques) are not available, affordable and sustainable in most developing countries including Tanzania. It is therefore recommended to do conventional ELISA testing on children blood samples taken at 15 and 18 months.

Sites, which have additional resource support, may also wish to do PCR or other suitable assays eg. p24Ag ELISA assay for the early detection of HIV infection. For a mother who continues to breastfeed the child beyond one year of age, the risk of late postnatal transmission increases. Therefore, for such children, an additional simple/rapid or ELISA test will need to be done on a sample drawn beyond 18 months of age to ascertain HIV infection status. It is also proposed that where research funding is available, blood samples may be drawn from infants at birth, 6 weeks, 3 months, thereafter, 3 monthly up to 18 months of age for testing. This will assist in determining the probable timing of HIV transmission and resolving HIV status among infants who die early.

5.6 Baseline Laboratory Evaluation

After the diagnosis of HIV has been confirmed, a baseline laboratory evaluation is needed to establish the stage of disease, and exposure to other infectious diseases.

The effects of HIV and related infections may involve haematologic, renal or hepatic abnormalities. A complete Blood count is necessary at baseline to evaluate for leucopenia, anaemia and thrombocytopenia also chemistry panel will include

- Liver and Renal function tests
- Lipid profile include cholesterol, triglycerides.

One of the best measurements for monitoring disease progression in HIV infected individual is determination of the CD4 + T lymphocytes:-

- CD4 lymphocytes count:-
 - The hallmark of HIV infection is the progressive decline in CD4 (helper) T- lymphocytes;
 - Normal levels are usually 500 – 1400/mm³
 - CD4 counts may drop at the time of primary infection.

Knowledge of the baseline CD4 count is of vital importance in assessing the patient:-

- (a) Staging of HIV infection
- (b) Recommendation for antiretroviral treatment
- (c) Prophylaxis against specific opportunistic infections

Many factors may cause variability in the CD4 counts. The includes:-

- Inter-laboratory variation
- Seasonal and diurnal variation (lowest levels at noon, highest in the evening)
- The use of corticosteroids (decrease values)
- Intercurrent illness (decrease values)

The best (suitable) time for collection of blood for CD4 counts should be before noon.

Sample Collection

Collect blood using vacutainer tube with EDTA (lavender top)

Testing Procedure

CD4 counts should be conducted by a well-trained laboratory technicians, microbiologist /pathologist.

Testing should be done according to the manufactures instructions.

5.7Quality Control

This is an essential component of HIV testing, which is intended to ensure high quality of test results and avoid clerical, technical and test performance errors.

Quality control measures at testing sites

- During specimen collection, a minimum of two people, one of whom should be the in charge of the antenatal clinic, must cross-check the labelling of specimens, corresponding laboratory request form and record book.
- On-the spot testing of the samples should be done by the trained staff using the kit assay protocol, which must always be available on the testing area.
- Recording of the results should be done immediately after testing
- Linking of the test results to the clients' name should be done by the counsellor, who should not be involved in the specimen testing.
- A Microbiologist or the Laboratory Technician in charge at the pilot site should supervise the whole exercise of quality assurance of HIV testing locally.
- A checklist for support supervision shall be used to determine the source of error. If poor performance is reported on three consecutive occasions, remedial measures, including re-training and/or change of staff shall be recommended by the Microbiologist/Technician in charge of the project site.

5.8 National Quality Control Assessment Scheme

- This is a necessary component of HIV testing in order to ensure good quality of test results. Quality control of HIV testing shall be done according to the operational guidelines set by the MOH, Tanzania. It is recommended to strengthen the National external quality control assessment scheme (NEQAS) that will enroll all laboratories in the project sites. Randomly selected number of samples and repeatedly indeterminate samples should be submitted to the National HIV Reference Laboratory at Muhimbili National Hospital (MNH), Bugando Medical Centre, KCMC, MRH for testing in order to monitor the accuracy of HIV testing in the testing sites. The frequency of sending specimens for NEQAS will be determined by local circumstances, including need and available resources.
- Specimens – Sera in tubes or Dried Blood Spot
- Pick every tenth specimen and all indeterminate samples
- Sera should be packed in tubes, sealed to avoid leakage and the pack labeled in accordance with local postal regulations.
- The samples should then be sent to the nearest reference lab.
- The filter paper method will be adopted for routine use because it is simpler and cheaper
- Results from the reference lab should also be recorded in the record book
- Clients' antenatal registration numbers, and not names, should be used to identify specimens.
- Quality assurance procedures should be checked and/or a new test combination should be adopted if the number of initial discordant, indeterminate results exceeds 5%.

5.9 Other laboratory tests

As part of routine antenatal care, the following laboratory tests should be done and communicated to each pregnant woman:

- Syphilis serology by Venereal Disease Research Laboratory (VDRL) or Rapid Plasma Reagin (RPR) tests whichever is available. Highly reactive test results should be confirmed by either Treponema Pallidum Haemagglutination Assay (TPHA) or Treponema Pallidum Particle Agglutination assay (TPPA)/Determine.
- Haemoglobin estimation.
- RhD blood grouping.

The full blood picture including platelet counts should be determined for each client before initiation of ARV and one week post-delivery. Additional tests may be required on the basis of clinical assessment of individual cases.

5.10 Procurement and storage of test kits and reagents

Test kits and essential reagents will be procured by the organization supporting the project. However, in future, in order to get the HIV test kits at a low cost, the National AIDS Control Programme/MSD will be responsible for purchasing the test kits in bulk through UNAIDS and distribute them to the Project sites. All HIV test kits and other reagents must be stored at the appropriate temperature as recommended by the manufacturer. Regular inspection of the expiration dates of the kits and reagents should be done by the Microbiologist or Technician in charge of the site. The person incharge must also ensure that there is enough stock at all times.

5.11 Monitoring and Evaluation

Logging information

Most of the general information from the pregnant women including their demographic data, counselling information and HIV test results will be recorded and disseminated through the existing reporting system approved by the MOH for hospitals in Tanzania. Additional information for monitoring and evaluation of VCT for HIV not covered by MTUHA and other existing health information systems will be collected using the following information gathering and dissemination tools:

- VCT Registration Form
- VCT Client Referral Form
- VCT Monthly Return Form

Monitoring indicators for HIV testing

The following parameters should be properly documented in order to monitor the efficiency of voluntary and confidential HIV counselling and testing.

- Proportion of pregnant women who undergo HIV testing after counselling and informed consent.
Aim at HIV testing of >75% of women seen at antenatal care clinics.
- Proportion of HIV+ women who come back for results.
- Availability of HIV test kits.
- Proportion of discordant results between testing at project site and the reference laboratory.
- Information/feedback of the Quality Assessment and Indeterminate specimens sent at the referral level for testing.

CHAPTER 6: MANAGEMENT OF ARV'S AND OTHER SUPPLIES FOR PMTCT

The use of ARV's will be restricted to the PMTCT service. This will be achieved if steps are taken at the start to monitor through correct recording the storage, distribution and use of the drug(s). The need to closely control the use of drugs has several advantages including:-

- Correct utilization of the drug(s) will minimize the chances of spread of resistance of the HIV Virus to the drug(s)
- Correct recording of the use will help to evaluate the extent the drug(s) have reached the targeted group.

6.1 Management of the drug(s) and supplies at Central level:-

- All drug(s) and supplies for use in PMTCT will be centrally managed by MSD
- Prior to distribution, all drug(s) should be registered by the Pharmacy Board and check their quality
- MSD will receive and keep records of all items brought either through donation or otherwise
- MSD will distribute the drug(s) and other supplies as instructed by the program
- MSD will provide the program with report on the distribution performed as the program desires
- To have smooth operations MSD will enter into Agreement with the program, where by the obligation of each party will be stipulated clearly.

6.2 Management at Hospital level:-

- Drugs and other supplies used in the PMTCT will either be delivered to the hospital or collected at any MSD's outlet by the hospital staff
- The hospital staff will physically check the items and physically count before signing of the relevant transaction documents

At the hospital level accountability of the drug(s) is the responsibility of the officer incharge of hospital pharmacy.

Hospital Pharmacy

- There must be a register (ledger) which keeps all records and receipts after distribution.
- A buffer stock of drug(s) is kept at the labor ward to manage those patients who haven't taken their medicine. Proper recording on the utilization of the drug(s) is filled in the labor, delivery and birth register.
- After delivery the child will be given the syrup and quantity issued recorded in the appropriate register

6.3 Monitoring the Utilization of the drugs:-

At hospital level:-

The hospital pharmacist shall periodically perform the following counter – checking procedures:-

- Compare the quantities of drug(s) prescribed by the prescriber and check the copies of prescriptions to ascertain the quantities issued and also check in the labor ward administration sheet to determine the quantities utilized. These quantities if properly recorded, should always be equivalent.
- By comparing the overall utilization of the drug(s) and quantities in the ledger book, and conducting out physical counts, the Pharmacist can then be able, to detect the quantities utilized, those not used and those returned by women who were not able to take the medication.
- The Pharmacist will produce quarterly reports to the program.

At Central Level:-

- MSD will produce report on quantities distributed to the program
- By comparing records from MSD and those from the field the program shall be able to identify the consumptions pattern of the drug(s) per each hospital
- Correct record will provide accurate annual consumption figures, thus planning for replacement of stocks will be achieved.

CHAPTER 7: COMMUNITY PARTICIPATION IN PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV

Current services of PMTCT of HIV offered in Tanzania are hospital based. Knowledge about HIV/AIDS is high. However PMTCT which started in Tanzania in the year 2000 in five pilot sites is a fairly new intervention hence the community is not very much aware of it. HIV/AIDS and MTCT as a public health problem is no longer a domain of health and health related experts. The community and other sectors in general have a great role to play in PMTCT.

This section aims at discussing about how to advocate for community participation in PMTCT by empowering and developing the capacity of the community in promotion and participation in PMTCT services. It also highlights how the service provider is going to create the right conditions for the community to participate in PMTCT services.

7.1 Understanding the Community

A community is a social group of people in certain geographical area e.g. village, ward who share similar interest, a common culture and government. Every community has its own culture, beliefs, norms, ethics, vision and potential resources.

A service provider is a public or private servant in a given community. The service provider regards the community as a recipient of health services. The community regards the service provider as a servant of his/her employer and serves the interest of his or her employer. This type of relationship contributes negatively to community participation and mobilisation in implementing any intervention.

In order to change this negative attitude the service provider must know and familiarize himself/ herself with know the culture, values and norms of the community. The administrative structure and other leaders in the community, and how to mobilise the community in PMTCT services.

The community must be seen as his or her partner in performing PMTCT services respond positively by accepting him/her plan, implement and evaluate together the PMTCT services within the

community with the service provider. In this aspect the service provider will be working with the representatives [leadership] of the community.

The process of decision making for health related issues at the household level is normally vested in the hands of the head of the family. In most cases the head of the family is the man. His decision influences the acceptance of health related intervention like PMTCT. The service provider must know the roles of the man at the household and community level.

There are ongoing efforts by the Government of empowering the community by the development of Patients' Client Charter. These are service related declarations that recognise the community as partners in the fight against HIV/AIDS transmission from mother to child.

7.3 Entering the Community

Entering the Community is a process of familiarising with the community and introducing the service provider to that particular community.

There are many ways of entering the community.

- The service provider:
 - Must familiarise with the community in order to understand the culture, taboos, religious beliefs, social characteristics and prevalence of various diseases.
 - Should interact appropriately with different groups in that community.
 - After entering the community he/she should cooperate with other service providers existing in that community.

- Sometimes, when entering the community the service provider may be required to take a different approach. This may involve a process of LOOK, LISTEN and LEARN. When this approach is used the service provider should not raise community hopes through questions or informal interaction with the community. In this process entering the community he/she will meet different types of leaders at different levels.

- Another process of entering the community can be informal exploration. This involves the service provider reading reports, newspapers and asking people about that particular community without appearing in that community personally.

7.4 Advocacy and Communication

Advocacy is a continuous and adoptive process of collecting, organizing and formulating information into dialogue to be communicated or shared within or outside the community. In simpler terms advocacy means campaigning for defence, backing encouraging, promotion and support.

The service provider must have tools for conducting advocacy for PMTCT in a community. Commonly used tools are those related with:

- Participatory rural appraisal techniques
 - Community resource map
 - Transect lines
 - Seasonal calendar
 - A time line and trend line
 - Institutional analysis
 - Priority setting
 - Elaboration of community Action Plan
- Use of drama, role plays and songs. These will contain messages about PMTCT services.
- The service provider must be well equipped with knowledge and skills on the provision of PMTCT services:-

Knowledge about PMTCT

- General Information on PMTCT

The service provider must be knowledgeable in MTCT services. When advocating for PMTCT in a community he must give a full account on how that transmission occurs and how this can be prevented. MTCT occurs during pregnancy, delivery or at the time of breastfeeding. This vertical transmission varies from 35 – 45% in developing countries.

- The set-up of PMTCT involves
 - ANC
 - Well functioning antenatal clinic
 - VCT
 - ARV
 - Modified Obstetric Care
 - Infant feeding options counseling
 - Follow up of mother / child pair
 - Primary Prevention of MTCT
 - This is instituting preventative measures before an individual or community is affected by the disease.
 - The service provider must aim at providing information about primary prevention of MTCT.
 - This involves:
 - IEC about MTCT targeting the adolescent, young and adult groups
 - Focus on premarital testing for HIV
 - Focussing on testing for HIV before deciding to get another baby
 - Focus on risk reduction of infection
 - Faithfulness to partners
 - Abstinence
 - Condom use
 - Focus on community support
 - Infant Feeding Options
 - Counselling for infant feeding options in MTCT has psychosocial, economical and cultural implications. The service provider must not decide options for the mother but should give enough information so that the mother makes an informed choice.
 - Breastfeeding remains the main source for nutrition for the baby. When the mother decides not to breast feed, she should be supported by the family and the community in carrying out her options.

- Role of the man in PMTCT

Entry point in PMTCT is pregnancy state and antenatal clinic. Traditionally it is mainly the pregnant woman who attends the antenatal clinic. This has led to a situation that only the pregnant women are accessible to PMTCT.

Counselling and testing in PMTCT is voluntary and confidential.

The pregnant woman has the right to tell or not to tell her husband about her HIV serostatus. Due to these two things, traditional antenatal clinic attendees and confidentiality, the man is rarely involved in PMTCT.

The service provider must understand these forces which keep the man outside PMTCT and address them through community mobilisation and awareness.

MTCT +

PMTCT is primarily advocating for preventing infections from the mother to the child. All processes of preventing the child from infection do not take into account the infectious status of the mother. Indeed, in some situations, mothers have asked the service providers “What about me?” MTCT + will try to address this missing link. This will involve the following:

- ANC

- Integrate PMTCT in existing ANC and mother/child services in our health facilities.

- Improve on obstetric care provision and the protective gears

- Treat the opportunistic infections

- Provide appropriate nutrition care to mothers

- Focus on community support for the mother

- Highly Active Antiretroviral Therapy (HAART)

- Mothers must be started on HAART care

- All criteria for HAART care must be followed

- The government has shown the way by providing guidelines for HAART

- Scale up sites

PMTCT must move from the five pilot sites to other health facilities. Experience gained during the piloting phase should be used in servicing other health facilities. The health providers must give information about MTCT + on the professional account and not giving hope for future cure.

Communication is a two way process of exchanging information. This includes exchange of ideas and views. The process involves a sender on one side and a recipient on the other side. The message is passed through a media to the recipient. For effective communication the recipient has to give a feed back to the sender to show that, the message was understood.

The elements of communication are:

SENDER – a person who initiates communication

MESSAGE – The information sent forward

MEDIUM – This is a channel through which the message is passed

RECEIVER-The person who receives the message

FEED BACK – The message is interpreted and given back as it was intended

These five elements of communication must be seen as belonging both to the service provider and the community. The community must bear these elements so that they also send messages through the sender and medium. The receiver will be expected to give feedback. The service provider must be able to learn from the community. The knowledge gained from either side must be used for mutual benefit.

The goals of communication are

- To convey information
- To develop understanding
- To get action
- To persuade
- To develop mutually acceptable approaches towards solving identified problems.

The service provider must make sure that the message given through the tool of communication reaches the targeted groups. There should not be any distortion of the message. Supporting documents like IEC materials must be used in order to maintain the integrity of the sender, message, medium and receiver. Effective communication must result in good relations and community participation.

The service provider will promote PMTCT in the community by giving the information that advocates PMTCT as a feasible, affordable and acceptable HIV/AIDS intervention. He/she will champion for the need to deliver babies who are not infected by HIV. In order for this to be achieved the pregnant women in the community with the support of their husbands or partners will be voluntarily counselled and tested in the ANC. Those who will be found HIV positive will follow a prescribed protocol of antiretroviral drugs and infant feeding choices.

7.5 Community Mobilization and Empowerment

Community Mobilization is a process of bringing the community together, and identifying the problem, finally finding solution on how to solve the problem. This can be through:

- Spontaneous (empowering),
This is based on local initiatives, which have little or no external supports.
- Induced (contribution)
This is the most common type of community participation which results from external initiative seeking support and endorsement from external plan
- Compulsory:
People are mobilized or organized to take activities to which they have no say or control.
- Community participation and community involvement: -
Community participation is preferable to involvement because it implies a deeper and more personal identification of members of the community. However the two terms are interchangeable but, all in all any of the above should include people involvement in: -
 - Planning
 - Implementation
 - Monitoring

- Evaluation
- Sharing benefits
- Good characteristics of the service provider in promoting community participation are:
 - Ability to motivate
 - Understand Community Culture
 - Awareness Creation
 - Participatory approach
 - Belief in community potential

Community Empowerment is a process of moving personal understanding to a group, with an aim of enabling the community or an individual and families to read their reality and transform it to conquer dependence on outside resources, services and to enhance participation and organization that enables communities to control their own decisions.

The service provider must meet the following conditions in order to promote empowerment

- Mutual knowledge
- Dialogue
- Collective decision and action
- Assessment: follow up, feed back and accountability

Community Mobilisation in PMTCT

The service provider must be able to utilise tools of community mobilisation in supporting PMTCT. The fact that HIV/AIDS is a public health problem should link together the community and the service provider in working towards a common goal of advocating for community participation and empowerment. The knowledge acquired about HIV transmission, prevention and care must be translated into effective interventions for PMTCT.

The community that is well mobilised will have the following characteristics:

- Be fully aware and committed to the prevention of HIV / AIDS and PMTCT
- Be practical in risk reduction
- Fully utilise available resources in the community and outside the community
- Be owners and supporters of the available interventions.

7.6 Multisectoral Partnership

A service provider must be aware of other sectors providing services in the area he is working. This recognition will vary from one level of health care to another. We are going to limit our discussion to district, division and wards / village levels. At all these levels, there is a social services committee which oversees among other things, health related issues.

At the district level the District Medical Officer (DMO) and District Health Board (DHB) will coordinate all agencies involved in health and health related issues. The DMO will disseminate MTCT knowledge and its prevention to those partners and collaborators in the health service. This partnership must involve integrating the knowledge and the services such that every agency speaks and advocates for PMTCT and other related services in the community.

At the centre of this partnership, networking must be reinforced. This will involve many areas such as sharing information and best practices, referral of the needy, statistics and strengthening linkages. The sharing of resources has been the most difficult area of cooperation. In this regard, every agency becomes egocentric. There is no transparency in sharing resources. The DMO and the DHB must strive to bring this into light and practice. For effective coordination, the DMO and the DHB must have a comprehensive timetable for various agent activities. Mechanism for feedback for DMO / DHB and agents must be put in place and be operational. This must be carried down to the community that they serve.

7.7 Psychosocial Issues Related to PMTCT in the Community

The psyche has something to do with mind and social is seen as a situation surrounding individuals by beliefs, religion, economy, politics, and the culture. These can be summed up as environmental factors. Thus psychosocial issues are psychic and environmental factors that affect an individual or a community.

In the field of HIV/AIDS and MTCT these issues are:

- Stigma and discrimination
- Confidentiality

- Domestic violence
- Personal values (not to breast feed for keeping chest shape)
- Cultural values (not to breastfeed is bad)
- Economic factors (not able to purchase infant formula)
- Lack of community/family support

These psychosocial issues pose a great challenge both for service providers, individuals and the community in general. Whose duty is it to eliminate or reduce these issues?

The irony is that everybody is affected by these psychosocial issues of HIV / AIDS and MTCT. All said and done, stigma can be seen as the cornerstone of all these psychosocial issues. Service providers are stigmatised as well as the individuals and the community on HIV/AIDS and MTCT, stigma is worse for those who are HIV seropositive.

What can be used to reduce these psychosocial issues of HIV / AIDS and MTCT? The community has been advised to use various methods which are by no means perfect.

Talking transparently about HIV / AIDS has been championed as a way of reducing stigma. How effective is this approach of talking transparently about HIV / AIDS and MTCT?

Supporters of this approach say that it reduces the impact of HIV on an individual and the community. People should therefore be encouraged to talk openly about HIV / AIDS. To this end the government has directed all the leaders to make HIV / AIDS one of their daily talks when addressing the community.

Going public for those people living with HIV and AIDS has made a little progress because of discrimination by the community. However, when the PLHA meet as a peer group they are able to gain support and encouragement. The information of the peer group of PLHA has complemented the work of service providers. This group has been useful in advocating for stigma reduction.

Disclosure of HIV positive serostatus has met domestic violence and divorces or separation. PMTCT has been affected by such violence when pregnant women disclose their serostatus to their husbands / partners. In fear of such violence, women are not telling their spouses and therefore, leading to low

man's involvement. Service providers will have to give extended detailed information about MTCT+ especially with the provision of HAART care in order to minimise these incidences.

Tanzanian community is predominantly a breastfeeding community. When an HIV positive woman has opted to not breastfeed her child, the situation at home and in the community is tense. (Why is she not breast feeding her baby?) It becomes a frequently asked question. The answer given cannot satisfy everybody especially her husband and the immediate members of the family, if they were not counselled on HIV infection. She remains discriminated in her own community.

What about the cost for replacement feeding of the child? Many Tanzanians live on or below the poverty line. Very few people can afford to give replacement feeding to their babies. Compare high costs of between TSh. 98,000 -150,000 for the first six months of life.

The service provider needs to be knowledgeable on these psychosocial issues and talk them out to the community. There is no single answer except community dialogue.

CHAPTER 8 : DEVELOPMENT OF IEC MATERIALS ON PMTCT

HIV/AIDS transmission from mother to child is not well known to many people in Tanzania. The stigmatization particularly from men to women is a clear indication on the situation and in most societies women become marginalized.

There are a number of actors who provide IEC materials to the public with the aim of providing information relevant to this issue and various communication channels are used in the delivery of the information.

So as to unify and standardize the delivery of the information it has been necessary to develop this guideline. The main purpose of the guideline is to give directions to be followed in order to ensure quality, reliable and convincing information to the public that will bring about behavioral change among the target audience.

The objectives of IEC interventions are :

- To raise awareness among policy makers, influential people and religious leaders on PMTCT in order to reduce the number of pregnant mothers transmitting HIV to their children before birth, during birth, and while breast feeding.
- To raise awareness of the general public on the importance of PMTCT among HIV positive pregnant mothers during birth, and while breast feeding

Information Education and Communication (IEC) are terms used to describe communication activities geared at promoting health.

Health Promotion: Is the process of enabling people to increase control over and to improve their health. To reach a state of complete physical mental and social well-being, an individual or group must be able to identify and to realize aspirations to satisfy needs and to change or cope with the environment.

8.1 Important Considerations When Developing IEC Strategy

Whether be it printed materials, radio, TV programs drama or folk shows, messages should be based on well-developed communication strategy. A strategy is the skeleton of the communications package and consists of all the basic decisions about the communication program activities to be performed and how to perform them.

It will guide you to develop materials and messages for use by an intended audience for the purpose of bringing change in knowledge, attitudes, and practices (KAP). The important issues to be considered by the health care providers are as follows:

The Six Questions

While developing IEC materials the health provider should find answers to the following questions: **to whom, what, how, which, where and when.**

- **To whom:**

The recipients of the message/material you want to convey are called the target audience. Your task is therefore to identify whom you intend to communicate with. The target audience might be for example the women in a village, or the community health workers, or teachers or local policy workers, religious leaders, etc.

- **What:**

The message content contained in the material you want to communicate with the target audience should be precise and clearly stated. Ideally it should deal with resistance points or barriers that prevent people from changing their behaviour, such as traditional views of good or bad things, religious prohibitions on certain issues. All these and others must be considered in developing the message content. It is necessary to demonstrate respect for existing cultural beliefs, traditions, norms and values of the society.

- **How!**

If you want people to engage in a certain behaviour, you should explain to them the benefits of following a particular practice. The advantages must be couched in terms of the target audience's needs or concerns. It may call for the same message to be communicated in several different ways. The communication strategy should also spell out the tone: whether serious, humorous, realistic etc.

- **Which!**

Before developing the message you should make decisions about the available media outlets and their suitability to convey the message. Your decision to develop posters, pamphlets, radio, and TV programs, bill boards, drama, stories or other plays for example will be based on the most important criteria affecting the choice of the media ie. how a particular media reach the target audience.

- **Where!**

A health care provider need to know the settings in which the target audience will be most receptive to the kind of messages developed. You need to decide whether the settings is the home, the school, clinics, pombe shop, the market place or a combination of settings. Always keep in mind that different audience segments may have different preferences and as a result, be more or less responsive to your message.

- **When!**

Timing is another important issue that a health care provider need to take into consideration when developing a communication strategy.

You need to find out for example, when people listen to their radios, at what time it is convenient for them to talk to health workers, on what months are best for ngoma shows etc. It is important to identify the full range of opportunities and constraints that can enhance or detract audience receptivity to the message.

8.2 Planning

The task of developing IEC strategy requires proper planning. A communication strategy is effective when it is based on adequate analysis of the existing problems and clear definition of the objectives and the methods of communication. Therefore a health care provider need to have a proper understanding of

the general and specific characteristics of the community she/he intends to save and use that knowledge to develop a communication strategy with an action plan by following the steps below:

- ***Problem identification***

Development of a communication strategy should begin with the systematic analysis of relevant problems in a community. A qualitative inquiry can be useful in providing a basis for the required information. The reason is that communications strategy development depends largely on the target audience's attitudes, beliefs, perceptions, hopes and fears. The use of focus groups within a community can be particularly effective in such an analysis. Moreover you should decide who should be included in the sample group, where should the investigation be conducted. How should the group be selected etc.

- ***Formulation of the action plan:***

Once problems have been identified and measures to be taken have been discussed with the community, the next step is to formulate an action plan basing on the findings. It is time to select the appropriate media and the right format. You must bear in mind that medium might lend itself to several format choices or options for example radio could be used to broadcast radio spots or radio dramas, while posters, booklets, flipcharts training manual, comic books or any of a variety of other materials might be suitable when a health provider uses face to face communications to talk with a member or members of the community.

What is more important is that the developed materials should have the ability to catch the attention of the audience ie. people want to listen to or look at the message or material if it is to affect them.

Well developed IEC material should have the following characteristics:

- Be short, simple and include only a few key ideas.
- Give reliable complete information
- Repeat the idea many times
- Recommend precise behavior change
- Make use of a slogan or theme
- Ensure that the message is presented by a credible source (as perceived by the target group).
- Present the facts in a direct manner

- Make use of positive experiences, not negative ones.
- Use humour without being offensive to anyone.

- **Implementation:**

Implementation of the communication activities will be in phases as stipulated in the action plan, beginning with the production of the draft or dummy materials, then pre-testing the draft materials, incorporate findings from the pre-testing activities, and thereafter producing the final copies. Also training the actors to ensure that all persons involved in the various communication activities carry out their roles adequately is important. Once the materials and training have been completed, distribution of materials or dissemination of messages follows.

- **Monitoring:**

During implementation of the communication activities it is important to monitor the activities i.e. To check continuously on what is happening to ensure that everything and everyone are working as planned. Monitoring permits midcourse changes in communications activities that can enhance program effectiveness.

- **Evaluation:**

Evaluation of the communication strategy is important as it determines whether the program is yielding the expected outcome therefore it should be done adequately. The evaluation should be conducted with the participation of the beneficiary population, as the actions to be evaluated concern them directly and may help them improve their performance.

8.3 Audience Segmentation (Targeting)

The beneficiary population for information education and communication (IEC) intervention is normally made up of several groups, which can be:

- ***The vulnerable group*** – They are the affected members. This may not be among the groups to whom the messages are directed.
- ***The primary group*** – Is composed of people in the population whose behaviour is to be modified i.e. mothers.

- **The secondary group** – Comprises people who act as intermediaries i.e. those who will deliver the message to the first group such as health providers, teachers etc.
- **The tertiary group** - is made up of people who can help to make the programme a success through their influence and authority. These include community leaders, financial donors, and politicians.

8.4 Pre-Testing the Messages/Materials

Once the materials have been prepared you should pre-test them to make sure that they convey the intended message. Pre-testing provides the opportunity to revise the materials before final production.

The most important part of pre-testing is to present the materials to the target audience to determine audience receptivity.

The mechanisms of pre-testing may be different for different materials for example; it is sufficient merely to present a poster and record audience reactions to it. A radio spot however needs to be tape recorded and played to representatives of the target audience. The pre-testing of messages focuses on five characteristics:-

- Attention (does the message have stopping power?)
- Comprehension (is it clearly understood?)
- Relevance (is the message of concern to the audience?)
- Acceptability (is the message free from offensive references?)
- Credibility (are the messages and the sources believable?)

When pre-testing, the health provider should seek the answers to the following specific questions from the target audience:

- Do audience members understand the message?
- Do they believe it?
- It is culturally acceptable.
- Do they find the material interesting?
- Does the message encourage or motivate them to change their behaviour?

8.5 Monitoring and Evaluation:

During implementation stage it is essential to monitor IEC activities to ensure that they are meeting the goals. The post launch monitoring variables should be divided into separate elements. For example radio messages could be categorized as radio spots and radio drama and the following questions could be posed for monitoring purposes:

- Are the radio messages being broadcast?
- Are they being broadcast, as scheduled?
- Is the target audience listening to the messages?
- How are audience members reacting to the messages?
- If audience is not reacting as intended how should the existing strategy be revised?

In the case of person to person communications, carried out by community health workers, monitoring may be structured around the following questions:

- Are community health workers adequately equipped
- Are the materials in good condition and adequate supply
- Are the material used correctly and as often as planned?
- How are audiences reacting to messages?
- How are health providers responding to the reactions?
- Are health workers findings communicated to programme manager?

When monitoring a poster one may ask the following questions:

- Have posters been posted at the designated places.
- Have they been put up in the agreed upon fashion?
- Are they protected from rain?
- Are they easy to see?
- Are posters in good condition?
- Is someone checking that they remain intact?
- Is someone replacing damaged posters?
- Is the target audience noticing the posters?
- How is the audience reacting to the posters?

8.6 Coordination and Collaboration

The promotion of PMTCT of HIV/AIDS is not limited to the health sector alone; other sector such as Ministries of Education and Culture, Community Development Gender and Children's Affairs, Non Governmental Organisations as well as International Organisations such as WHO, UNICEF, etc. are involved in one way or the other in the delivery of Health Education activities in the country.

There is therefore a need of having a coordinating mechanism for these sectors to work together so that they collectively improve the social and economic well being of the community and utilize the resources rationally.

8.7 Roles and Responsibilities

• At National level

The PMTCT of HIV/AIDS secretariat in collaboration with the Health Education Unit shall oversee IEC activities conducted of National Level. In particular it shall :

- Provide a forum for networking for sharing information and experience on IEC issues.
- Promote rational utilization of available resources through proper co-ordination of IEC activities.
- Auditing of IEC materials produced in the country and outside the country for country distribution, to ensure that they are standardized and culturally acceptable.
- Promote and evaluate PMTCT research activities.
- Plan, promote, coordinate and support PMTCT activities.

• At regional level

In accordance to the Health Sector Reform (HSR) the Regional Health Management team shall act as the extended arm of the MoH and shall do the following:

- Advice and support districts on the implementation of IEC activities.
- Auditing of IEC material developed and intended for use in the region to avoid publication of conflicting messages to the community.
- Ensure that health education delivery in the region is in accordance with the National Health Policy and PHC Strategy.

- Promote the use of multi media channels such as television, radio, newspapers, journals, etc in the transmission of health education messages.
- Support the district in the formation of traditional drama groups for transmission of HE messages.
- Support the districts in the designing pre-testing and production of teaching aids Posters leaflets etc.
- Integrate and collaborate health education activities conducted by various partners within the region.
- Assist districts to formulate appropriate type of messages and information required for mass media eg. Zonal radio programmes, rural press, leaflets and posters in order to bring about changes in attitudes beliefs and practices.

- **At district level**

The district has the implementation role and shall do the following:

- Identify and prioritize problems relating to PMTCT within the district.
- Plan implement coordinate delivery of IEC activities in accordance with the results of assessment and analysis of the problems in the district.
- Design pre-test produce and distribute IEC material which are culturally acceptable in the district.
- Promote traditional media for effective delivery of IEC messages to the community.
- Monitor and evaluate IEC to facilitate re-planning of IEC activities in the district.
- Receive and scrutinize IEC reports from wards and villages.
- Identify and solicit funds from various sources among donor agencies health related sectors NGOs etc.

CHAPTER 9: MONITORING AND EVALUATION

Monitoring of the intervention is indeed not intending to introduce a new system of recording and reporting. Instead, it intends to improve the existing RCH recording and reporting system through addition of some new components/variables to be recorded and providing for modern means of data storage and analysis in the health delivery system.

This chapter is intended to direct providers of maternal and child health services on comprehensive daily recording of data generated from activities carried out in every section of their work. It also aims at advocating use of routinely collected data, by health facility personnel and the community at large in following up the progress of their services and its outcome.

9.1 Monitoring

Why Monitoring?

The aim of monitoring at the health facility is to allow health staff to use data they collect routinely for the purpose of clinical and administrative management. The programme management shall follow the strategic implementation plan, assign clear responsibilities, and setting up coordinating and supervisory mechanisms. Monitoring will essentially track outputs to be sure that all activities take place as planned or, if problems arise that they are promptly addressed.

Monitoring for Effectiveness

Ministry of Health, partners and community will use results of the analysis of routinely collected data to measure the progress of their services in ensuring:

- a) Constant availability of resources essential for provision of services.
- b) Utilization, by the health facility catchment population, of services offered by the intervention.
- c) Adherence or uninterrupted utilization of offered services by the enrolled clients.

Results of the analysis of routinely collected data will further help the hospital/health facility management and health staff to identify, in a timely manner the problems occurring in their facility regarding the above three dimensions of the intervention, namely availability of essential resources,

utilization of services and adherence. When problems are identified managers and the health staff will rationally conduct analysis of the identified problems with stakeholders and provider appropriate solutions.

Objectives of Monitoring for Project Effectiveness

Objective 1: To monitor availability of resources essential for the smooth provision of intended services.

Monitoring for continuous availability of resources for smooth provision of RCH services is essential. Included in the list are reagents for syphilis screening (RPR or VDRL), ferrous Sulphate, folic acid, anti malaria drugs, reagents for HIV screening, antiretroviral (ARV) drugs and human resources.

Objective 2: To monitor community utilization of mother and child health services.

Assessment of utilization of RCH services would be achieved through the use of the information/ data.

Objective 3: To monitor adherence or uninterrupted utilization of RCH services by the community living in the health facility catchment area.

Monitoring as a routine activity will be conducted on daily basis while the monitoring report will be compiled on quarterly, semi annual and annual.

Monitoring for outputs of the intervention

As with monitoring for effectiveness, managers and health staff will use results of the analysis of routinely collected data to assess the impact of the intervention. The following programme objectives will be monitored:

- a) Counselling
- b) Infant Feeding
- c) Obstetric Care

- d) Laboratory Services
- e) Management of ARV and other supplies
- f) Community Participation
- g) IEC
- h) Monitoring and Evaluation

9.2 Evaluation

Why Evaluation?

Both short and long term evaluation is essential as it shows whether PMTCT programme has met its objectives.

Using the established indicators, implementers of the PMTCT programme shall carry out evaluation activities by doing the following:

- Measure input intermediate and process indicators
- Evaluate specific events and activities
- Document changes based on initial objectives
- Compare final results with indicators to measure change.
- Identify key factors contributing to behaviour change of the intended audience.
- Document unintended changes
- Share results with stakeholders and advocate use of the results.

Input, Process and Impact Indicators

Monitoring and Evaluation shall be implemented under the PMTCT programme monitoring and evaluation logical framework with three categories of indicators, i.e. input indicators, process/output indicators and outcome/impact indicators.

In the process of monitoring broad indicators that cuts across each PMTCT programme component / objective will be developed. Development of any process or impact indicators for assessing the

PMTCT strategic implementation plan shall be a continuous process as per expansion of the programme. The following is the list of the broad indicators.

Input

- Number of Human resource available at service delivery site
- Percentage of staff with PMTCT training
- Percentage of health facilities with acceptable counseling room
- Percentage of health facility well equipped with PMTCT equipments
- Percentage of health facility well stocked with PMTCT supplies / consumables.
- Percentage of health facility supplies / PMTCT guideline, service standards, and reference manuals.
- Percentage of health facilities equipped with relevant PMTCT IEC material.
- Percentage of available funds versus proposed funds in the work plan.
- Monitoring and supervisory guidelines.

Output/Process

- Percentage of pregnant women attended ANC < 20 weeks.
- Percentage of pregnant women who accept testing
- Percentage of pregnant women who brought partners for counseling / testing
- Percentage of pregnant women who have returned for results
- Percentage of pregnant women who are HIV positive and agree to take AZT
- Percentage of ARV client who fully adhere to the regime.
- Percentage of women opt exclusive breastfeeding, infant formula, and mixed breast-feeding.
- Percent of health facilities out stocked of PMTCT supplies and consumables.
- Number of PMTCT training conducted
- Proportion of health personnel who received PMTCT refresher training.
- Number and type of IEC materials produced and distributed
- Number of awareness creation activities conducted
- Number of PMTCT Monitoring and supportive supervision conducted.

Outcome/Impact

- Reduced cases of mother to child transmission on HIV
- Improved RCH services
- Increased community awareness on PMTCT intervention
- Reduced morbidity and mortality of mothers and children
- Improved reproductive health of mothers
- Reduced number of orphans
- Reduced HIV infections / transmission in Tanzania population.

When to Monitor and Evaluate?

Monitoring in the context of interpretation of analysed routine data for the purpose of uncovering problems constraining the progress of the intervention should be conducted quarterly. However, if problems were identified during the preceded monitoring session and solutions instituted, more frequent follow up monitoring sessions may be conducted to reassess the effectiveness of the instituted solution. Furthermore, all monitoring sessions should be well documented. National coordinator should be availed of a copy of the proceedings of local monitoring.

The PMTCT'S strategic implementation plan shall be evaluated at different levels of implementation. There shall be mid term, end of term and long term evaluation to assess the Impact of the programme.

9.3 Data Collection, Entry and Analysis

For smooth monitoring and evaluation of PMTCT programme, there should be refined PMTCT indicator and data collection tools that are responsible to PMTCT monitoring and evaluation logical framework. However most of information/ data needed for PMTCT programme monitoring and evaluation is collected through Health Management Information System (HMIS). Supplementary data collection tools will be developed to capture PMTCT data, which is not being collected by HMIS.

APPENDENCIES

CHAPTER 2

APPENDIX 2.1 Voluntary Counseling and Testing (VCT) Supervision and Support

VCT is a discipline that requires ongoing practice as well as monitoring of the use of such skills by a competent supervisor.

Definition of VCT supervision

A working relationship between a supervisor and a supervisee. The supervisee offers an account or record of his/her work to reflect on it and receive feedback and/or guidance. The objective of this alliance is to enable the supervisee to gain ethical competence, confidence and creativity so as to give his/her best possible service to his/her clients. Therefore, supervision is for the protection of the client and for on-going accountability and professional development of the supervisee. Supervision also provides an opportunity to prevent burn out from occurring.

The supervisor can only work with what the counselor brings. It is essential that the counselor intends to use supervision well and to know how to do this. There is a need to train counselors as supervisors in Tanzania.

The supervisory relationship is educational by nature. The supervisor is there for challenge and support. The supervisor helps the supervisee discover and unlock his/her own resources. The supervisor-supervisee relationship contains all the elements of the counselor-client relationship although **supervision is not counseling**.

The supervisory relationship:

1. Is purposeful
2. Ensures that the supervisee's concerns are explored
3. Facilitates change
4. Is confidential (as per the contractual agreement)

Autonomy is promoted in terms of:

1. Choices
2. Decisions
3. Responsibilities
4. Actions

The relationship ensures:

1. Trust
2. Honesty
3. Warm acceptance
4. Empathy/Understanding/Communication.

Purpose of Supervision

Ethical

In most countries, there are codes of ethics that state that regular supervision is an ethical requirement for practicing counselors. Counseling is still new to Tanzania and discussion is required in order to regulate and professionalize counseling. Perhaps over time a system will be in place for licensing counselors. Supervision is a way of attempting to maintain accountability between and among those who offer their services as counselors to the public. This is the way that the profession seeks to ensure that staff are working responsibly and to the best of their abilities.

A necessary resource

Supervision is a requirement for all counselors, however experienced and talented. Counseling is often work of a highly personal and taxing nature.

1. we may be working with people when they are at their most vulnerable, distressed and needy
2. we may become hardened or burnt out without realizing it which will reflect on our work
3. we may work with clients who leave us puzzled or confused
4. we may get out of date and need to be encouraged to continue our professional development
5. we may exploit our clients without realizing it.

Supervision provides an opportunity for counselors to:

1. explore the way you work
2. stand back and get different perspectives on your clients and the way you are working with them
3. become more aware of the way you affect and are affected by your clients
4. discharge emotions and recharge energies and ideals
5. feel supported in your competence and confidence as a professional person
6. receive feedback and challenge the quality of your practice
7. monitor and develop ethical decision making

Propositions

1. The success of counseling supervision is dependent on the active and responsible participation of the counselor.
2. A supervisor will usually have professional experience and expertise at least equal to the counselor. In this respect he/she will bring knowledge, understanding and intuition to the relationship. However, in situations where there are no counselors of greater experience, it is possible for an experienced counselor to use a less experienced counselor as supervisor. Alternatively, peer supervision can be created.
3. A working agreement is mutually and individually contracted as to roles, rights and responsibilities.
4. The counselor is also a facilitator. As such she/he has a responsibility to foster the conditions that encourage her/his supervisor to provide their best.

Our assumptions that relate to the "best practice" of counseling

1. Ongoing supervision helps to enable, and as far as possible - ensure the optimum service for a client or clients collectively.
2. Supervisees are able to engage actively and usefully in the supervision relationship according to their level of skills, experience, assertiveness and self awareness.
3. It is the supervisor's responsibility to offer to supervisees appropriate
 - information
 - skills
 - support

- challenge
 - alternatively to point them in a direction where these are available
4. Many difficulties in supervision spring from supervisors and supervisees not appreciating the risks and vulnerabilities involved in honest reflection and "adult learning" in a personal context; and therefore not talking openly about them.
 5. There are some situations where a counselor may be stressed or distressed by reason of life or work pressures. This may affect their skill and sensitivity in their counseling and they require support at such times. This may also include the need to terminate counseling practice for a given period of time.
 6. Some trainees and some counselors do not develop sufficient confidence or competence to offer "effective enough" counseling. Some may be temporarily debilitated, and a supervisor may need to determine whether this is the case and take appropriate action.
 7. We are not prepared to continue to work with a supervisee who we consider to be continually ineffective or who we judge to be harmful to clients.
 8. We assume that building a mutually respectful, empathic and genuine relationship with the supervisee will result in a unique working relationship. This relationship will allow the optimum facilitative environment for this counselor to learn, discover and develop.
 9. We believe that by seeking to create an environment of safety and trust we will be enabling the counselors to offer such a relationship to clients.

Responsibilities of Supervisor and Supervisee

Supporting, enabling, ensuring

The supervisor has the responsibility for creating a working relationship through which the counselor is supported as a person working:

1. with clients who may be challenging
2. with clients in distress
3. in situations which may be confusing
4. as a developing counselor

5. assured that someone in the profession is taking seriously the task of monitoring the ethics of his /her practice and will act if necessary within contracted boundaries to ensure the protection of the client.

Bringing, Reflecting, Using.

As a counselor in supervision, with the help of your supervisor, you should be able:

1. to bring your work and share it freely and accessibly
2. to be clear about your needs from supervision
3. to be open to feedback, and be prepared to monitor your practice
4. to use the available supervision time to the best advantage for your counseling and your clients
5. to monitor your use of supervision and take responsibility for giving feedback to your supervisor about its usefulness for you and your clients.

APPENDIX 2.2 Professional code of ethics and practice of counselors

Ethical code of conduct for HIV/AIDS counselors

A code of ethics outlines the fundamental values of counseling. As counselors we should have knowledge of these values so that we are guided to maintain a professional relationship with our clients. The standards counselors and clients follow safeguards the integrity, impartiality and respect for both parties.

The following are the main features of an ethical code of conduct for social workers, counselors, clinical psychologists and other helping professions.

General Principle

Competence

The counselor is responsible for his/her physical safety, effectiveness, competence and conduct so as not to compromise the counseling profession.

The counselor must ensure that he/she has received the required training in counseling skills and techniques.

1. Counselors should regularly monitor their competence and through counseling supervision or consultative support and by seeking the views of their clients and other counselors
2. Each counselor must recognize his/her boundaries and limitations of competence and provide only those services and use only those skills and techniques for which he/she is qualified by training and practice.
3. Specifically they should:
 - Refrain from any claim that they possess qualifications or expertise that they do not
 - Make appropriate referral to others with expertise they do not possess
 - Refrain from making exaggerated claims about the effectiveness of the intervention offered by their services in relation to HIV/ prevention and care

Consent

Counselors must obtain the consent of the clients to engage in the counseling and testing process. Counseling is voluntarily (unless sanctioned through legal channels on criminal or mental health

grounds) and deliberately undertaken by the counselor and client, and it should take place in a private and confidential setting. It is the counselor's responsibility to inform the client about the nature of counseling offered and contractual obligations, e.g. timing, duration, confidentiality, etc.

1. All people taking an HIV test must give informed consent prior to being tested. obtained or provided in the counseling relationship. (A client voluntarily walking into the counseling service centre and indicating a willingness and need to communicate with a counselor about personal issues may imply consent).
2. Counselors are expected to ensure that clients have adequately understood all of the issues involved in VCT before informed consent for HIV testing is given.
3. Recognize the rights of those whose ability to give valid consent to HIV testing may be diminished because of age, learning disabilities or mental illness
4. Recognize the right of clients to withdraw their consent at any time, even after their blood has been taken for HIV testing.
5. It is sometimes argued that in a medical emergency, the consent requirement can be ignored and that health workers may have to know the patient's HIV status in order to protect themselves. The risk of occupational transmission of HIV is extremely small and elementary precautions can eliminate it Non-consensual HIV testing cannot be justified in these circumstances because:

Confidentiality

Counselors must maintain adequate records of their counseling work with clients and take all reasonable steps to preserve the confidentiality of information obtained through client contact. They should take steps to protect the identity of individuals, groups and others revealed through counseling without the individual's expressed permission.

1. Confidentiality should be upheld and no information concerning the client should be given away without the permission of the client. The results of the test must be kept absolutely confidential. However, shared confidentiality is encouraged. Shared confidentiality refers to confidentiality that is shared with others. These others might include family members, loved ones, caregivers, and trusted friends. This shared confidentiality is at the discretion of the person who will be tested. Although the result of the HIV test should be kept confidential, other professionals such as

counselors and health workers might also need to be aware of the person's HIV status in order to provide appropriate care.

2. The counselor must take all reasonable steps to communicate clearly the extent of confidentiality they are offering to clients. Normally, this should be made clear in the pre-counseling information or initial contracting.
3. The counselor must work within the current agreement with his/her client about confidentiality. Any agreement between the counselor and the client about confidentiality may be reviewed and changed by joint negotiations.
4. The counselor must not disclose any information about the client to colleagues or third parties without first seeking consent of the client.
5. The counselor must treat with confidence personal information about clients whether obtained directly or indirectly or by inference. It is good practice to avoid identifying specific clients during counseling supervision, consultative support and other consultations, unless there are sound reasons for doing so.
6. The counselor must make provisions for maintaining confidentiality in the storage and disposal of client records
7. The counselor may break the agreement about confidentiality only if there are sound reasons:
 - Believing that the client will cause serious physical harm to him/herself or to other persons, or have harm caused to him/her.
 - Believing that the client is no longer able to take responsibility for his/her decisions and actions.
8. The decision to break confidentiality agreed between a counselor and client should be made only after thorough consultation with a counseling supervisor or an experienced counselor. There are only two situations where disclosure of information on one's HIV status may be allowed:
 - Where a court orders the disclosure of such information
 - In a situation where the person with HIV continues to behave in a way that presents a clear threat to identifiable individual/individuals' life/lives

Counselors may take an oath of Confidentiality which should specifically state that they should:

- Not disclose any identifying information about their clients without the client's written permission

- Take reasonable steps to ensure that a client’s record is only identifiable to the individual client.
- Destroy records no longer required for services being offered.
- Ensure the security of records and prevent access to them by all uninvolved in the services being offered.
- Takes steps to ensure that colleagues, staff and trainees understand and respect the need for confidentiality in the counseling services.

Respect for Peoples` Rights

Counselors must recognize the fundamental rights, dignity and worth of all people. Counselors like any other health professionals are expected to provide service to a people irrespective of their race, culture, religion, and values and belief systems.

Counseling is NOT pushing people to conform to certain “acceptable” standards to live by. Instead counseling is a process whereby clients are challenged to honestly evaluate their own values and then decide for themselves in what ways they will modify these values and their behaviour. Effective counseling must therefore take into account the impact of culture on the client’s perception of the world. Specifically they should.

1. Be aware of cultural and role differences of gender, race, ethnicity, religion, sexual orientation, disability and socio-economic status.
2. Be aware of personal prejudices/biases of the above human differences; and not to allow these to interfere with the counseling process.
3. If cultural and role differences of gender, race, ethnicity, religion, sexual orientation, disability and socio-economic status interfere with the counseling in any way it is important to refer client to another counselor.

4. Do not participate in or condone any discriminatory practices based on the above human differences.
5. The counselor should see to it that the client suffers no physical or psychological harm during counseling.
6. The counselor must strive to promote the client's control over their own lives, and respect the clients' ability to make decisions and change in the light of their own beliefs and values

Personal Conduct

Counselors must conduct their counseling activities in a way that does not damage the interests of their clients or undermine public confidence in the service or their colleagues. Specifically they should:

1. The counselor must maintain respect for the client in the counseling relationship by avoiding engaging in activities that seek to meet the counselor's personal needs at the expense of that client. not attempt to secure financial or other benefits other than that contractually agreed or awarded by salary
2. They should not exploit any counseling relationship for the gratification of personal desires. Sexual harassment, unfairness, discrimination, stigmatization, and derogatory remarks must be avoided
3. Refrain from counseling when their physical or psychological condition is impaired through the use of alcohol or drugs or when ill such that the counselor's professional judgment and abilities are impaired.
4. Appear professional and presentable in dress and manner
5. Be clearly identified with badge containing name, professional status and facility.
6. The counselor is responsible to the community and should be aware of the law governing counseling in the community and also make sure that he/she works within the law.

Integrity

1. Counselors must seek to promote integrity through honesty, fairness and respect for others. Specifically they should avoid improper and potentially harmful dual relationships with clients.
2. They should not engage in a personal or sexual relationship with current clients.
3. They should not accept to counsel clients with whom they have engaged in former sexual relations or with whom they have a current personal relationship.

4. They should not engage in any relationship (including counseling) with a client in another service facility.

Corrective/disciplinary measures

Counselors are also responsible for other counselors and must stand to correct others when they see them doing wrong things. The counselor has a responsibility both to the individual clients and to the institution within which the counseling service is performed to maintain high standards of professional conduct. All personnel involved in HIV counseling services should sign an oath of confidentiality. Corrective measures should be effected upon breach of this oath addition, further disciplinary actions is effected depending on the Code of Ethics that addresses issues related to termination of services, justification for termination, and the mechanisms for doing so.

CHAPTER 3:

APPENDIX 3.1

- **Niverapine**

NVP is a non-nucleoside reverse transcriptase inhibitor (NNRTI).

- It works by blocking reverse transcriptase, an enzyme that is required for the virus to reproduce.
- NVP prevents HIV from multiplying in the infected person's immune cells, thus controlling the infection and decreasing the amount of virus in the body.
- NVP is a very strong antiretroviral drug that is rapidly absorbed, does not require metabolism to its active form so it works immediately on HIV that is in the blood and inside cells, it crosses the placenta quickly, and it has a long half-life (lasts in the blood for a long time before it is metabolized).

Since mid 1999, we have known that NVP is effective in a very short regimen (2 doses) in reducing MTCT of HIV.

- This short NVP regimen is used for prevention of mother to child transmission of HIV that occurs around the time of labor and delivery.
- It will not prevent HIV transmission that occurs during pregnancy or after the first few weeks of breastfeeding.
- The NVP tablet taken at the onset of labor works by crossing the placenta and entering the baby's blood. When the baby is exposed to the virus from the mother, the NVP may prevent the virus from reproducing and infecting the baby's cells. In addition, the NVP reduces the viral load in the mother's blood and breast milk and may further decrease exposure.
- The infant dose of NVP is given to increase the level of NVP in the baby's blood to prolong its antiretroviral effect. The NVP given to the mother and baby stays in the blood for a long time and may last for up to 1-2 weeks.
- This NVP regimen will not have any treatment benefit for the mother or the baby (if already infected). It is solely to prevent the infection of the newborn around the time of birth.

- The effect of NVP will not last long enough to protect the baby during the entire time of breast-feeding.
- Some infants will be HIV infected even if they and their mothers took the Niverapine as directed.

Side effects:

- The known side effects that are associated with prolonged use of the drug include minor complaints of headache, fatigue, diarrhoea, nausea, dizziness, and fever but this are rarely seen in short regimen.
- Very rarely occurrences of serious, threatening, or even fatal skin rash or liver disease have been reported, usually when NVP is used in combination with other antiretroviral drugs for one month or more. However, there are no serious rashes or liver disease seen with the use of this 2 dose NVP regimen for PMTCT.
- Women with jaundice, symptomatic liver disease, or known underlying liver abnormalities should not receive NVP due to the potential exacerbation of any existing liver disease.

Dosage of Niverapine:

Niverapine regime consist of one niverapine tablet (200mg) for the mother at the onset of labour and one dose of Niverapine syrup (2mg/kg body weight) for the baby within 72 hours after delivery

- Although the use of NVP alone can prevent mother to child transmission, it cannot be used alone for the treatment of HIV infection due to development of resistance.
- The mother will be given one tablet (200 mg) of NVP at 34-36 weeks of pregnancy (or later if first visit to ANC is late) to take home with her and to keep safely until the onset of labor.
- It is important that the best possible estimate of gestational age is made using careful menstrual history and physical examination.
- If her NVP tablet gets lost, stolen, left at home, or anything happens to it, she should come immediately to the ANC to collect a replacement tablet and she should not wait until her next clinic visit.

- As soon as the woman starts labor, she should swallow the tablet and come to the hospital as soon as possible.
- If the mother is not sure about whether she is having labor and she is a primigravida, she should come immediately to the labor ward to be checked. If she is not a primigravida, she should take her tablet and then come to the hospital.
- In order to be sure that the woman understands when she should take her tablet, describe the signs and symptoms associated with the onset of labor to her.
- Signs and symptoms of labor include: bloody mucoid discharge, drainage of water (liquor), lower abdominal pain squeezing type, pains that come and go, may radiate to the back, increase in frequency, intensity, and duration over time, backache, and general discomfort.
- If the woman vomits her tablet within 30 minutes after taking her dose, she should make sure that she informs the midwife on duty in the labor ward so that she can receive a second dose. If she vomits after 30 minutes have passed, no additional dose is required.
- If the woman has taken the NVP tablet, but had false labor and did not deliver within 48 hours, she must receive a second NVP tablet from the labor ward staff to take home with her, which will be used when she starts labor again. Taking NVP is much more important than delivering in hospital.
- The baby should ideally receive the NVP within 72 hours after delivery.
- If the baby vomits the syrup within 30 minutes after taking the dose, the mother should make sure that she informs the midwife on duty so that the baby can receive a second dose. If the baby vomits after 30 minutes have passed, no additional dose is required.

APPENDIX 3.2

- **Triple antiretroviral Drugs (HAART) in Pregnancy**

Guidelines for anti-retroviral therapy and for initiation of therapy in pregnant HIV women should be the same as for the non pregnant adults. The woman's clinical virological and immunological status should be of primary importance in guiding treatment decision. However it must be realized that the potential impacts of such therapy on the foetus and infant is still unknown. Women who are in the first trimester of pregnancy and who are not receiving antiretroviral therapy may wish to consider delaying initiation of therapy until after 10-12 weeks of gestation, since this is the period of organogenesis. However this decision should be carefully considered and discussed between the health care provider and the patient and should include an assessment of the woman's health status and the potential benefit and risk of delaying initiation of therapy for several weeks. If clinical, virological or immunological parameters were such that therapy should be initiated in pregnant women, many doctors would disregard the gestation age.

The recommended first line combination regimen in Tanzania

This regimen is simple in terms of the number of pills and the frequency of therapy. It includes Zidovudine lamivudine and Niverapine.

Zidovudine (ZDV) 300mg twice daily (NRTI)

Lamivudine (3TC) 150mg twice daily (NRTI)

Nevirapine 200mg twice daily (NNRTI)

Combivir (ZVD + 3TC)

Adherence to antiretraviral Therapy.

Treatment of people living with HIV is for the rest of their lives. The ability of the patient to adhere to the regimen is essential for successful treatment. Excellent adherence has been shown to increase the likely hood of sustained virological control which is important for reducing HIV related morbidity and mortality. Some predictors of a good adherence to HIV medication have been identified, these include:

- Availability of emotional and practical life support.
- Ability of the patients to fit the medications into their daily routine.
- The understanding that poor adherence leads to resistance.
- The recognition that taking all medication doses is important.
- Feeling comfortable taking medication in front of people.
- Availability of a clinic capable to monitor the treatment.
- Keeping clinic appointments.
- Being able to afford long terms continuous therapy.

NB: HAART in pregnancy is able to reduce MTCT up to 1%.

Changing Antiretroviral drugs.

Antiretroviral therapy should be stopped or changed when there is evidence of:

- Toxicity or intolerance to one or all drugs.
- Failure as evidenced by patient becoming symptomatic and progressive decline of CD4 count and/or rise of viral load despite of antiretroviral treatment.

When changing treatment the following should be observed.

- Never change a single drug in the combination if the cause of changing is treatment failure, but rather change at least two of the drugs.
- Never change to a single drug therapy.
- In selecting drugs choose drugs that have not been used before, drugs that do not have cross resistance, and have no overlapping toxicities or drug-drug interaction.

Recommended 2nd line combination in Tanzania.

This include Didanosine + Stavudine + Saquinovir

Contraindications (relative) of Antiretroviral drugs.

Antiretroviral should be avoided in the following condition.

- Terminal stage of HIV illness
- If compliance is doubtful

- In the first trimester of pregnancy
- Protease inhibitor should not be used during anti TB treatment when Rifampicin/Rifabutin are being used.

CHAPTER 4:

Strengthening promotion, protection and support of breastfeeding in the community should be supported to become baby friendly using the existing ten steps to successful breastfeeding.

APPENDIX 4.1 The Ten Steps to Successful Breastfeeding

All hospitals and facilities providing maternity services and care for newborn infants are expected to implement the following:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills to implement this policy
3. Inform all pregnant women about the benefits and management of breastfeeding
4. Help mothers initiate breastfeeding within half hour after birth
5. Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in, allow mother and infant to stay together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

APPENDIX 4.2 The CODE

Towards further promotion of breastfeeding WHO has published some aspects of the International code, which outline health's workers responsibility. Those aspects are:-

- There should be no advertising or other forms of promotion to the general public of breast milk substitutes and other products covered by the code, such as bottles and teats
- Mother should not be given sample (small amounts) of breast milk substitutes if HIV – positive mothers are given breast milk substitutes. They should be given a supply, that is, sufficient milk as long as their infants need it, (most likely the first 6 months)
- There should be no promotion of breast milk substitutes in the health services. This means that there should be no calendars, pictures or other items that show the brand name of formula, or bottles or teats. Cans of formula should be kept out of sight of breastfeeding mothers
- Company personnel should not advice mothers, or show them how to use breast milk substitutes
- Health workers should not accept gifts or free samples from companies
- Any information given to health workers form manufacturers should be scientific and factual.

APPENDIX 4.3: Estimation of the cost of cow's milk option

	Dar es Salaam	Mbeya	Singida
Milk @ 400 / 200 / 100 tsh per litre (90litres)	36,800	18,400	9,200
Sugar (6kg at 500Tsh per kg)	3000		
ABBIDEC syrup 2@ 2200	4400		
Iron syrup (3x 60ml bottles)	4000		
Soap	1500		
Fuel (10% of family costs)	Charcoal	8100	4000
	Kerosene	3400	
Thermos flask	2500		
TOTAL	55600 - 60300	37800	28600

Chapter 9.

Registers/Record forms for the monitoring of PMTCT

APPENDIX 9.1: PMTCT Tool 1: Antenatal Counselling Daily Register

Hospital name/ code number:

Date:

Counsellor's name:

Client's Reg. No.	District	Village	Balozi (Name)	Age	Wt (Kg)	Hb	Pre-test VC	Blood collected? (Y/N)	Post-Test VCC and Results	Clinical AIDS (Y/N)	HIV status +VE/-VE	Syphilis status +VE/-VE	Counselling for ARV	Counselling				Partner Involvement			
														For IF options	For IF choice EBF RF MF	For FP	For risk Reduction	Counselling	Test of the results (+VE/-VE)		

VCC – Voluntary Confidential Counselling

ARV – Antiretroviral drugs

IF – Infant feeding

FP – Family Planning

APPENDIX 9.2: PMTCT Tool 2: Labour, Delivery and Birth Register

Hospital name/code number:

Date	Client's Reg. No.	Number of ANC visits	Gestation age (wk.)	Age (yr)	Partner Notification	Clinical AIDS (Y/N)	Parity	Mode of delivery: 1. SVD, 2. C/S, 3. Assisted vacuum, 4. Assisted Breech	Episiotomy (Y/N)	AR M (Y/N)	Induction (Y/N)	Neonatal Outcome (D/A)	Maternal Outcome (D/A)	Cause of neonatal death	Cause of maternal death	ARV (Y/N)	Sex of baby (M/F)	APGAR Score	AR V baby (Y/N)	Chosen type of IF

APPENDIX 9.3: PMTCT TOOL 3: MOTHER FOLLOW UP

APPOINTMENT: CIRCLE APPROPRIATELY (POST PARTUM) 1WK 4WKS 6WKS

Month/ Duration: _____

Hospital name/code number _____

Client's registration number _____

1. Has any HIV related symptoms occurred?

1. Yes

2. No

If yes, specify: _____

2. Did the woman start any other antiviral therapy

1. Yes

2. No

If yes, specify antiviral agent _____

3. Did the woman start any modern contraceptives

1. Yes

2. No

If yes, specify _____

4. The woman is referred to community support/NGO

1. Yes

2. No

If yes, specify _____

5. What is she doing to reduce risks of infection

1. Abstinence

2. Being faithful

3. Condom use

6. Recurrent infection

1. Otitis media

2. Diarrhoea

3. Malaria

4. Pneumonia

5. Cough

6. Weight loss

7. Herpes zoster

8. Skin rash

9. Fever

10. UTI

APPENDIX 9.4: PMTCT TOOL 4: CHILD FOLLOW UP

APPOINTMENT: CIRCLE APPROPRIATELY (AGE)

1WK 4WKS 6WKS 3M 9M 12M 15M 18M

Month/ Duration: _____

Hospital name/code number _____

Client's registration number _____

1. Sex of the baby

- 1. Male
- 2. Female

2. Date of birth _____

3. Weight (Kg) _____

4. What type of feeding option are using?

- 1. Exclusive breast feeding
- 2. Infant formula
- 3. Mixed feeding
- 4. Cow's milk

5. What else are you feeding the child?

- 1. Water
- 2. Asali (honey)
- 3. Uji (porridge)
- 4. Fruit juices

5. Vegetable extracts
6. Others specify _____

6. Has the type of feeding chosen at birth changed?

1. Yes
2. No

If yes explain _____

7. Recurrent infection

1. Otitis media
2. Diarrhoea
3. Malaria
4. Pneumonia
5. Cough
6. Weight loss
7. Herpes zoster
8. Skin rash
9. Fever
10. UTI

8. Child death?

1. Yes
2. No

If yes, specify cause of death _____

9. Source of information on the cause of death

1. Hospital record e.g. death certificate
2. Verbal autopsy
3. Other, specify _____

10. HIV testing of infant at 15 months and 18 months.

1. HIV test at 15 months _____
2. HIV test at 18 months _____

Note that confirmation of HIV sero status will be 3 months after cessation of breast feeding.

References

Communicating Health by John Hubley An action guide to Health Education and Health Promotion. Published by Macmillan Education Ltd 1995.

Health Communication by Phillis Tilson Piotrow et al lessons from Family Planning and Reproductive health Published by Praeger Publishers 88 Port Road West, Westport CT 0688. USA

Health Education By Keith Tones and Slyvia Tilford, Effectiveness efficiency and equity. Second Edition. Published by Chapman & Hall 2 – 6 Bpundry Row London SE 1 811 UK.

Sultilak Smitasiri et al 1993 Social Marketing Vitamin A – Rich Foods in Thailand. A model Nutrition communication for behavioural change Published by Institute of Nutrition Mahidol University 1993.

International Vitamin A Consultative group (IVACG) September 1992. Nutrition Communication in Vitamin A programs (A resource book Published by IVCG USA).

FAO 1997 Agriculture Food and Nutrition for Africa. A resource book for teachers of Agriculture Published by FAO Publishing Management Group, Rome Italy.