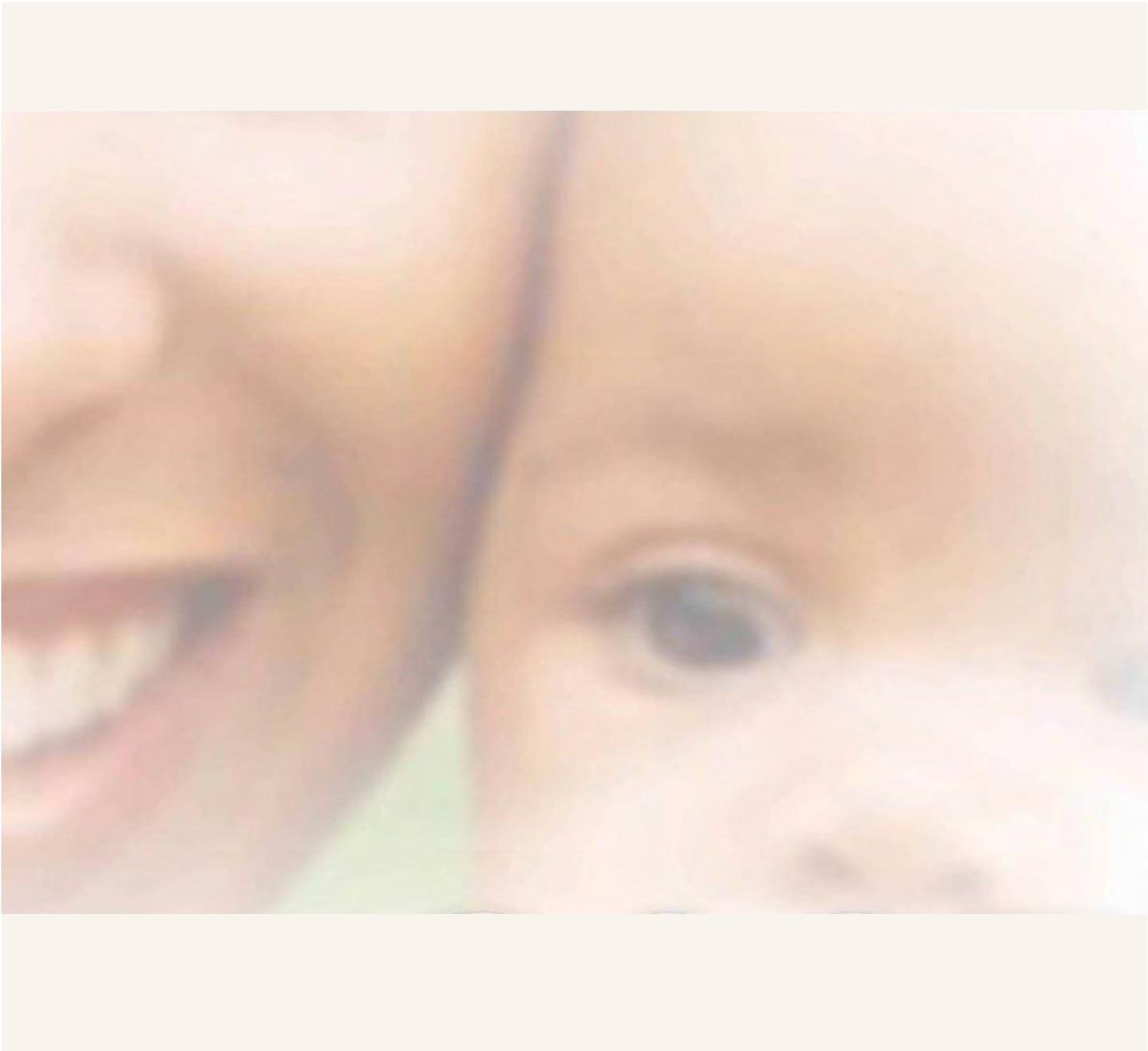




**Bahamas National Curriculum
for Prevention of Mother To Child
Transmission (PMTCT) of HIV**



Participant Handbook



**Bahamas National Prevention of
Mother-to-Child Transmission
(PMTCT)
Training**

Participant Handbook
April 2007

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Bahamas National PMTCT Training Agenda

Suggested Training Agenda

Day One

9:00 – 10:00	Welcome Opening Ceremony
10:00 – 10:30	Course Introduction
10:30 – 10:40	Break
10:40 – 11:30	Course Introduction (continued)
11:30 – 12:30	Module 1: Introduction to HIV
12:30 – 1:30	Lunch
1:30 – 3:30	Module 1: (continued)
3:30 – 3:40	Break
3:40 - 4:45	Module 2: Introduction to PMTCT (through slide 14)
4:45 – 5:00	Review/Questions

Day Two

8:30 – 8:45	Devotional and Review
8:45 – 10:30	Module 2: Introduction to PMTCT (continued)
10:30 – 10:40	Break
10:40 – 11:40	Module 2 (continued)
11:40 – 12:40	Module 3: PMTCT Interventions
12:40 – 1:40	Lunch
1:15 – 3:00	Module 3: (continued)
3:00 – 3:10	Break
3:10 – 4:45	Module 3 (continued)
4:45 – 5:00	Review/Questions

Day Three

8:30 – 8:45	Devotional and Review
8:45 – 10:30	Module 4: Adherence to Care and Treatment
10:30 – 10:40	Break
10:40 – 12:40	Module 4 (continued)
12:40 – 1:40	Lunch
1:40 – 2:20	Module 4 (continued)

2:20 – 3:30	Module 5: Infant Feeding
3:30 – 3:40	Break
3:40 – 4:45	Module 5 (continued)
4:45 – 5:00	Review/Questions

Day Four

8:30 – 8:45	Devotional and Review
8:45 – 10:35	Module 6: HIV Testing and Counselling
10:35 – 10:45	Break
10:45 – 11:45	Module 6 (continued)
11:45 – 12:45	Module 7: HIV Testing
12:45 – 1:45	Lunch
1:45 – 3:30	Module 8: Stigma and Discrimination
3:30 – 3:40	Break
3:40 – 4:45	Module 8 (continued)
4:45 – 5:00	Review/Questions

Day Five

8:30 – 8:45	Devotional and Review
8:45 – 10:30	Module 9: Continuum of Care for Women, Children & Families
10:30 – 10:40	Break
10:40 – 11:40	Module 9 (continued)
11:40 – 12:40	Module 10: Health Care Worker Safety
12:40 – 1:40	Lunch
1:40 – 3:00	Module 10 (continued)
3:00 – 3:10	Break
3:10 – 5:00	Module 11: Monitoring and Evaluation of PMTCT Programmes
5:00 – 5:30	Final Evaluation

Abbreviations and Acronyms

ACTG	AIDS Clinical Trials Group
AIDS	Acquired immunodeficiency syndrome
ANC	Antenatal care
ARV	Antiretroviral
ART	Antiretroviral therapy
AZT	Azidothymidine
BMS	Breast Milk Substitute
CARICOM	Caribbean Community
CMC	CARICOM Member Country
CDC	United States Centers for Disease Control and Prevention
CMV	Cytomegalovirus
DOT	Directly Observed Therapy
ELISA	Enzyme-linked immunosorbent assay
HAART	Highly active antiretroviral therapy
HCPs	Health Care Providers
HCWs	Health Care Workers
HIV	Human immunodeficiency virus
IMCI	Integrated management of childhood illness
L&D	Labour and Delivery
MAC	<i>Mycobacterium avium</i> complex

MCH	Maternal and child health
MTCT	Mother-to-child transmission of HIV
NGO	Non-governmental organization
NVP	Nevirapine
OI	Opportunistic infection
PACTG	Pediatric AIDS Clinical Trials Group
PCP	<i>Pneumocystis carinii</i> pneumonia
PCR	Polymerase Chain Reaction
PEP	Post-exposure prophylaxis
PGL	Persistent Generalized Lymphadenopathy
PLWHA	People living with HIV/AIDS
PMTCT	Prevention of mother-to-child transmission of HIV
SD	Single Dose
STD/I	Sexually transmitted disease/infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
UP	Universal Precautions
USAID	U.S. Agency for International Development
VCT	Voluntary Counselling and Testing

WHO	World Health Organization
WITS	Women and Infants Transmission Study
ZDV	Zidovudine, the generic name for azidothymidine (AZT)

Glossary of Terms

The definitions in this glossary were taken from the “Prevention of Mother-to-Child-Transmission of HIV Infection Generic Training Package, WHO/CDC/FXB/JHPIEGO, November 2004 and are available at: <http://www.womenchildrenhiv.org/wchiv?page=pi-60-00#S1X>

Glossary

Acquired immunodeficiency syndrome (AIDS) **A:** Acquired, (not inherited) to differentiate from a genetic or inherited condition that causes immune dysfunction
I: Immuno-, because it attacks the immune system and increases susceptibility to infection
D: Deficiency of certain white blood cells in the immune system
S: Syndrome, meaning a group of symptoms or illnesses as a result of the HIV infection

AIDS is the most advanced stage of HIV infection.

Acute illness An illness, such as pneumonia, that begins suddenly and usually is of short duration. Many acute illnesses can be cured by medical treatment.

AIDS See Acquired Immunodeficiency Syndrome.

Anaemia A condition in which there is a low blood level of red blood cells, haemoglobin, or in total volume.

ANC See Antenatal Care.

Antenatal care (ANC) Care of a pregnant woman and her unborn child or foetus before delivery.

Antibiotic A medicine that kills infection-causing organisms.

Antibody A specialized serum protein produced by B lymphocytes in response to an exposure to foreign protein (antigen).

Antigen A substance that can trigger an immune response causing the production of antibodies as part of the body's defense against infection and disease.

ARV See Antiretroviral Drugs, Antiretroviral Prophylaxis, Antiretroviral Treatment.

Antiretroviral prophylaxis	Short-term use of antiretroviral drugs to reduce HIV transmission from mother to infant.
Antiretroviral treatment	Long-term use of antiretroviral drugs to treat maternal HIV/AIDS and prevent PMTCT.
Asymptomatic	Without symptoms of illness or disease.
Bacterium	A type of germ that causes infection.
Bloodborne pathogen	Microorganisms, such as viruses or bacteria, that are carried in blood and can cause disease.
Breastmilk substitute (BMS)	Any food being marketed or otherwise represented as a partial or total replacement for breastmilk, whether or not suitable for that purpose. A breastmilk substitute can be commercial infant formula or home-modified animal milk.
CD4 cells	T-lymphocyte cells in the immune system involved in protection against infections. When HIV actively multiplies, it infects and kills CD4 cells.
CD4 count	A test that measures the number of CD4 cells in the blood, thus reflecting the state of the immune system. A normal count in a healthy adult is 600–1200 cells/mm ³ . When the CD4 count of an adult falls below 200 cells/mm ³ , there is a high risk of opportunistic infection.
Cell	The basic unit of living matter.
Cessation of breastfeeding	Completely stopping breastfeeding, including suckling.
Chorioamnionitis	Inflammation of the membranes covering the foetus.
Chronic illness	Any persistent medical condition that can be managed but not cured with treatment.
CMV	See Cytomegalovirus.
Codex Alimentarius Commission	Created in 1963 by Food & Agricultural Organization (FAO) and WHO to develop food standards, guidelines and other information including practice guidelines under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting consumers health and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organisations.

Combination ARV therapy	Use of three or more antiretroviral medications to more effectively combat HIV disease and suppress viral load.
Commercial infant formula	Breastmilk substitute formulated industrially in accordance with applicable Codex Alimentarius standards to satisfy the nutritional requirements of infants during the first months of life up to the introduction of complementary foods.
Complementary food	Any food, whether manufactured or locally prepared, used as a complement to breastmilk or to a breast-milk substitute. In general, complementary foods should not start before the age of 6 months.
Counselling	The confidential dialogue between individuals and their care providers. The term <i>counselling</i> can refer to discussions between healthcare workers and clients/patients specific to HIV testing to help clients examine their risk of acquiring or transmitting HIV infection.
<i>Cryptococcus</i>	A fungal organism that infects the central nervous system (brain and spinal cord) causing cryptococcal meningitis. Some of the symptoms include fever, headache, vomiting, and loss of appetite. A serious opportunistic infection in persons living with HIV/AIDS.
Cryptosporidium	An organism that infects the intestines (gut). Some of the symptoms include diarrhoea, pain, and weight loss.
Cup feeding	Being feed from or drinking from an open cup irrespective of its contents.
Cytomegalovirus (CMV)	A virus that infects systems of the body. Some of the signs and symptoms include pneumonia, retinitis, diarrhoea, and other problems.
DNA PCR	HIV DNA polymerase chain reaction (PCR) is a laboratory test to detect the presence of the virus in the blood. It is used for diagnosis of the infant less than 18 months.
Dehydration	Loss of fluid from body tissues.
Diarrhoea	Frequent loose and watery bowel movements often caused by bacteria, parasites, and drug use. People with HIV commonly develop diarrhoea , which can lead to wasting.
Disclosure	Sharing of HIV status with others. Most people believe that disclosure of HIV infection should be encouraged. Yet many people infected with HIV avoid disclosing their HIV status for fear that doing so will subject them to unfair treatment and stigma. Benefits of disclosure include: encouraging partner(s) to be HIV tested; preventing the spread of HIV to partner(s); and receiving support from partner(s), family, and/or friend(s).

Discrimination	An act or behaviour based on prejudice. Discrimination is a way of expressing, either on purpose or inadvertently, stigmatising thoughts.
Disinfection	Elimination of most or all microorganisms other than bacterial spores, accomplished by the application of liquid chemicals or by wet pasteurisation (75°C for 30 minutes after detergent cleaning).
ELISA	See Enzyme Linked Immunosorbent Assay.
Encephalopathy	Degeneration (failing) of the brain that causes decreased functioning in activities of daily living and progresses over weeks or months.
Enzyme	A protein that helps promote biochemical reactions but that is not affected by them.
Enzyme Linked Immunosorbent Assay (ELISA)	A laboratory assay (test) to identify the presence of HIV antibodies in body fluids. A positive ELISA test result is usually confirmed by another test such as a second ELISA or a test called the Western blot.
Epidemic	A disease affecting or tending to affect a disproportionately large number of individuals within a population, community, or region at the same time.
Evaluation	A measurement of the changes in a situation resulting from an intervention. A <i>formal evaluation</i> of a PMTCT programme will demonstrate how much it contributed to changes in the indicators.
Exclusive breastfeeding	Providing breastmilk only (including expressed breastmilk), and no other food or drink, including water. The only exceptions are drops or syrups consisting of vitamins, mineral supplements, or medicines.
Failure to Thrive (FTT)	Weight loss or gradual but steady deterioration in weight gain from the expected growth, as indicated in a child's growth card.
Fungus	A germ that can cause infection, including a yeast infection such as thrush. Fungal infection occurs commonly in those with weakened immune systems, including AIDS.
Germ	Organisms, including bacteria, viruses, and fungi, that can cause infection.
Haematocrit	The percentage of red blood cells in the blood.
Haematologic	Relating to blood.
Haemoglobin	A protein found in red blood cells that carries oxygen.
Healthcare provider	A doctor, nurse, midwife, programme manager, or others whose activities include working directly with patients or clients in a healthcare setting. Also referred to as healthcare worker.
Helminth infection	Intestinal disease caused by wormlike parasites.

Hepatic	Relating to the liver.
Hepatitis	Inflammation of the liver that may be caused by bacterial or viral infection, parasitic infestation, alcohol, drugs, toxins, or transfusion of incompatible blood.
Hepatomegaly	Swollen or enlarged liver.
Herpes	A virus that causes sores in the mouth, on the genitals, or elsewhere on the body.
Highly Active Antiretroviral Therapy (HAART)	Stands for the use of at least three ARV drugs in combination to suppress viral replication and progression of HIV disease by reducing the viral load to undetectable levels.
HIV rapid test	A simple test for detecting HIV antibodies in blood or other body fluids that produces results in less than 30 minutes.
Home care	The provision of treatment and care in the home of the person living with HIV/AIDS.
Home-prepared formula	Replacement food (or breastmilk substitute) prepared at home from fresh or processed animal milk, suitably diluted with water and amended with sugar and micronutrients.
Human immunodeficiency virus (HIV)	Human immunodeficiency virus, the virus that causes AIDS. HIV breaks down the body's defence against infection and disease—the body's immune system—by infecting specific white blood cells, leading to a weakened immune system. It is transmitted through blood, blood products, semen, vaginal fluids, and breastmilk.
Immune system	A collection of cells and proteins that works to protect the body from potentially harmful, infectious microorganisms, such as bacteria, viruses and fungi.
Immunization	Vaccination to protect against a specific infection by injecting a weakened or killed form of a disease-causing organism into the body to activate the body's immune response without causing the full-blown disease. Currently there is no vaccine or immunization to protect against HIV.

Immuno-compromised	Having a weak or damaged immune system as measured by a low CD4 count. Also, see Immunosuppressed.
Immuno-suppressed	When the body's immune function is damaged and incapable of performing its normal functions. Immunosuppression may occur due to certain drugs (e.g., in chemotherapy) or because of certain diseases such as HIV infection.
Implementation	The specific steps taken when attempting to reach a specific goal, is known as "implementation." The implementation phase occurs after goals have been set and a strategy has been agreed upon.
In utero	Refers to events that occur in the uterus (womb) during pregnancy.
Indicators	Summary measures used to describe a situation. They provide information on the status of activities related to each step of the PMTCT programme cycle.
Infant who is HIV-exposed	Infant born to a mother infected with HIV and exposed to HIV through pregnancy, in childbirth, or during breastfeeding.
Infection	Invasion and growth of germs in the body.
Integrated Management of Childhood Illness (IMCI)	An approach to management of child health, developed by WHO and UNICEF, that focuses on the well-being of the whole child. IMCI aims to reduce death, illness, and disability, and to promote improved growth and development among children younger than 5 years.
Intervention	An action or strategy to address a particular problem or issue and to accomplish a specific result.
Intrapartum	Occurring during labour and delivery (childbirth).
Lymphadenopathy	A swelling of the lymph glands in the body. The most common areas of swelling with HIV infection are the neck, under the arms, and in the groin. Also called swollen glands.
Lymphocyte	A type of white blood cell produced in the lymphoid organs that is primarily responsible for immune responses. Present in the blood, lymph and lymphoid tissues.
MAC	See <i>Mycobacterium Avium Complex</i> .
Malaria	An infectious disease characterized by cycles of chills, fever, and sweating, caused by a parasite transmitted by a host mosquito.
Medication adherence (adherence to treatment)	Taking medicine exactly as recommended by a healthcare provider without missing doses.

Monitoring	Routine tracking of information or indicators about a programme and its intended outputs through record keeping and regular reporting. Also called performance monitoring.
Mother-to-child transmission (MTCT) of HIV	Transmission of HIV from a woman infected with HIV to her child during pregnancy, childbirth, and breastfeeding. Also referred to as vertical transmission or perinatal transmission.
MTCT	See Mother-to-Child Transmission.
Mycobacterium Avium Complex	Organisms that invade the intestines (gut) and other organs.
Neutrophil	A type of white blood cell that kills foreign organisms such as bacteria and fungus.
Neutropoenia	Low neutrophil count in the blood that is associated with HIV infection.
OI	See Opportunistic Infection.
Oesophagitis	An infection or inflammation of the oesophagus.
Opportunistic infection (OI)	A disease caused by a microorganism that does not normally cause illness in a person with a healthy immune system, but that may cause serious disease when the immune system is weakened.
Oral thrush	A fungal infection of the mouth that looks like white patches or curdled milk.
Output indicators	Evidence of programme results, such as the number of people trained.
Pandemic	A disease occurring over a wide geographic area and affecting an exceptionally high proportion of the population ie, malaria, HIV.
PCP	See <i>Pneumocystis Carinii</i> Pneumonia.
PCR	See Polymerase Chain Reaction.
PEP	See Post-Exposure Prophylaxis.
Perinatal transmission	See Mother-to-Child Transmission of HIV; Also known as vertical transmission.
Platelet	A type of blood cell (thrombocyte) that facilitates blood clotting. Also see Thrombocytopenia.

PMTCT	Prevention of mother-to-child transmission of HIV.
<i>Pneumocystis Carinii</i> Pneumonia (PCP)	A severe, life-threatening lung infection that causes fever, dry cough, and difficulty breathing.
Polymerase Chain Reaction (PCR)	A viral assay (test) that detects the presence or the amount of a virus in the blood. For HIV, the DNA-PCR indicates the presence of the virus. The HIV RNA-PCR measures the amount of virus, often referred to as the viral load.
Post-exposure prophylaxis (PEP)	<p>Short-term use of ARV drugs following occupational HIV exposure such as a percutaneous injury (eg, a needlestick or cut with a sharp object) or contact of mucous membrane or nonintact skin (eg, exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids containing visible blood to reduce the likelihood of infection.</p> <p>PEP is a key part of a comprehensive Universal Precautions strategy for reducing exposure to infectious agents in the workplace.</p>
Postnatal care	Care for a mother and infant in the 6 weeks following birth. Postnatal care is vital for ensuring that mother and child remain healthy and should include prevention, early detection, and treatment of complications and disease. Guidance and support of infant feeding and maternal nutrition, family planning, childhood immunizations and referrals to needed services provide continuity of care.
Prenatal care	See Antenatal Care.
Prevalence	The percentage of a population that is affected with a particular disease at a given time.
Programme cycle	Process of assessing a situation and then planning, implementing, monitoring and evaluating a responsive public health programme.
Prophylaxis	<p>Treatment to prevent the onset of a particular disease (primary prophylaxis) or recurrence of symptoms in an existing infection that has been brought under control (secondary prophylaxis).</p> <p>PMTCT prophylaxis refers to using antiretroviral drugs to reduce HIV transmission from mother to infant.</p>

Replacement feeding	The process of feeding infants who are receiving no breastmilk with a diet that provides the nutrients infants need until the age at which they can be fully fed on family foods. During the first six months, this should be with a suitable breastmilk substitute such as commercial formula, or home-prepared formula with micronutrient supplements. After six months, the suitable breastmilk substitute should be complemented with other foods.
Replicate	To duplicate or make more copies of something.
RNA PCR	HIV RNA polymerase chain reaction, also called viral load testing, detects and measures the amount of virus in blood.
Safer sex	Ways to have sex that reduce the risk of acquiring or transmitting HIV and other STDs such as use of a latex condom or other barrier. See Unprotected Sex.
Seropositive	A blood test result that indicates infection. A test can indicate the presence of antibodies to an organism (antibody positive) or the presence of the organism or its proteins (antigen positive).
Sexually Transmitted Diseases/ Infections (STD/STI)	Diseases that people get by having intimate sexual contact, including having sex (vaginal, oral, or anal intercourse) with someone who already has the disease. There are many different kinds of STDs including herpes, HIV, and syphilis. All STDs are preventable.
Side effect	Unintended action or effect of a medication or treatment.
Specificity	The ability of a test to correctly exclude individuals who do not have a given disease or disorder. For example, a certain HIV test may have proven to be 90% specific. If 100 healthy individuals are tested with that method, only 90 of those 100 healthy people will be found “negative” or disease-free by the test. The other 10 people also do not have the disease, but their test results seem to indicate they do. For that 10%, their “positive” findings are a misleading false-positive result. When it is necessary to confirm a diagnosis that requires therapy, a test’s specificity is one of the important indicators. The more specific a test is the fewer “false-positive” results it produces.
Splenomegaly	Inflamed or enlarged spleen.
STDs/STIs	See Sexually Transmitted Diseases/Infections.
Sterilisation	Completely eliminating or killing all microorganisms by application of steam under pressure, dry heat, or ethylene oxide and other gases, or by soaking in other liquid chemicals for prolonged periods.

Stigma	Refers to all unfavourable attitudes and beliefs directed toward people living with HIV/AIDS (PLWHA) or those perceived to be infected, as well as their significant others and loved ones, close associates, social groups, and communities.
Symptomatic TB	Showing signs of illness or disease. See Tuberculosis.
Thrombo-cytopenia	An abnormally low number of platelets (thrombocytes) due to disease, reaction to a drug or toxic reaction to chemotherapy treatments. If the platelets are too few, bleeding could occur.
Tuberculosis (TB)	A contagious bacterial infection that damages the lungs and other parts of the body. TB is a respiratory illness and is mainly transmitted through coughing. The most common and serious co-infection and OI related to HIV/AIDS.
Universal precautions	A simple set of effective practices designed to protect health workers and patients from infection with a range of pathogens including blood borne viruses. These practices are used when caring for all patients regardless of diagnosis.
Unprotected sex	The exchange of blood, semen and/or vaginal fluids that occurs during sexual activity when condoms and other barrier methods such as latex or polyurethane are not in use.
Vertical transmission	See Mother-to-Child Transmission of HIV.
Viral load	The amount of HIV in the blood as measured by HIV RNA PCR.
Viral resistance	Changes in the genetic makeup of HIV that decrease the effectiveness of antiretroviral drugs. Usually occurs in response to drug treatment especially when there is incomplete treatment or poor adherence to appropriate treatment.
Virus	A type of germ that causes infection.
Wasting (syndrome)	Condition characterized by loss of more than 10% of body weight and either unexplained chronic diarrhoea (lasting more than 1 month) or chronic weakness and unexplained, prolonged fever (lasting more than 1 month).
Western blot	A laboratory test for specific antibodies to confirm repeatedly reactive results on the HIV ELISA test. Western blot is the validation test used often for confirmation of other test results.

Wet-nursing

Breastfeeding of an infant by someone other than the infant's mother.

Window period

The period of time between the onset of infection with HIV and the appearance of detectable antibodies to the virus. The window period lasts for 4 to 6 weeks but occasionally up to 3 months after HIV exposure.

**Bahamas National Prevention of
Mother-to-Child Transmission
(PMTCT)
Training**

Participant Handbook

Section Two
About This Course

I. What will I learn in this course?

The aims of the course are to equip Health Care Providers (HCPs) with sufficient knowledge to be able to care for pregnant women with HIV and their babies, and to demonstrate the benefit of Antiretroviral Therapy (ART) in reducing the risk of Mother to Child Transmission (MTCT) of HIV infection and caring for mothers and families.

At the end of the course, it is expected that participants will be able to:

- Describe specific interventions to prevent HIV transmission to infants
- Describe the role of HCPs in promoting optimal health for mother and baby
- Develop a plan to integrate the Prevention of Mother to Child Transmission of HIV into antenatal care (ANC) with strong links to comprehensive HIV care services
- Acknowledge the skills and compassion we share with our patients and co-workers each and every day.

The workshop that you are attending is a pilot. Revisions will be made to the curriculum based upon your experiences and feedback.

II. How is this course organized?

The design of this course reflects the fact that participants are professional health workers who are well-qualified and have experience in the field of HIV/AIDS. A variety of approaches to teaching and learning will be adopted, with the underlying assumption that participants are adult learners who will take considerable responsibility for their own learning. The focus will be on experiential learning and should emphasize the key knowledge and skills needed for HCPs serving pregnant women with HIV and their babies.

The course consists of a five-day facilitator-led program. It is comprised of 11 modules and includes the following teaching/learning methods:

- lecture
- case studies
- role plays
- large and small group discussions
- small group work and discussions
- trigger tape videos

A unique feature of this curriculum is the inclusion of a case study that follows a family through several modules. We first meet Bernice when she comes into the clinic with what she thinks is the flu. At that point her HIV antibody test is negative. We meet Bernice again, when she is tested for HIV for a 2nd time because she and Albert are pregnant. This time, her test is positive. We follow Bernice through her pregnancy, the birth of her baby Hope, and a follow-up visit in various sessions throughout the workshop. The case study provides an opportunity for you to consider how you will apply theoretical knowledge and skills that you acquire in the classroom in a real-life clinical situation.

On the average, sessions will last between 1 and 4 hours. You will receive a morning, lunch, and afternoon break.

The knowledge and skills that participants bring to the course are important to the learning process and participants are encouraged to share this knowledge and skills and to raise issues that they find challenging in their practice.

III. What ground rules are used during the training course?

To help ensure that time spent at the training is both productive and enjoyable, there are some rules and procedures that we ask participants to follow. The following information includes details on general procedures for the course and requirements for completion of the course. These ground rules are not meant to constrain participants but to contribute to a quality learning environment for everyone.

A. Identifying Expectations

At the beginning of the course, the facilitator will ask participants what they expect to learn from the course. This information will be recorded on flip chart paper and displayed for the duration of the course. The facilitator will identify which expectations are within the description of the course and which fall outside. This will help participants understand what the course will and will not cover.

B. Determining Group Norms

It is important for course participants to establish and commit to their own group norms on the first morning of the course. Lead a brief brainstorming exercise at the beginning of the course to establish group norms. The following are examples of group norms:

- Respect each other's confidentiality
- Respect each other's contributions, questions, and opinions
- Be on time
- Participate fully in discussions and exercises
- If you must leave a session early, please inform the Course Director or facilitator for that session before the session begins
- Turn off mobile phones

IV. How will this course be evaluated?

Three methods will be used to evaluate participant learning and the usefulness of the course.

A. Pre & Post-Tests

An anonymous pre-test and post-test will enable course coordinators to evaluate the transfer of knowledge. Participants will be provided 15-30 minutes at the beginning of day-one to complete the pre-test, and the same amount of time at the end of day five to complete the post-test. Time permitting, answers to the assessment will be

reviewed together as a group and/or distributed to participants as take-home materials. The Pre/Post Tests are included in Section 1 of this Handbook

B. Daily Session Evaluations

Participants will be asked to complete an anonymous Daily Evaluation form at the end of each day to assess the content and delivery for the sessions delivered that day. Fifteen minutes will be provided at the end of each day for participants to complete the form.

C. Final Written Evaluation

Participants will be asked to complete an anonymous written Final Evaluation at the end of the course. This form asks participants to assess what they learned, how useful the course was, how they will apply what they learned in their work, and to make suggestions for how to improve the course.

V. How do I use this Participant Handbook?

The Participant Handbook was developed to assist you and enhance learning as you participate in the course. The handbook contains the following information:

- Training Schedule
- Glossary of Terms
- Abbreviations and Acronyms
- Pre-Test
- Post-Test
- Information About this Course
- Module Outlines
- Handouts
- Worksheets
- Copies of PowerPoint Slides

Refer to the Participant Handbook frequently throughout the course. The facilitators will refer to it during each course module.

VI. How can I learn most effectively in this course?

There are five important things that you can do as a participant to help create an effective learning atmosphere for yourself, all course participants, and facilitators.

A. Help to build an atmosphere of trust and support

One of the best ways to help build an atmosphere of trust and support is to listen thoughtfully to the ideas of other participants and provide constructive feedback that will help improve the learning for everyone. Let someone know if they've said or done something that you like. And help a fellow participant or facilitator if you see he or she is having a challenging moment. The best learning takes place in a humane environment; help us to build one!

B. Maintain a positive attitude

There will be times during the course when you might say to yourself, “I’m so tired!” That’s okay to say because you will be working hard and expending a lot of energy learning new things. But try to stay positive and productive as you participate in each session. Negativity does not support a quality learning environment.

C. Contribute to the learning of others

Participants are the most valuable resource in a training course. They help each other learn through sharing relevant work experiences and providing different perspectives. If you see yourself and your fellow participants as resources, you will learn so much more than if you rely solely on the course facilitators for learning the course content. Ask other participants questions, engage them in conversation, and consider sharing relevant examples from your own work experience.

D. Participate actively

A common assumption is that an active participant in a training course is someone who talks a lot. Not true! Participating actively actually requires more listening than talking. Looking at an individual as they are speaking, nodding your understanding, or using facial expressions that indicate “I’m listening” are active forms of listening.

Another way to actively participate in this training course is to contribute ideas during group exercises, answer questions posed by the facilitators and ask your own questions of participants and facilitators. In short, participating actively means that it is apparent to others that your brain is on and attentive to each session’s activities.

D. Provide useful feedback at the end of the day

Because we believe that your perspective about how this course is progressing is crucial, we will ask you to give us feedback on each day’s session. Your enjoyment, learning and understanding of the day’s content will be the focus of this feedback and should not take you long to complete. Please do provide us with this feedback so that we can monitor and evaluate the progress of the course. Thank you!

Course Overview and Introduction



Total Module Time: 70 minutes (1 hour, 10 minutes)

Objectives: By the end of this session, participants will be able to:

- Describe the rationale and goals of the course
- Understand the structure and organisation of the course.
- Become acquainted with the trainers and participants in the course.
- List the ground rules for the course.
- Establish an environment of trust and respect

Slide 1	<p style="text-align: center;">PMTCT Course Introduction</p> <p>Module 1: Course Introduction 1</p>	
Slide 2	<p style="text-align: center;">Session Objectives</p> <ul style="list-style-type: none"> • Review the goals and objectives of the national PMTCT course • Understand the structure and organisation of the course. • Become acquainted with the trainers and participants. • List the ground rules for the course and establish an environment of trust and respect. • Assess concerns, expectations and personal strengths of the group <p>Module 1: Course Introduction 2</p>	
Slide 3	<p style="text-align: center;">Course Goal</p> <ul style="list-style-type: none"> • To equip health care providers (HPC) with sufficient knowledge and basic skills to care for pregnant women with HIV and their infants. • To demonstrate the benefit of antiretroviral therapy (ART) in reducing the risk of mother to child transmission of HIV (MTCT) and caring for mothers and families <p>Module 1: Course Introduction 3</p>	
Slide 4	<p style="text-align: center;">Course Objectives</p> <ul style="list-style-type: none"> • To provide healthcare providers with the information and introductory skills necessary to deliver core PMTCT services in an integrated manner, including the prevention of HIV; prevention of transmission from mother-to-child; provision of treatment and care to HIV-infected women, children and their families • Increase the capacity of HCP's through training to deliver optimal care to women with HIV and their infants and families • To facilitate the reduction of HIV-related stigma and discrimination and promote community linkages by empowering the healthcare provider to collaborate with community agencies and services <p>Module 1: Course Introduction 4</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 5</p>	<p style="text-align: center;">Course Structure</p> <ul style="list-style-type: none"> • Format: <ul style="list-style-type: none"> – 5 full days – 11 Modules – Interactive, adult learning – Didactic (lectures) • Two main documents: <ul style="list-style-type: none"> – Facilitator manual – Participant manual • Note: Accompanying PowerPoint slides integrated into text <p style="font-size: small;">Module 1: Course Introduction 5</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 6</p>	<p style="text-align: center;">Bahamas National PMTCT Curriculum</p> <ul style="list-style-type: none"> • Course Introduction • Module 1: Introduction to HIV/AIDS • Module 2: Introduction to PMTCT • Module 3: PMTCT Interventions/ARV Prophylaxis • Module 4: Adherence in HIV Care • Module 5: Infant Feeding • Module 6: HIV Testing • Module 7: HIV Counseling and Testing • Module 8: Stigma and Discrimination • Module 9: Continuum of Care for Women, Children, Families • Module 10: Healthcare Worker Safety • Module 11: Monitoring and Evaluation <p style="font-size: small;">Module 1: Course Introduction 6</p>	<ul style="list-style-type: none"> • This training curriculum is an evidence-based course on PMTCT specifically designed for the Bahamas. It reflects national policies and priorities for combating MTCT and HIV/AIDS. • Still, it is an introductory course and further training in specific areas of interest is recommended depending on your role. For instance, additional training is available in HIV counselling and testing and comprehensive HIV care with a focus on antiretroviral therapy. • One limitation of this course is that it does not provide clinical training. Hands-on clinical training, whether on-site or off-site, is recommended to get maximum benefit from this course.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 7</p>	<p style="text-align: center;">Target Audience</p> <ul style="list-style-type: none"> • Nurses • Midwives • Physicians • Social workers • Outreach workers • Counsellors • Community health workers • Programme managers <p style="font-size: small;">Module 1: Course Introduction 7</p>	<ul style="list-style-type: none"> • This training course is targeted to staff working in (or intending to work in) PMTCT programmes or healthcare settings that provide PMTCT services • There is no substitute for hands-on experience when providing both clinical and social support. All participants are encouraged to view this course as providing a foundation on which to build and develop additional skills. • This can be done through specialised training in areas such as HIV counselling or infant feeding. Many of these skills require practise to develop proficiency, and participants can benefit by actively seeking opportunities to increase their comfort with all aspects of programme implementation.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 8</p>	<p style="text-align: center;">Introductions</p> <ul style="list-style-type: none"> • Please share with us: <ul style="list-style-type: none"> – Concerns: What concerns or worries do you have about taking care of women and children and families with HIV/AIDS? – Expectations: What do you hope to learn from this course? – Strengths: What two personal strengths do you bring to your work as a healthcare worker? <p style="font-size: small;">Module 1: Course Introduction 8</p>	

Slide 9	<h3>Introductions</h3> <ul style="list-style-type: none"> • Please share with us: <ul style="list-style-type: none"> – NAME – PLACE OF EMPLOYMENT – ROLE • PLUS <ul style="list-style-type: none"> – A Concern – An Expectation – A Strength <p style="font-size: small;">Module 1: Course Introduction 9</p>	
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Slide 10	<h3>Ground Rules</h3>  <p style="font-size: small;">Module 1: Course Introduction 10</p>	
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Slide 11	<h3>Feedback? Questions?</h3> <ul style="list-style-type: none"> • Anonymous Question Bowl • Parking Lot <p style="font-size: small;">Module 1: Course Introduction 11</p>	
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Slide 12	<h3>PMTCT PRE-TEST</h3> <p style="font-size: small;">Module 1: Course Introduction 12</p>	
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Slide 13	<p style="text-align: center;">Key Points</p> <ul style="list-style-type: none"> • We have a lot more information about the PMTCT course and what is expected of us • We are aware of the concerns, expectations and strengths of our colleagues • We have ground rules to ensure a productive learning environment • We have collectively assessed our knowledge about HIV and PMTCT <p><small>Module 1: Course Introduction</small> <small>13</small></p>	
Slide 14	<p style="text-align: center;"><i>We have a lot to share with others and we have a lot to cover but remember:</i></p> <p style="text-align: center;">Ask questions We are here for you!</p> <p><small>Module 1: Course Introduction</small> <small>14</small></p>	

Module 1 Introduction to HIV/AIDS



Total Module Time: 180 minutes (3 hours)

Objectives: By the end of this session, participants will be able to:

- Describe the global, regional and local impact of HIV/AIDS on women, children and families
- Explain the difference between HIV and AIDS
- Discuss the natural course of HIV infection
- Describe the relationship between viral load and CD4+ T cell count in monitoring and managing HIV/AIDS
- Review simple strategies for educating clients/patients about HIV/AIDS

Introduction to HIV/AIDS

Module 1: Introduction to HIV/AIDS

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Learning Objectives

- Describe the global, regional and local impact of HIV/AIDS on women, children, and families
- Explain the difference between HIV and AIDS
- Discuss the natural course of HIV infection
- Describe the relationship between viral load and CD4+ T cell count in monitoring and managing HIV/AIDS
- Review simple strategies for educating clients/patients about HIV/AIDS

Module 1: Introduction to HIV/AIDS

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Impact of HIV/AIDS- Global

"We are encouraged by the gains that have been made in some countries and by the fact that sustained HIV prevention programmes have played a key part in bringing down infections. But the reality is that the AIDS epidemic continues to outstrip global and national efforts to contain it."

UNAIDS Executive Director Dr Peter Piot

Module 1: Introduction to HIV/AIDS

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- The number of people living with HIV globally has reached its highest level with an estimated 39.5 million people, up from an estimated 37.5 million in 2003
- Approximately 2.9 million people died of AIDS-related illnesses in 2006; of these, more than 380,000 were children
- The steepest increases in HIV infections have occurred in East Asia, Eastern Europe and Central Asia, where the number of people living with HIV in 2006 was over 1/5th (21%) higher than in 2004.
- But sub-Saharan Africa continues to be the most affected globally—with 65% of new infections in 2006 (2.8 million people)
- Despite decreases in the rate of infection in certain countries, the overall number of people living with HIV has continued to increase in all regions of the world - there were an additional 4.3 million new infections in 2006 alone

Source, UNAIDS- 2006 Report on Global AIDS Epidemic, December 2006

Understanding the Data.....

Prevalence versus Incidence, defined:

- **HIV Prevalence:**
 - The number of people living with HIV at a specific point in time
- **HIV Incidence:**
 - The number of people newly infected with HIV within a certain time period

Module 1: Introduction to HIV/AIDS

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- HIV Prevalence example: December 2006, the prevalence of HIV was estimated to be 29.5 million people worldwide
- HIV Incidence example: in 2006 the annual global incidence of HIV was 4.3 million adults and children

Source, UNAIDS- 2006 Report on Global AIDS Epidemic, December 2006

Impact of HIV/AIDS- Global

- AIDS has killed more than 25 million people since it was first recognized in 1981
- AIDS has claimed almost 3 million lives in 2006 – more than 380,000 were children
- In 2006, there were approximately 40 million PLWHA worldwide – 2.3 million are children under 15 years old
- 85% of PLWHAs in 2006 were in Africa and Asia
- In 2006, 17.7 million women worldwide were living with HIV/AIDS – 90% in Africa and Asia

Module 1: Introduction to HIV/AIDS

Source: UNAIDS, Dec 2006

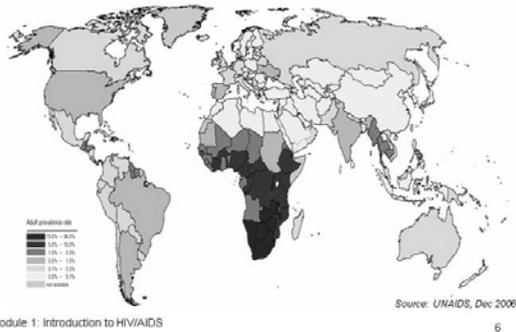
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Global Overview of HIV Rates

- AIDS is one of the most destructive epidemics in recorded history
- PLWHA – people living with HIV/AIDS
- There is new evidence that adult HIV infection rates have decreased in certain countries and that changes in behaviour to prevent infection—such as increased use of condoms, delay of first sexual experience and fewer sexual partners—have played a key part in these declines
 - Overall, trends in HIV transmission are still increasing which means that greater HIV prevention efforts are needed to slow the epidemic
- Globally, **young women aged 15–24 years are 3 to 4 times more likely to be infected with HIV than young men of the same age**

Source, UNAIDS- 2006 Report on Global Epidemic, December, 2006

Global Picture of HIV/AIDS



HIV/AIDS in adults and children, 2006

- Over 4 million adults and children (4.3 million) were newly infected with HIV
- From 2004 to 2006, new HIV infections increased by approximately 9%
- From 2004 to 2006, the largest increases in new HIV infections were in Eastern Europe and Central Asia (70%), South and Southeast Asia (15%), and the Middle East and North Africa (12%)
- 2.9 million deaths in adults and children were as a result of AIDS

UNAIDS estimates that at the end of 2006:

- 530,000 children worldwide were newly infected
- 380,000 child deaths due to HIV/AIDS are estimated to have occurred during 2006
- Recent data (UNICEF, 2005) show that over 15 million children have lost one or both parents to AIDS; 4 out of 5 children orphaned by AIDS are in sub-Saharan Africa
- Source, UNAIDS- 2006 Report on Global AIDS Epidemic, December 2006. Available at http://data.unaids.org/pub/EpiReport/2006/2006_EpiUpdate_en.pdf

Impact of HIV/AIDS - Caribbean (end of 2006)

- Approximately 250,000 (190,000-320,000) adults and children living with HIV/AIDS in the Caribbean
- 22,000 children (<15years) living with HIV/AIDS
- 1.2% prevalence rate - the 2nd highest of HIV/AIDS
- Estimated 27,000 (20,000–41,000) people became infected with HIV in 2006
- One of the leading cause of death for adults (age 15-44 years) in the region

Module 1: Introduction to HIV/AIDS

Source: UNAIDS, Dec 2006

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- In the Caribbean region, HIV/AIDS has evolved as one of the most pressing public health issues of the past two decades
 - The prevalence rate is second only to Sub-Saharan Africa
 - Prevalence rates in 2006 averaged 1.2%, but were as close to 4% in some countries (regions within Haiti)
- Many Caribbean countries are responding to the HIV/AIDS epidemic by raising awareness among the general population and instituting HIV prevention, care, treatment and support programs to address the needs of PLWHA

Source, UNAIDS- 2006 Report on Global Epidemic, December, 2006

Slide 8

Impact of HIV/AIDS- Caribbean

- Women now comprise 53% of the epidemic
- Prevalence rates among young women (15-24 years) is 1.6% compared to .7% for young men in the same age group



Module 1: Introduction to HIV/AIDS

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- Following similar worldwide trends, **WOMEN** in the Caribbean are disproportionately affected by HIV/AIDS, especially young women who are more than twice as likely to be HIV positive than young men of the same age group

Source, UNAIDS- 2006 Report on Global Epidemic, May, 2006

Slide 9

Impact of HIV/AIDS- Caribbean

- In 2005, Haiti had the highest prevalence rates in the Caribbean region at 4%
 - Bahamas (3.3%)
 - Trinidad and Tobago (2.6%)
 - Guyana (2.4%)
 - Jamaica (1.5%)

Source: UNAIDS, 2006

Module 1: Introduction to HIV/AIDS

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- These statistics demonstrate why HIV/AIDS in the Caribbean region warrants attention
- Although these numbers appear much smaller compared to parts of Africa and Asia, we must remember that Caribbean region is a relatively small area with a lot of movement between countries, hence the potential for further HIV transmission in the absence of HIV prevention, care, support and treatment initiatives

Source, UNAIDS- 2006 Report on Global Epidemic, May, 2006

Slide 10

Impact of HIV/AIDS- Bahamas

- The National AIDS Programme has monitored the epidemic since the first confirmed case in 1985
- As of December 31, 2005 there has been a cumulative total of 10,479 HIV infections:
 - 5,243 cases of AIDS
 - 5,236 persons who are non-AIDS HIV infections
- Of the 5,243 cases of AIDS, 69% have died

Source: Bahamas MOH, 2005

Module 1: Introduction to HIV/AIDS

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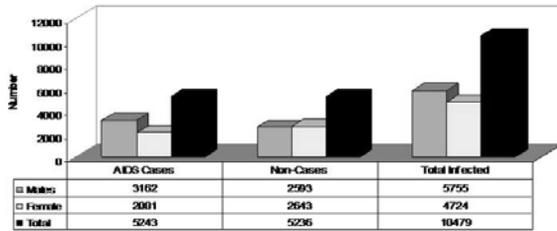
- The number of new persons testing HIV positive decreased from 404 in 2000 to 256 in 2004
- As a result of a Mass Media Campaign encouraging persons to know their HIV status additional people have come in for HIV testing, this was reflected in the increase by 47 new reported HIV cases totaling 303 new reported HIV infections for 2005
- Adolescents and young people account for the fastest growing group of new HIV infections

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)

Slide 11

Cumulative Number of Reported HIV Infections by Sex as of December 31st, 2005, Bahamas

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)



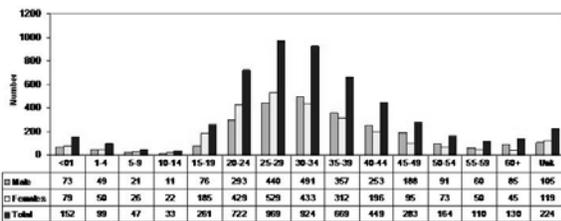
Module 1: Introduction to HIV/AIDS

Source: Bahamas MOH, 2005

Slide 12

Current Cumulative Number of Non-AIDS HIV Infections, by Age Group and Sex As of December 31st, 2005, Bahamas

- Of the total 10,479 infections, 7,661 are in young adults between the ages of 15 and 44 years
- The ratio of males to females infected with HIV is 1.1:1
- Notice that among 15- 29 year olds, young women in particular are disproportionately testing HIV positive



Module 1: Introduction to HIV/AIDS

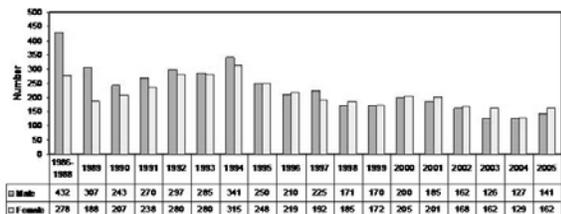
Source: Bahamas MOH, 2005

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)

Slide 13

Current Non-AIDS HIV Infections, by Sex and Reported Year Bahamas, 1996-2005

- The data increasingly shows that the numbers of women testing HIV positive is steadily higher than the numbers of men
- This means that in the Bahamas, WOMEN are at increased risk for HIV infection and are being disproportionately affected by the epidemic
 - The relationship gap tends to be a shorter gap between boyfriends
 - Some have concurrent partners



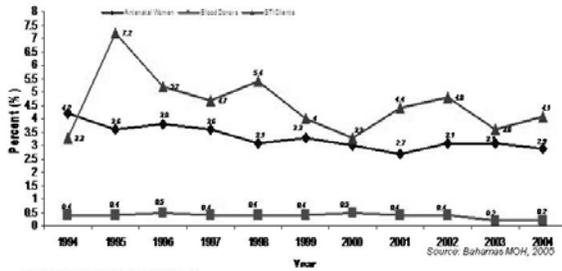
Module 1: Introduction to HIV/AIDS

Source: Bahamas MOH, 2005

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)

Slide 14

Prevalence of HIV in Antenatal Women, Blood Donors and STI Clients Bahamas, 1994-2004



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- The prevalence of HIV in antenatal clients is 2%. The overall HIV prevalence rate for The Bahamas is 3%
- Among women attending antenatal care clinics, approximately 3% tested HIV positive, whereas in the high risk STI clinics, over 4% of women tested positive for HIV
- This indicates a need for family planning initiatives and PMTCT programs that can reduce the risk of HIV transmission from mother to child

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)

Slide 15

Impact of HIV/AIDS-Global

- Destroys the backbone of the family and economy
- Accumulation of losses resulting in:
 - Slow down in economic development
 - Healthcare systems struggling to provide treatment and care
 - Reduction in adult life expectancy
 - Reduction in child survival rates
 - Increasing number of orphans

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- The HIV/AIDS epidemic destroys the backbone of the family and economy as it predominantly affects young and middle-aged adults who are the mainstay of the economy and primary income earners
- The social and economic consequences of HIV are far-reaching: from the individual to the family, community and country level at all levels of society
- HIV/AIDS contributes to:
 - Childhood malnutrition
 - Shortened life span with illness and suffering
 - Economic loss, personal and countrywide
 - Weakened family system

Slide 16

Social Change as a result of HIV/AIDS

- HIV has changed our lives and our communities forever
- Of these many changes, can you think of:
 1. Changes that have negatively impacted our communities and families?
 2. Changes that have benefits outside of the HIV response?

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Impact of HIV/AIDS-Bahamas

- Community effects of HIV
 - Depletion of skilled work force
 - Increased need for healthcare services
 - Burden of nursing care
 - Burden of care for orphaned children
 - Disruption of education for children

Impact of HIV/AIDS-Bahamas

- Individual and family effects of HIV:
 - Illness and suffering
 - Shorter life spans for children and adults
 - Loss of work and income
 - Death of family members
 - Grief, poverty, and despair
 - Barriers to receiving health care, including stigma and discrimination
 - Weakened family unit

Positive Impact of HIV/AIDS

- Groups in the community have come together
- Increased funding for healthcare systems by countries and organizations
- The Ministry of Health has become a stronger advocate
- More attention to TB because of its connection to HIV
- Increased awareness of safer sex practices

Module 1: Introduction to HIV/AIDS

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- There are many challenges created by the HIV/AIDS epidemic. Even though HIV has brought devastation, it has also brought together people of many different backgrounds to fight for a common cause
 - Groups in the community that have never worked together before have come together to address HIV/AIDS
 - Countries and organisations across the world have increased funding for healthcare systems in resource-limited settings, especially for institutions and organisations that care for people infected with HIV/AIDS
 - The Ministry of Health in many countries has become a stronger advocate for the healthcare needs of people in all sectors of society
 - Countries and organisations have become more attentive to TB because of its connection to HIV
 - There is increased awareness of safer sex practices that protect people from other STIs as well as HIV

Understanding HIV/AIDS

Module 1: Introduction to HIV/AIDS

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Understanding HIV/AIDS Basics

- What does HIV stand for?
- What does "AIDS" stand for?
- What's the difference between HIV and AIDS?
- What is HIV?
- How do you get it?
- How don't you get it?
- How does HIV make you sick?
- What can you do about it?



Module 1: Introduction to HIV/AIDS

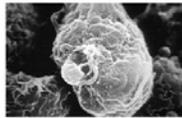
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- *Explain to participants that these questions will be answered in the discussions to follow*
- It is important for us to be able to talk to our clients, to clarify misinformation, dispel myths and provide hope for care and treatment
- We become partners in sharing information and planning for care

Understanding HIV/AIDS Basics

HIV stands for *human immunodeficiency virus*, the virus that causes AIDS

- **H:** Human
- **I:** Immunodeficiency
- **V:** Virus



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Slide 23

Understanding HIV/AIDS Basics

- **“HIV-infected”**
 - A person is infected with HIV
- **“HIV-positive”**
 - A person who is HIV-infected has tested positive for HIV
- **HIV infects white blood cells and breaks down the immune system**
- **The immune system is weakened and unable to fight diseases**

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- HIV breaks down the body's defence against infection and disease—the body's immune system—by infecting specific white blood cells, leading to a weakened immune system
- As time passes, the immune system is unable to fight the HIV infection and the person may develop diseases that lead to death, including opportunistic infections and some types of cancer

Slide 24

Understanding HIV/AIDS Basics

- **AIDS:**
 - Acquired Immunodeficiency Syndrome
 - The most advanced stage of HIV infection
- **Acquired** – (not inherited) to differentiate from a genetic or inherited condition
- **Immuno** – refers to the immune system
- **Deficiency** – inability to protect against illness
- **Syndrome** – a group of symptoms or illnesses that occur as a result of the HIV infection

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- AIDS is not the same as HIV infection
- Without treatment, HIV infection will almost always eventually lead to AIDS, as a consequence of years of damage to the immune system
- However, with treatment, many people with HIV infection never develop AIDS

Slide 25

Differences Between HIV and AIDS

- HIV is the virus that causes infection
- Person who is HIV-infected may have no signs of illness but can still infect others
- AIDS is a group of serious illnesses and opportunistic infections that develop after being infected with HIV for a long period of time
- Most people who are HIV-infected will develop AIDS after a period of time

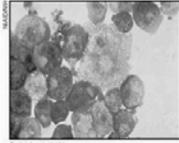
Module 1: Introduction to HIV/AIDS

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- AIDS can take several months to more than 15 years to develop
- See Appendices 1-A and 1-B for information about the World Health Organization (WHO) staging systems for HIV infection and Disease
- See Appendix 1-C for the US Centres for Disease Control and Prevention (CDC) AIDS Surveillance Case Definitions

Natural Course of HIV Infection

- The immune system protects the body by recognizing and destroying:
 - Infectious agents
 - Abnormal cells
 - Foreign objects
- HIV infects and destroys the T-helper (T) cell
 - Also known as the CD4 cell



T cells infected with HIV
Courtesy: National Institute of Allergy and Infectious Diseases

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- **Infectious agents** are things like bacteria and viruses
- **Foreign objects** could be anything from splinters to transplanted organs
- The T-helper cell or CD4 cell is an important type of cell in the body's immune system
- Without antiretroviral (ARV) treatment, the time span for progression from initial infection with HIV to end-stage AIDS varies from person to person and can take more than 15 years
 - Transition from the stages of asymptomatic HIV to symptomatic HIV to AIDS occurs when CD4 counts continue to decrease and immune function gets weaker
- Clinical manifestations of HIV and AIDS are usually associated with high viral load and low CD4 counts, both of which are also associated with an increased risk of MTCT
- In the absence of CD4 cell count or viral load testing, clinical signs and symptoms may allow for the diagnosis of HIV infection or AIDS

Natural Course of HIV Infection (2)

- Seroconversion
 - When a person recently infected with HIV develops antibodies that can be measured using a laboratory test, seroconversion is occurring
- People infected with HIV usually develop antibodies 4 to 6 weeks after being infected
- Some people experience "flu-like" symptoms at the time of seroconversion

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- A person whose blood test results show HIV infection is said to be seropositive or HIV-positive
- A person whose blood test results do not show HIV infection is said to be seronegative or HIV-negative
- It can take as long as 3 months to develop antibodies
- Symptoms include:
 - Rash, joint pains, enlarged lymph nodes, headaches, sore throat, muscle aches, diarrhoea, nausea, vomiting, viremia

HIV & the Immune System

- The CD4 cells are like soldiers
- Strong CD4 cells are able to fight off infection
- But, HIV damages the CD4 cell, eventually killing it
- So, HIV damages the system that usually protects the body from infection



Module 1: Introduction to HIV/AIDS

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Window Period

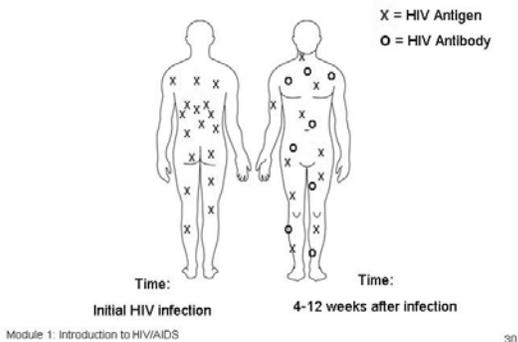
- Time between when a person is infected with HIV and when the antibody test result is positive
- HIV can be transmitted during any stage of the infection - many people do not know they are infected until they become symptomatic

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- From a public health perspective, the asymptomatic stage of HIV presents unique challenges
 - The person who feels well may be unaware of their infection or falsely believe that he or she cannot pass the virus to others
 - As a result, s/he may unknowingly transmit the virus to others if sexually active
- Persons who test negative for HIV (using antibody testing), but who may have been recently exposed to the virus should be re-tested in three months
 - This will be explored further in Module 6 Counselling and Testing
- Window period example: A person who tests HIV-negative but who has engaged in behaviour within the past 3 months that places him or her at risk for HIV should be tested again in 3 months in case they were in the “window period” when originally tested

Primary HIV Infection



- In the first few weeks after infection, the amount of HIV in the body increases dramatically
 - The body's reaction to this high burden of virus is responsible for the non-specific flu-like symptoms mentioned in the previous slides
- Antibodies to HIV develop soon after infection
 - Our latest tests for HIV can typically detect these antibodies about 21 days after infection
- On this second image, circles indicate HIV SPECIFIC antibody
 - As antibodies develop, the amount of virus will begin to drop because the immune system works to control the infection
- The time from initial infection until the development of antibodies is called the window period
 - An ELISA or rapid test will be negative or indeterminate during this phase of Primary HIV infection
- In all other stages of HIV infection, HIV antibody testing is the best method for diagnosing HIV infection in older children and adults

Asymptomatic HIV Infection

- A person who is HIV-infected but looks and feels healthy
- None of the physical signs or symptoms that indicate HIV infection is present
- Can still transmit virus to others
- Duration varies

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- The duration of the asymptomatic phase varies greatly from person to person– from a few months after primary infection to as long as 15 years or more to develop symptoms
- For children infected with HIV through MTCT, the asymptomatic phase is shorter
- A few infants who are HIV-positive will become ill within the first weeks of life
- Most children start to develop symptoms before they are 2 years old; a few remain well for several years

Slide 32

Symptomatic HIV Infection

- A person who has developed physical signs of HIV and reports symptoms related to HIV
- The immune system weakens and HIV progresses

- The progression of HIV depends on the type of virus and specific host characteristics including general health, nutritional, and immune status

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AIDS

- The end stage of HIV infection
- Almost all people who are HIV-infected will develop HIV-related diseases and AIDS
- As HIV infection progresses and the immune system weakens, the infected person becomes susceptible to OIs

- Without antiretroviral (ARV) treatment, the time span for progression from initial infection with HIV to end-stage AIDS varies from person to person and can take more than 15 years
- Transition from the stages of asymptomatic HIV to symptomatic HIV to AIDS occurs when CD4 counts continue to decrease and immune function gets weaker

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Opportunistic Infections (OIs)

- Illness caused by a germ that may not cause illness in a healthy person, but will infect a person who has a weakened immune system
- Infections may be of the lung, brain, eyes, and other organs

- Common OIs:
 - Tuberculosis
 - Pneumocystis pneumonia (PCP)
 - Cryptosporidiosis
 - Other parasitic, viral and fungal infections
 - Cancers, such as Kaposi's sarcoma

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Natural Course of HIV Infection

- CD4 Count and Viral Load (VL) are two measures of the progression of HIV
- When HIV actively multiplies, it infects and kills CD4 cells
- The CD4 count indicates the health of the immune system, disease progression, and risk of complications and debilitating infections

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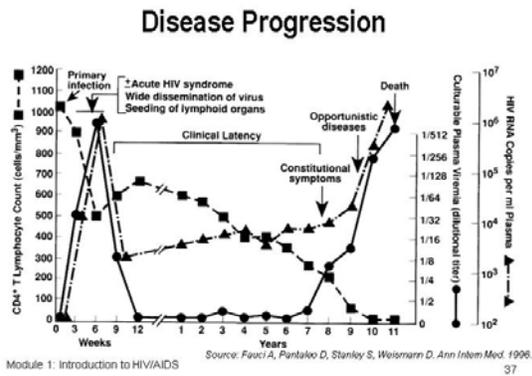
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CD4 Count

- The number of CD4 T-lymphocyte cells in the blood
- Normal CD4 count in a healthy adult is between 600 and 1,200 cells/mm³
- Below 200 cells/mm³, the risk of opportunistic and serious infection is high
- The CD4 count is usually expressed as the number of cells per cubic millimetre
- The CD4 count reflects the “health” of the immune system and is often used in resource-constrained settings as a marker of disease progression and the basis for initiating antiretroviral therapy
- The CD4 is a prognostic indicator

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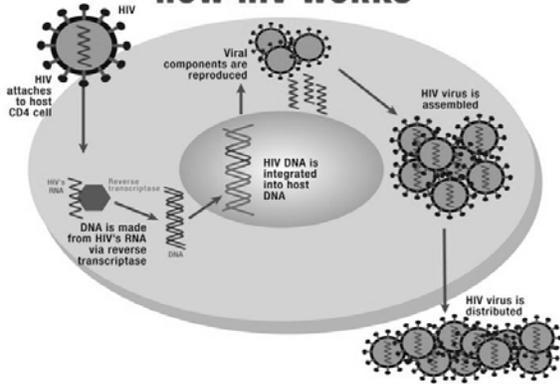


- The normal course of disease is shown in this graph:
 - The viral load is very high within the first month of infection during acute (primary) infection, typically in the millions
 - This high level of virus means the CD4 count drops steeply as it is being attacked by HIV
 - Then, over the next few months, the immune system tries to fight the virus
 - Viral load drops steeply & CD4 count is able to rise slightly
 - After this initial stage, the HIV disease may remain latent in the body. During this time, the client is asymptomatic
 - The length of this asymptomatic phase varies, but may last up to 15 years in some clients
 - Eventually however, the viral load starts increasing as replication continues
 - The CD4 cells are progressively overwhelmed and the client becomes symptomatic
 - Towards the end, viral load gets extremely high as CD4 cell gets extremely low, dropping even as low as 0
- Individuals infected with HIV are at higher risk for many infections (such as tuberculosis) even at relatively high CD4 counts
- Once the CD4 count has dipped below 200, they are at higher risk for a large number of opportunistic infections (this is why individuals with CD4 counts below 200 are defined as having AIDS, even if they have not actually had any opportunistic infections)
- This baseline viral load can be very different from person to person
- In general, the higher the baseline viral load, the faster the CD4+ T cells are destroyed, and the faster the client progresses to AIDS

Source: Fauci A, Pantaleo D, Stanley S, Weismann D. Immunopathogenic mechanisms of HIV infection. *Ann Intern Med.* 1996 Apr 1;124(7):654-63.

Slide 38

HOW HIV WORKS

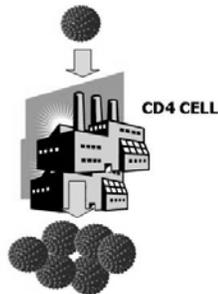


- Familiarity with the 6 stages of the HIV life cycle is essential for understanding the effect of ARVs on HIV
 1. HIV attaches to the CD4 cell & releases RNA & enzymes
 2. The enzyme Reverse Transcriptase makes a DNA copy of the viral RNA.
 3. New viral DNA is then integrated using the enzyme integrase into the CD4 cell nucleus
 4. New viral components are then produced, using the cell's "machinery"
 5. These are assembled together using the enzyme protease
 6. Then released as new viruses

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HIV Factory

- When HIV binds to a CD4 cell, it turns that cell into an HIV 'factory'
- Billions of HIV viruses are produced everyday, and the CD4 cell is eventually killed
- The new HIV viruses go on to infect other CD4 cells, and reproduce
- In the long term, it's a losing battle for the CD4 cells...



- HIV (blue, rounds cells in diagram) uses the CD4 cell like a factory
- It needs the machinery inside the factory (CD4 cell) to replicate
 - So HIV enters the factory and starts replicating, using the CD4 cell's machinery
- Millions of new viruses are released from the factory (CD4 cell)
 - These new viruses then move on to infect other CD4 cells which also become factories for HIV

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Viral Load (VL)

- The amount of HIV in the blood
- High VL leads to higher transmission risk
- Measured by the HIV ribonucleic acid polymerase chain reaction blood test (HIV-RNA PCR)
- The test is used as a marker of response to antiretroviral (ARV) treatment

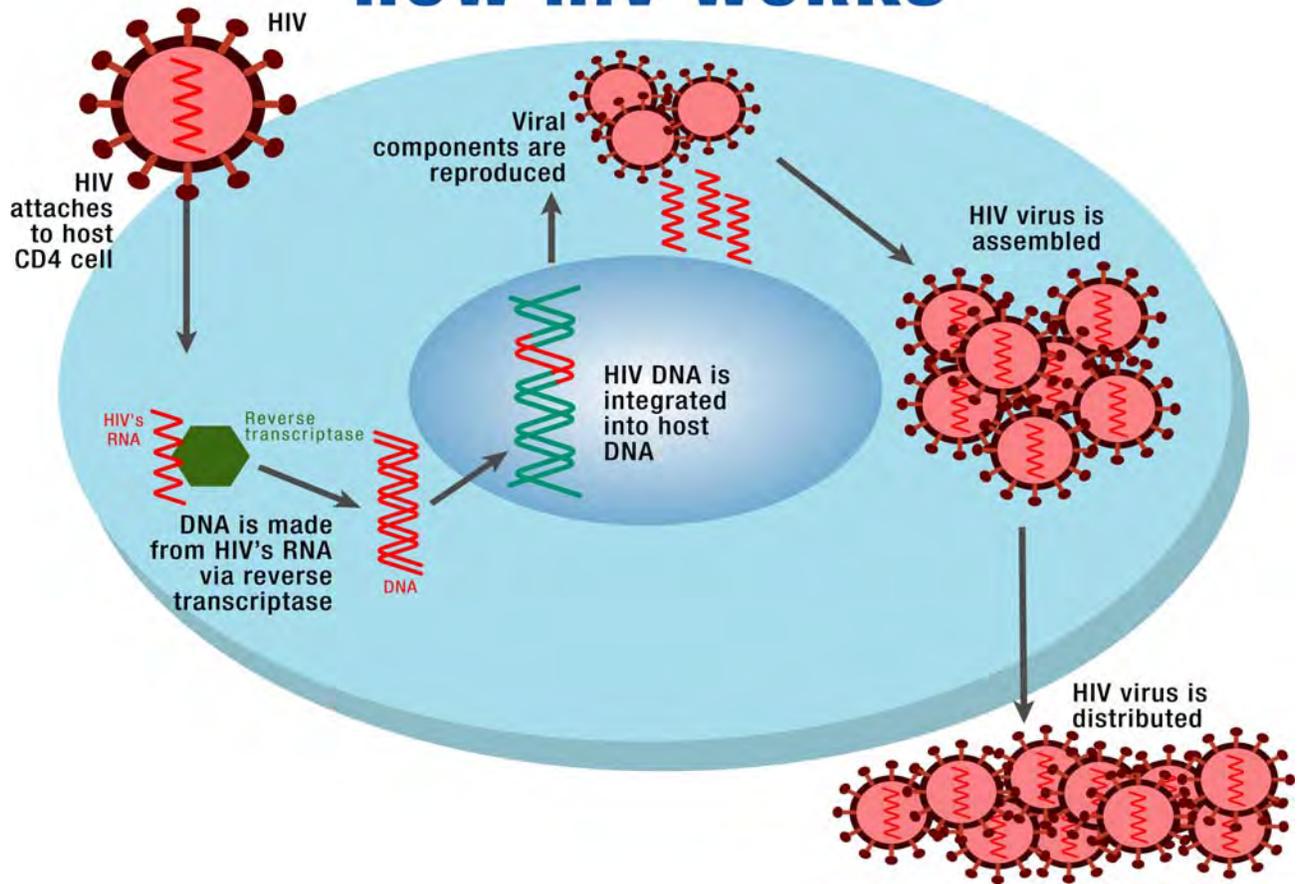
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Handout 1.1

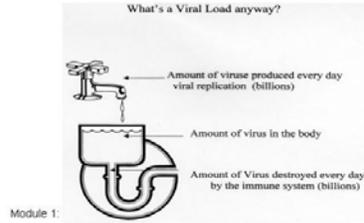
HOW HIV WORKS



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Disease Progression

- Severity of illness is determined by the degree of immune suppression (decreasing CD4+ counts)
- The higher the viral load, the faster the CD4+ count drops, and the sooner AIDS develops



- Clinical manifestations of HIV and AIDS are usually associated with high viral load and low CD4 counts, both of which are also associated with an increased risk of MTCT
- ARV treatment and prophylaxis and treatment of opportunistic infections help preserve the CD4 cells, lower viral load, and prolong the time it takes for HIV to progress to the symptomatic phase and, ultimately, to AIDS

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Clinical Staging for HIV/AIDS

- Two systems of staging:
 - WHO
 - CDC

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- See Revised World Health Organization (WHO) clinical staging of HIV/AIDS for adults and adolescents” (**Appendix 1-A**)
- The clinical staging system for infants and children contains 4 stages. (**Appendix 1-B**)
- The CDC AIDS Surveillance Case Definitions include clinical and immunologic categories based on CD4 counts (and, for children, percent of total lymphocytes)
 - This system uses a combination of laboratory and clinical information to establish criteria for stages of infection from asymptomatic to severely symptomatic (AIDS) (**Appendix 1-C**)

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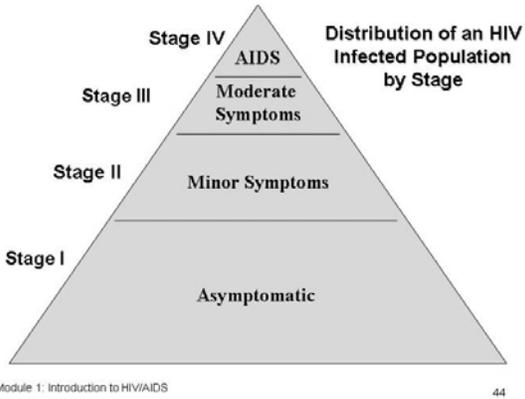
Clinical Staging for HIV/AIDS

- Staging systems for HIV can:
- Help determine when an individual is a candidate for ARV treatment
 - Contribute to the care of individuals who are HIV-infected
 - Provide a framework for follow-up and management
 - Help define prognosis and guide client counselling
 - Help evaluate new treatments

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- Staging systems can assist with clinical decision-making, including decisions on starting, substituting, switching, and stopping ARV treatment
- Staging systems continue to be modified as more is know about HIV and AIDS



- This “pyramid” represents an iceberg, with the vast majority of people living with HIV unaware of the infection and only the “tip” being visible
- This points to the need for widespread HIV counselling and testing and referral into HIV care and treatment programs to delay the onset of clinical manifestations of HIV infection

Routes of HIV Transmission

- HIV can be transmitted through:
 - Sexual contact
 - From mother-to-child (also known as perinatal or vertical transmission)
 - Blood-to-blood (including injection drug use)

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- Globally, the most common route of HIV transmission is through heterosexual intercourse with an HIV-infected person
- There is still a lot of misinformation about how HIV is transmitted from one person to another
- The main source of HIV transmission globally is unprotected sex with a partner who is HIV-infected
- When used correctly and consistently, condoms help protect against HIV and other sexually transmitted infections (STIs)
- In many countries, the second most important mode of transmission of HIV (in terms of number infected) is MTCT
- Effective PMTCT programmes reduce the risk of mother-to-child transmission of HIV

Routes of HIV Transmission

- Sexual contact
 - Unprotected sexual intercourse with infected partner
 - Contact with HIV-infected body fluids
- Pregnant women are at a higher risk of acquiring HIV than non-pregnant women

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- Sexual intercourse includes vaginal, oral, or anal sex
- Body fluids include blood, semen, cervical or vaginal secretions and other bodily fluids containing blood
- Healthcare workers should consider **all sexually active men and women** “at risk” of HIV with special emphasis on pregnant women.
- Pregnant women
 - This increased risk is probably due to hormonal changes affecting the genital tract mucosa or immune responses.
 - Pregnant women should be warned of this increased risk of infection and strongly encouraged to practice safer sex.

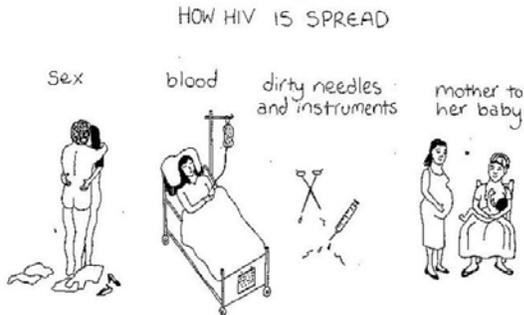
Routes of HIV Transmission

- Perinatal transmission (MTCT)
 - From HIV-infected mothers to their infants during pregnancy, l & d, or breastfeeding
- Blood to blood transmission
 - Transfusion with HIV-infected blood
 - Direct contact with HIV-infected blood
 - Occupational exposure
 - Sharing of sharp skin piercing instruments

- Sharp skin piercing instruments
 - Such as knives, scalpels, needles or any other sharp object that was used previously on a person with HIV
 - This includes medical, recreational, ceremonial, religious or beautifying procedures in the community, healthcare facility, or any other setting including sharing of needles or syringes to inject drugs

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From: HIV, Health, and your community. A Guide for Action. Granich,R& Mermin,J. Drawing by Mona Sfeir

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- This graphic shows a simple way to explain HIV transmission to patients and clients
- **The “source” has to have HIV in order for transmission to occur**

Source: From: HIV, Health, and your community. A Guide for Action. Granich,R& Mermin,J. Drawing by Mona Sfeir. Granich R, Mermin J. HIV, health, and your community: a guide for action. Stanford University Press, 1999.

Ways in Which HIV is **NOT** Transmitted:

- Close family contact**
- Living in the same house,
 - Using cooking utensils,
 - Breathing the same air, coughing or sneezing

- Usual social contact**
- At work, at school, or market
 - Riding a bus, praying or playing together
 - Touching
 - Shaking hands
 - Hugging
 - Kissing



- Sharing items:**
- Toilet seats, towels, washing water, bath water
 - Eating and drinking utensils
 - Communion cups
 - Work tools

- Being bitten by:**
- Mosquitoes or bedbugs
 - Other insects
 - Any other animal



- **HIV CANNOT be transmitted by:**
 - Coughing or sneezing
 - Public baths, pools, public toilets
 - Working or going to school with a person who is HIV-infected
 - Telephones
 - Water or food

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Public Health Strategies to Reduce the Risk of HIV Transmission

- Sexual contact:
 - Promote abstinence or being faithful to one HIV-negative partner
 - Condom promotion including instruction on the consistent and correct use of barrier methods
 - Prevent, identify and provide early treatment for sexually transmitted infections (STIs)
 - Provide access to HIV counselling and testing

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- Condoms provide protection from HIV transmission as well as other sexually transmitted infections (STIs) when used correctly and consistently
 - Male or female condoms for vaginal or anal intercourse
 - Non-lubricated condoms for oral intercourse on a male

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Public Health Strategies to Reduce the Risk of HIV Transmission (2)

- Perinatal transmission from HIV-infected mothers
 - Provide ARV treatment when indicated and available
 - Provide ARVs to prevent MTCT
 - Follow safer delivery practices
 - Offer elective c-section when safe and feasible
 - Provide infant-feeding counselling and support
 - Provide linkages to treatment, care, and social support for mothers and families with HIV infection

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- Module 2, Overview of HIV Prevention in Mothers, Infants, and Young Children contains detailed information on a comprehensive approach to PMTCT

Public Health Strategies to Reduce the Risk of HIV Transmission (3)

- Blood-to-blood transmission
 - Screen all blood and blood products for HIV
 - Follow Standard Precautions

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- Standard Precautions include:
 - Hand washing
 - Use of protective equipment (gloves, mask, eye protection, face shield, and gown)
 - Safe handling of used patient-care equipment soiled with blood, body fluids, secretions; clean and reprocess equipment appropriately
 - Procedures for the routine care, cleaning, and disinfection of environmental surfaces (such as beds, bedrails, bedside equipment)
 - Appropriate handling, transporting and processing of used linen soiled with blood, body fluids, secretions, and excretions
 - Injury prevention when using needles, scalpels, and other sharp instruments or devices: never recap used needles, safely dispose of these items in appropriate puncture-resistant containers
 - Placement of patients who contaminate the environment (or who cannot be expected to assist in maintaining appropriate hygiene or environmental control) in a private room or an appropriate alternative

Public Health Strategies to Reduce the Risk of HIV Transmission (4)

- Drug use
 - Educate about the risks
 - Provide referral for treatment

Drug use in any form may increase the risk of HIV infection by limiting judgment and facilitating engagement in risky behaviours

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- Educate about the risks of infection during drug use with contaminated needles and syringes
 - Provide referral for treatment of drug dependence
- Drug use in any form may increase the risk of HIV infection by limiting judgment and facilitating engagement in risky behaviours
- The risk of getting HIV/AIDS can be minimized by following the strategies on the previous slides
 - Health care workers must not lose sight of the important role of PREVENTION in the fight against HIV/AIDS and must promote prevention messages, whenever possible

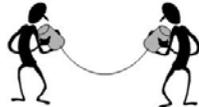
Educating Your Patients/Clients about HIV and AIDS: Finding a Common Language

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Communicating Complex Concepts: Finding a Common Language

<i>What you say:</i>	<i>What she may hear:</i>	<i>What she needs to know:</i>
<i>"Your HIV test is positive. You have the virus that can cause AIDS."</i>	<i>"AIDS. I am going to die?!"</i>	<i>What is HIV? How does HIV make you sick? What can you do about it?</i>



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1. Consider a scenario in which you are giving an HIV positive test results to a client. It is important that you help the client understand what the test results mean, what HIV is, how it makes a person sick, and what can be done about it
 - That is quite a challenge
2. An additional challenge is that the client has his/her own health beliefs which affects what they hear and understand from you
 - The first step in communicating complex concepts to clients/patients is to be aware of and understand the client's health beliefs.
3. In the example on this slide, the HCP tells the client "Your HIV test is positive, you have the virus that can cause AIDS;" but the client hears "I have AIDS. I am going to die!"

Finding a Common Language

- I. Explore Health Beliefs
- II. Share what you know
- III. Tell a story
- IV. Agree on a Plan

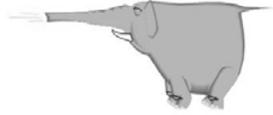
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- To communicate effectively with clients/patients, especially when communicating difficult concepts, the following strategy is suggested

I. Explore Health Beliefs

"Some people think you get a cold when...."



I. Explore Health Beliefs (2)

"Some people think you get HIV when...."

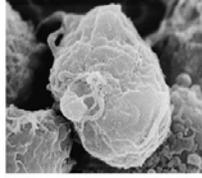
I. Explore Health Beliefs (3)

"Some people think you get HIV when...."

"Some people think AIDS is punishment for past mistakes or is a result of witchcraft. Have you heard anything like this? What do you think?"

II. Share what you know: “What is HIV?”

- HIV is a virus that causes AIDS
- There is no cure and over time, if it is not treated, most people will get sick and die
- There are medicines to treat HIV that can help you feel better



Courtesy of the Public Health Image Library/ CDC/IC Goldsmith, P. Feorino, E. L. Palmer, W. R. McManus

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- The second step in the process of “finding a common language” is to share what you have heard and then what you feel to be true. You can do this while acknowledging the client’s beliefs. For example,
- “Many people say that HIV/AIDS is punishment for past mistakes. But most scientists believe that AIDS is caused by a virus called HIV, and that over time, if it is not treated, most people will get sick and die. We have medicine that can help to make you better.”
- It is important to check to see if your client has understood what you have said. This can be done by asking “Tell me what you understand about what I told you.”

Use “Tools” to Explain Difficult Concepts

- Charts
- Diagrams
- Pictures
- Analogies

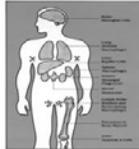


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- You can help your clients to understand difficult concepts if you link what is new to something that is already understood
- What is the community understanding of TB and how it is spread? What about chicken pox or measles? Is this common knowledge?
- When explaining difficult concepts to clients, it is important to weigh accurate, complete science vs. immediate need to begin to understand

III. Tell a story: HIV and the Immune System HIV and pregnancy



Courtesy of NIH

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The third step is to tell a story

1. A nice example from a peer educator in Botswana was to compare the immune system's role of protecting our health to a Krall (fence) protecting an individual's wealth (cattle)
 - “Every day, your body works hard to keep out germs in the same way many people use a Krall to protect their cattle. But HIV is tricky and attacks the immune system itself. We can think of that like someone adding a piece of wood with termites to the Krall. Over time, the termites eat away at the wood, weakening the krall...other animals can then get through the weakened fence, or the cattle can wander away..”
2. The boxers, well matched, could represent the struggle between HIV and the T cells.
3. A drawing of pregnancy with risk of HIV transmission can also make a difficult concept more clear
 - Other examples:
 - The immune system is a military unit protecting your body, and the CD4 cells are the commanders
 - To explain the window period: when somebody becomes infected with HIV, it is like planting a seed - you can't tell the seed is there until the plant begins to grow. The period before you can see the plant is the window period
 - The virus is like a thief. It enters your house when you don't even expect it. Whatever you have, it takes it with him and leaves you without anything. Besides that, after stealing it leaves the doors wide open which means any other thieves can enter the house. For this reason, you must find precautions to defend yourself against these thieves
 - The immune system is the orchestra and the T-cell is the conductor. The virus destroys the conductor – without the conductor, the orchestra doesn't function well together

IV. Agree on a Plan

- The Science
 - Higher the viral load, faster the CD4 count declines, the sooner you develop AIDS
 - ARVs can lower viral load, keep the T-cells up and prolong life
- The Story
 - The water in the sink gets higher and higher and your drain can't keep up. We need to turn off the water, or...
 - The corn becomes overwhelmed by weeds and can't grow. We need to pull the weeds, or...
 - The krall becomes so weak from termites, it can't keep the cattle safe. We need to fix the fence

- Just as there is a complex relationship between virus and host, there is a complex relationship between client and care providers

IV. Agree on a Plan (2)

- The Plan
 - Choosing a regimen
 - That's effective
 - That's tolerable
 - That fits the family
 - Respects the health beliefs of the family

Small Group Activity

- Each group should choose one of the following topics, and develop a story to help explain complex concepts to a client:
 - How HIV makes you sick
 - How HIV infects a baby
 - When to start treatment

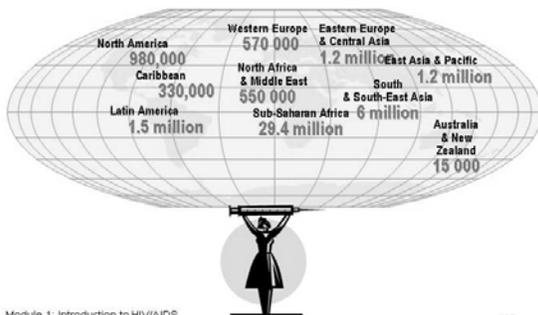
Implications for Health Care Workers (HCWs)

- Why is it important for HCWs to have a good understanding of HIV and the immune system?
- How does knowing the continuum of HIV disease progression help clients?

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Total: 40 million living with HIV



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- The care of people with HIV on our planet is falling to us. We can do it by providing empathetic and knowledgeable quality HIV *care that can change people's lives*

Key Points

- HIV is a global epidemic and the number of people living with HIV globally has reached its highest level, an estimated 40.3 million
- The Caribbean continues to be affected —with over 37,000 new infections in 2005
- Women are increasingly at risk for HIV infection and now comprise 53% of all cases in the Caribbean region
- HIV is a virus that destroys the immune system, leading to opportunistic infections; AIDS is the end stage of HIV infection

Key Points (2)

- An understanding of HIV and its actions in the body are essential to providing care to persons living with HIV infection
- The most common route of HIV transmission worldwide is sexual transmission from an HIV-infected partner
- Pregnant women who are HIV-infected are at risk of passing HIV infection to their infants
- Public health strategies can be implemented to reduce the risk of HIV transmission, including MTCT

Key Points (3)

- HCWs must develop strategies for communicating complex concepts to clients
 - Exploring the client's health beliefs, sharing what you know, and telling stories can help the communication process
- It is essential that HCWs keep updated about HIV prevention, care, and treatment
- HCWs play a critical role in creating a welcoming, supportive environment for people with HIV

APPENDIX 1-A Revised WHO Clinical Staging of HIV/AIDS for Adults and Adolescents

WHO clinical staging system of HIV/AIDS for adults and adolescents with confirmed HIV infection.

To be used for persons \geq 15 years of age old

Primary HIV infection

- Asymptomatic
- Acute retroviral syndrome

Clinical Stage 1

- Asymptomatic
- Persistent generalized lymphadenopathy

Clinical Stage 2

- Moderate unexplained weight loss (<10% of presumed or measured body weight)
- Recurrent respiratory tract infections (sinusitis, tonsillitis, bronchitis, otitis media, pharyngitis)
- Herpes zoster
- Angular cheilitis
- Recurrent oral ulceration
- Papular pruritic eruptions
- Seborrhoeic dermatitis
- Fungal nail infections

Clinical Stage 3

- Unexplained¹ severe weight loss (>10% of presumed or measured body weight)
- Unexplained chronic diarrhoea for longer than one month
- Unexplained persistent fever (intermittent or constant for longer than one month)
- Persistent oral candida
- Oral hairy leukoplakia
- Pulmonary tuberculosis
- Severe presumed bacterial pneumonia (e.g. pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia, excluding pneumonia)
- Acute necrotizing ulcerative stomatitis, gingivitis, or periodontitis
- Unexplained anaemia (<8g/dl), neutropenia (<500/mm³) and or chronic thrombocytopenia (<50 000/mm³)

Clinical Stage 4

- HIV wasting syndrome
- Pneumocystis pneumonia
- Recurrent severe presumed bacterial pneumonia
- Chronic herpes simplex infection (orolabial, genital or anorectal of more than one month's duration or visceral at any site)
- Oesophageal candidiasis (or candida of trachea, bronchi or lungs)
- Extrapulmonary tuberculosis
- Kaposi's sarcoma
- Cytomegalovirus infection (retinitis or infection of other organs)
- Central nervous system toxoplasmosis
- HIV encephalopathy
- Extrapulmonary cryptococcosis including meningitis

APPENDIX 1-A Revised WHO Staging Systems for HIV Infection and Disease for Adults and Adolescents *(continued)*

Disseminated non-tuberculous mycobacteria infection
Progressive multifocal leukoencephalopathy
Chronic Cryptosporidiosis
Chronic Isosporiasis

WHO clinical staging system of HIV/AIDS for adults and adolescents with confirmed HIV infection.

To be used for persons \geq 15 years of age old

Clinical Stage 4 cont'd

Disseminated mycosis (extrapulmonary histoplasmosis, coccidiomycosis, penicilliosis)
Recurrent septicaemia (including non-typhoidal salmonella)
Lymphoma (cerebral or B cell non-Hodgkin)
Invasive cervical carcinoma
Atypical disseminated leishmaniasis

¹Unexplained refers to where the condition is not explained by other conditions.

APPENDIX 1-B Revised WHO Clinical Staging of HIV/AIDS for Infants and Children

WHO clinical staging system of HIV/AIDS infants and children < 15 years of age with confirmed HIV infection

Primary HIV infection

- Asymptomatic (intra peri or post partum)
- Acute retroviral syndrome

Clinical Stage 1

- Asymptomatic
- Persistent generalized lymphadenopathy

Clinical Stage 2

- Unexplained persistent hepatosplenomegaly
- Papular pruritic eruptions
- Extensive wart virus infection
- Extensive molluscum contagiosum
- Recurrent oral ulcerations
- Unexplained persistent Parotid gland enlargement
- Lineal gingival erythema
- Herpes zoster
- Recurrent or chronic upper respiratory tract infections (otitis media, otorrhoea, sinusitis, tonsillitis)
- Fungal nail infections

Clinical Stage 3

- Moderate unexplained malnutrition not adequately responding to standard therapy
- Unexplained persistent diarrhoea (14 days or more)
- Unexplained persistent fever (above 37.5 intermittent or constant, for longer than one month)
- Persistent oral candida (after first 6-8 weeks of life)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis/periodontitis
- Lymph node TB
- Pulmonary TB
- Severe recurrent presumed bacterial pneumonia
- Symptomatic lymphoid interstitial pneumonitis
- Chronic HIV-associated lung disease including bronchiectasis
- Unexplained anaemia (<8g/dl), neutropenia (<500/mm³) or chronic thrombocytopenia (<50 000/mm³)
- HIV-associated cardiomyopathy or HIV-associated nephropathy

APPENDIX 1-B Revised WHO Clinical Staging of HIV/AIDS for Infants and Children

WHO clinical staging system of HIV/AIDS infants and children < 15 years of age with confirmed HIV infection

Clinical Stage 4

- Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy
- Pneumocystis pneumonia
- Recurrent severe presumed bacterial infections (e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia)
- Chronic herpes simplex infection; (orolabial or cutaneous of more than one month's duration or visceral at any site)
- Extrapulmonary tuberculosis
- Kaposi's sarcoma
- Oesophageal candidiasis (or candida of trachea, bronchi or lungs)
- Central nervous system toxoplasmosis (after one month of life)
- HIV encephalopathy
- Cytomegalovirus infection retinitis or CMV infection affecting another organ, with onset at age over 1 month
- Extrapulmonary cryptococcosis including meningitis
- Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidiomycosis, penicilliosis)
- Chronic Cryptosporidiosis
- Chronic Isosporiasis
- Disseminated non-tuberculous mycobacteria infection
- Acquired HIV associated rectal fistula
- HIV associated tumours including Cerebral or B non-Hodgkin lymphoma
- Progressive multifocal leukoencephalopathy

APPENDIX 1-C: CDC AIDS Surveillance Case Definitions for Adolescents, Adults, and Children

I. CDC AIDS surveillance case definition for adolescents and adults

Clinical Categories			
CD4 Cell Categories	A	B	C*
mm ³ (%)	Asymptomatic, PGL, or Acute HIV Infection	Symptomatic** (not A or C)	AIDS Indicator Condition (1987)
1 >500/mm ³ (≥29%)	A1	B1	C1
2 200–499/mm ³ (14–28%)	A2	B2	C2
3 <200/mm ³ (<14%)	A3	B3	C3

* All patients in categories A3, B3 and C1-3 are defined as having AIDS, based on the presence of an AIDS-indicator condition (see the following table) and/or a CD4 cell count of less than 200/mm³.

** Symptomatic conditions not included in Category C that are: a) attributed to HIV infection or indicative of a defect in cell-mediated immunity or b) considered to have a clinical course or management that is complicated by HIV infection. Examples of B conditions include but are not limited to bacillary angiomatosis; thrush; vulvovaginal candidiasis that is persistent, frequent or poorly responsive to therapy; cervical dysplasia (moderate or severe); cervical carcinoma in situ; constitutional symptoms such as fever (38.5° C) or diarrhoea lasting longer than 1 month; oral hairy leukoplakia; herpes zoster involving two episodes or more than 1 dermatome; idiopathic thrombocytopenic purpura (ITP); listeriosis; pelvic inflammatory disease (PID) (especially if complicated by a tubo-ovarian abscess); and peripheral neuropathy.

Source: US Centers for Disease Control and Prevention. 1992. 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. *MMWR* 41(RR-17) <http://www.cdc.gov/mmwr/preview/mmwrhtml/00018179.htm>

II. CDC AIDS case surveillance definition for infants and children

CDC immunologic categories based on age-specific CD4 counts and percent of total lymphocytes

Immunologic category	<12 mos	1–5 yrs	6–12 yrs
	mm ³ (%)	mm ³ (%)	mm ³ (%)
Category 1: No evidence of suppression	≥ 1,500 (> 25)	≥1,000 (> 25)	≥ 500 (> 25)
Category 2: Evidence of moderate suppression	750–1,499 (15–24)	500–999 (15–24)	200–499 (15–24)
Category 3: Severe suppression	< 750 (<15)	< 500 (<15)	< 200 (<15)

APPENDIX 1-C: CDC AIDS Surveillance Case Definitions for Adolescents, Adults, and Children *(continued)*

Clinical categories for children with HIV

CATEGORY N: NOT SYMPTOMATIC

Children who have no signs or symptoms considered to be the result of HIV infection or who have only one of the conditions listed in Category A.

CATEGORY A: MILDLY SYMPTOMATIC

Children with two or more of the conditions listed below but none of the conditions listed in Categories B and C.

- Lymphadenopathy (> 0.5 cm at more than two sites; bilateral = one site)
- Hepatomegaly
- Splenomegaly
- Dermatitis
- Parotitis
- Recurrent or persistent upper respiratory infection, sinusitis, or otitis media

CATEGORY B: MODERATELY SYMPTOMATIC

Children who have symptomatic conditions other than those listed for Category A or C that are attributed to HIV infection.

Examples of conditions in clinical Category B include but are not limited to:

- Anemia (<8 gm/dL), neutropenia (<1,000/mm³), or thrombocytopenia (<100,000/mm³) persisting ≥ 30 days
- Bacterial meningitis, pneumonia, or sepsis (single episode)
- Candidiasis, oropharyngeal (thrush), persisting (>2 months) in children >6 months of age
- Cardiomyopathy
- Cytomegalovirus infection, with onset before 1 month of age
- Diarrhea, recurrent or chronic
- Hepatitis
- Herpes simplex virus (HSV) stomatitis, recurrent (more than two episodes within 1 year)
- HSV bronchitis, pneumonitis, or esophagitis with onset before 1 month of age
- Herpes zoster (shingles) involving at least two distinct episodes or more than one dermatome
- Leiomyosarcoma
- Lymphoid interstitial pneumonia (LIP) or pulmonary lymphoid hyperplasia complex
- Nephropathy
- Nocardiosis
- Persistent fever (lasting >1 month)
- Toxoplasmosis, onset before 1 month of age
- Varicella, disseminated (complicated chickenpox)
- Leiomyosarcoma
- Lymphoid interstitial pneumonia (LIP) or pulmonary lymphoid hyperplasia complex
- Nephropathy
- Nocardiosis
- Persistent fever (lasting >1 month)
- Toxoplasmosis, onset before 1 month of age
- Varicella, disseminated (complicated chickenpox)

APPENDIX 1-C: CDC AIDS Surveillance Case Definitions for Adolescents, Adults, and Children *(continued)*

CATEGORY C: SEVERELY SYMPTOMATIC

Conditions included in clinical Category C for children infected with HIV:

- Serious bacterial infections, multiple or recurrent (i.e., any combination of at least two culture-confirmed infections within a 2-year period), of the following types: septicemia, pneumonia, meningitis, bone or joint infection, or abscess of an internal organ or body cavity (excluding otitis media, superficial skin or mucosal abscesses, and indwelling catheter-related infections)
- Candidiasis, esophageal or pulmonary (bronchi, trachea, lungs)
- Coccidioidomycosis, disseminated (at site other than or in addition to lungs or cervical or hilar lymph nodes)
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis or isosporiasis with diarrhea persisting >1 month
- Cytomegalovirus disease with onset of symptoms at age >1 month (at a site other than liver, spleen, or lymph nodes)
- Encephalopathy (at least one of the following progressive findings present for at least 2 months in the absence of a concurrent illness other than HIV infection that could explain the findings): a) failure to attain or loss of developmental milestones or loss of intellectual ability, verified by standard developmental scale or neuropsychological tests; b) impaired brain growth or acquired microcephaly demonstrated by head circumference measurements or brain atrophy demonstrated by computerized tomography or magnetic resonance imaging (serial imaging is required for children <2 years of age); c) acquired symmetric motor deficit manifested by two or more of the following: paresis, pathologic reflexes, ataxia, or gait disturbance
- Herpes simplex virus infection causing a mucocutaneous ulcer that persists for >1 month; or bronchitis, pneumonitis, or esophagitis for any duration affecting a child >1 month of age
- Histoplasmosis, disseminated (at a site other than or in addition to lungs or cervical or hilar lymph nodes)
- Kaposi's sarcoma
- Lymphoma, primary, in brain
- Lymphoma, small, noncleaved cell (Burkett's), or immunoblastic or large cell lymphoma of B-cell or unknown immunologic phenotype
- *Mycobacterium tuberculosis*, disseminated or extrapulmonary
- *Mycobacterium*, other species or unidentified species, disseminated (at a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes)
- *Mycobacterium avium complex* or *Mycobacterium kansasii*, disseminated (at site other than or in addition to lungs, skin, or cervical or hilar lymph nodes)
- *Pneumocystis carinii* pneumonia
- Progressive multifocal leukoencephalopathy
- Salmonella (nontyphoid) septicemia, recurrent
- Toxoplasmosis of the brain with onset at >1 month of age
- Wasting syndrome in the absence of a concurrent illness other than HIV infection that could explain the following findings: a) persistent weight loss >10% of baseline OR b) downward crossing of at least two of the following percentile lines on the weight-for-age chart (e.g., 95th, 75th, 50th, 25th, 5th) in a child > 1 year of age OR c) <5th percentile on weight-for-height chart on two consecutive measurements, ≥30 days apart PLUS a) chronic diarrhea (i.e., at least two loose stools per day for >30 days) OR b) documented fever (for > 30 days, intermittent or constant)

Adapted from: US Centers for Disease Control and Prevention. 1994. Revised classification system for human immunodeficiency virus infection in children less than 13 years of age. *MMWR* (RR-22).

APPENDIX 1-D: Frequently Asked Questions (FAQs)

This section reviews questions that are often asked about HIV and related topics. It is intended to be a resource for healthcare workers who provide counselling and education for clients.

What is HIV?

HIV is the human immunodeficiency virus. Over time, the virus multiplies and weakens the body's immune system by destroying a specific type of white blood cells (CD4 cells). This process makes the body unable to fight infection.

What is the difference between HIV and AIDS?

AIDS stands for acquired immunodeficiency syndrome and is the most advanced stage of HIV-infection. In this advanced stage, the virus has done enough damage to the immune system to allow infections and cancers the "opportunity" to develop. These infections and cancers are called opportunistic infections. They are sometimes referred to as AIDS-defining illnesses and include candidiasis, *Pneumocystis pneumonia* (PCP), tuberculosis, and certain cancers like Kaposi's sarcoma.

How long does it take HIV to cause AIDS?

The time between being infected with HIV and experiencing signs and symptoms is called the asymptomatic period. This period, which varies from person to person, may be several months or as long as 15 years. AIDS is the final and most severe phase of HIV infection and will lead to death if not treated.

Where did HIV come from?

Scientists have different theories about the origins of HIV, but none have been proven. We know that the virus has been in the United States, Haiti, and Africa since the late 1970s. At the beginning of the epidemic, healthcare workers noticed that patients had rare forms of pneumonia, cancer, and other illnesses. These observations prompted the first research about the virus that became known as HIV.

How does HIV make someone sick?

With a weakened immune system, the body cannot protect itself from germs in the environment. Common germs can cause serious infections in people with HIV/AIDS. These infections are known as opportunistic infections. Medicines and proper health care can help support the weakened immune system of a person with HIV/AIDS.

What are the signs and symptoms of HIV?

Following infection with HIV, a person may develop flu-like symptoms such as fever, headache, fatigue, and enlarged lymph nodes/glands. This is known as acute retroviral syndrome (ARS) and it usually goes away in 1–2 weeks. Often it will be years before a person infected with HIV feels ill.

How can I tell if I am infected with HIV?

The only way to know if you are infected with HIV is to have your blood tested. You cannot rely on symptoms alone. If you think you were exposed to HIV or have symptoms of the virus, go to a healthcare provider immediately.

How is HIV transmitted?

HIV is found in the blood, semen, pre-ejaculatory fluid, vaginal secretions, and breastmilk of an infected person. HIV can be transmitted by having unprotected vaginal, anal, or oral sex, where an exchange of body fluids takes place with no barrier such as a condom. Sharing needles with a person who is infected is another way to get HIV. An HIV-infected mother can transmit the virus to her infant while breastfeeding. You can protect yourself from getting HIV by abstaining from high-risk activities, such as unprotected sex, which may result in contact with another person's body fluids.

How can I protect myself from getting HIV?

You can protect yourself from getting HIV by:

- Not having sex (being abstinent)
- A person who does not engage in sexual intercourse has almost no chance of contracting HIV.
- Not having unprotected, oral, anal or vaginal sex
- People who use a condom correctly every time they have sex protect themselves from HIV.
- Only have sex with one partner known to be HIV-negative.
- People who are both HIV-negative and are mutually faithful (i.e., they only have sex with each other) are not at risk of getting HIV by having sex.
- For any procedure or rite that involves piercing the skin, avoid using needles, knives, razors, or other sharp implements that were used on someone else,. This includes exercising your right to ask for sterile needles if you are getting an injection in a healthcare setting.

What happens if you live close to someone with AIDS?

You will not get HIV or AIDS from living or working with someone who is infected. You can live and work together safely, provided that the person is not your sexual partner and that you take special care if you are handling body fluids like blood.

Can a woman give HIV to a man during vaginal intercourse?

Yes. If the woman is infected, HIV is present in vaginal and cervical secretions, the wetness in a woman's vagina. These secretions or blood can enter the penis through the urethra (the hole at the tip) or through cuts or abrasions on the skin of the penis. The presence of other STIs in the woman also can increase the risk of transmission. The correct use of a latex male or female condom can reduce the risk of transmitting HIV during intercourse.

Can I get HIV from oral sex?

While the risk of becoming infected with HIV during oral sex is lower than the risk of becoming infected during vaginal intercourse, any exposure to the semen, pre-ejaculatory fluid, vaginal secretions, or blood of an HIV-infected person puts the partner at risk of becoming infected. The risk of being infected during oral sex is increased if sores, cuts, poor dental hygiene, and/or bleeding gums are present.

Can I get HIV from kissing?

Casual contact through closed-mouth or "social" kissing does not put a person at risk of getting infected with HIV. Kissing with an open mouth, sometimes called "French kissing," may provide an opportunity for contact with blood. However, the risk of acquiring HIV during open-mouth kissing is believed to be very low. The risk of getting HIV by kissing is increased by the presence of sores, cuts, poor dental hygiene, and/or bleeding gums.

If an HIV test can detect the virus in a person's saliva, then why can't I get HIV by kissing someone who is infected?

While it is possible to find the HIV virus in the saliva of infected people, there is no evidence that the virus is spread by contact with saliva. Saliva has natural properties that limit HIV infectiousness. The lining of the mouth can, however, be infected with HIV, which is why it is possible to spread HIV through oral intercourse.

Should I be concerned about getting infected with HIV while playing sports?

There are no documented cases of HIV infection acquired while participating in sports. The risk of HIV transmission is present only when the sport involves direct body contact and bleeding may occur; even in these sports, the risk of transmission is very low. If an injury that causes bleeding occurs, a sports match should be interrupted until the wound stops bleeding, is antiseptically cleaned, and securely bandaged. There is no risk of transmission during sports activities when bleeding does not occur.

Can I get HIV from casual contact, such as shaking hands, hugging, or drinking from the same glass as an HIV-infected person? Can I get HIV from using a public toilet? Can I get HIV if someone with HIV coughs or sneezes near me?

No. HIV is a fragile virus that cannot survive outside of the human body. HIV cannot be carried in food or in the air by a cough or sneeze. HIV is not transmitted by day-to-day contact in the home, workplace, school, or other social settings. HIV cannot be transmitted by shaking hands, hugging, or by social kissing. You cannot become infected from a toilet seat, drinking fountain, doorknob, dishes, drinking glasses, food, or pets.

Can I get infected with HIV from a mosquito bite?

No. Studies have shown no evidence of HIV transmission through insects, even in areas with a high prevalence of HIV that also have large populations of biting or bloodsucking insects. If mosquitoes were responsible for spreading HIV, then people of all ages would be infected and this is not the case. The virus lives in cells of the human body and does *not* live in the cells of mosquitoes or any other insects.

Can the HIV virus survive outside of the body?

HIV is unable to reproduce or survive well outside of the human body. The virus dies once the body fluids dry up.

How long can the HIV live outside of the body?

Scientists agree that HIV does not survive well in the environment, making the possibility of environmental transmission remote. HIV is found in varying amounts in blood, semen, vaginal fluid, breastmilk, saliva, and tears. To obtain data on the survival of HIV, scientists have had to use artificially high concentrations of laboratory-grown virus. Although HIV in these unnaturally high concentrations can be kept alive under precisely controlled laboratory conditions, CDC studies have shown that even in these high concentrations of HIV, drying of the medium containing the virus reduces the number of infectious viruses by 90–99 percent in several hours. Since the HIV concentrations used in laboratory studies are much higher than those found in blood or other body fluids, drying of HIV-infected human blood or other body fluids reduces the theoretical risk of environmental transmission to that observed in the laboratory—essentially zero.

HIV is very fragile, and many common substances, including hot water, soap, bleach, and alcohol, will kill it. HIV is also sensitive to fluctuations in temperature and the presence of oxygen. One place that HIV has been known to survive is in syringes used to inject drugs, since these are airtight and often contain blood from the person on whom the syringe was previously used.¹

What is the connection between HIV and other sexually transmitted infections (STIs)?

STIs often cause sores or breaks in the skin and mucous membranes of the vagina. This can increase a person's risk of becoming infected with HIV, because these openings in the skin make it easier for HIV to enter the body during sexual contact. STIs can cause microscopic breaks in the skin that are not visible to the naked eye. All clients should assess whether they have or are at risk for STIs and seek HIV testing and, if necessary, treatment from their healthcare provider.

If a pregnant woman has an STI and a partner who is HIV-infected, there is an increased risk that she will become infected and will transmit HIV to her infant. For this reason, it is especially important that the woman use a female condom or have her partner use a male condom during sex.

Do I still need to practice safer sex when taking antiretroviral (ARVs)?

Yes. ARVs are not a cure for HIV infection; the virus remains in your body and you can still infect others while taking these medications. If you are HIV-infected and have unprotected sex, your immune system may become even weaker if you are re-infected. ARVs do not prevent transmission or re-infection with HIV. Protect yourself and your partner by:

- a) Abstaining from sexual intercourse **or**
- b) Being faithful to one partner with whom you have protected sex **or**
- c) Using a condom every time you have sex

¹ Adapted from <http://hivinsite.org/insite?page=ask-01-10-20>.

Can HIV-infected women use hormonal contraceptives such as oral birth control pills?

Hormonal contraceptives, such as birth control pills, may be taken by HIV-infected women, but they do not protect against STIs or re-infection with HIV. Oral contraceptives should be used in combination with a barrier method, such as a condom.

Certain classes of ARVs, including the protease inhibitors and the drug nevirapine (NVP), *may* decrease the effectiveness of hormonal contraception. Women who are HIV-infected should discuss with a healthcare worker the possible interactions between hormonal contraceptives and some antibiotics used to prevent and treat HIV-related conditions.

WHO recommends that there should be *no* restriction on the use of hormonal contraception options for women, other than those already put forth in the current “*WHO Medical Eligibility Criteria for Contraceptive Use*.”

How effective are latex condoms for preventing HIV?

Several studies have demonstrated that latex condoms are highly effective for preventing HIV transmission when used correctly and consistently. The studies examined uninfected people involved in sexual relationships with HIV-infected persons and found that even with repeated sexual contact, 98–100% of those people who consistently used latex condoms remained uninfected.

Can oil be used to lubricate a condom?

No. Most condoms are made from a rubber known as latex, which is chemically reactive with oil- and petroleum-based substances. Many types of oils or lubricants can cause latex condoms to break or tear during sex, making them useless in preventing HIV, other STIs, and pregnancy. Lubricants that are not designed specifically for use with latex condoms should never be used. *Always use a water-based lubricant if it is needed during oral, anal, or vaginal sex.*

How do I know that my HIV test is accurate?

HIV tests are very accurate. Every HIV-positive test result is confirmed by at least one other HIV test before the test result is discussed with the client. If you think you might have an inaccurate positive result (“false positive”) you may return to the clinic for another HIV test 3 months after your first test. You must avoid possible exposure to the virus during this time.

If you are concerned about an inaccurate negative test result (“false negative”) due to recent exposure to HIV, you should go for retesting 3 months after your most recent exposure. This will allow time for antibodies to develop, so that the test can detect HIV infection if it is present.

If I test negative for HIV does that mean my partner is also negative?

No. Every person must have the HIV test performed on his or her own blood.

Your negative test result does not tell you anything about the HIV status of your partner(s). Similarly, if you test positive, this does not confirm the status of your partner either. HIV is not transmitted every time there is an exposure, although there is a risk with each exposure. No one's test result should be used to determine another person's HIV status.

If I test positive for HIV, what should I do?

A positive test result indicates that you are infected with HIV. The sooner you take steps to protect your health, the better. Prompt medical care can prevent serious illness and delay the onset of AIDS. A healthy lifestyle, nutritious diet, and hopeful attitude also may help you stay well. If you receive a positive test result, there are many important steps you should take immediately to protect your health:

- Visit a healthcare worker as soon as possible, even if you feel well. If possible, find a healthcare provider who has experience treating HIV/AIDS. The healthcare worker will offer you important tests, immunizations, and treatments that can help you maintain good health. It is never too early to start thinking about ARV treatment possibilities.
- Get screened for TB. Undetected TB can cause serious illness for persons with HIV and vice versa. If detected early, TB can be treated successfully.
- Eat healthy and nutritious foods and do some form of exercise at least 3 days per week.
- Stop using recreational drugs. If you drink alcohol, do so only moderately. Stop smoking. These substances can weaken your immune system.
- Consider joining a support group for people with HIV infection or finding out about other resources available in your area.
- Learn as much as you can about HIV infection and ways to take care of yourself.

Simple, daily practices can help you remain healthy for many years, even with HIV infection.

What is the treatment for HIV and AIDS?

There is no cure for HIV infection but there are medicines that reduce the amount of HIV in the body, slow the spread of HIV, and preserve the body's immune system. These medicines, called antiretrovirals (ARVs) are most effective when taken daily, in the correct amount, at the correct times of day. Less virus means more functioning CD4 cells; which enable a body to fight infection. When receiving ARV treatment, a client typically will begin to gain weight and appetite will improve. Many clients report an increase in their energy level; many return to work.

How do I take antiretroviral medicines (ARVs)?

It is very important that you take the medicine exactly as prescribed by your healthcare provider. ARVs only work when the amount of medicine circulating in the body is at the correct level. For this to happen, you must take each medicine:

- **At the correct dose.** If you take less than the dose prescribed, the treatment will not be effective.
- **At the right time of the day.** Most ARV medications are taken twice a day. This means you will take your medicines every 12 hours, for example at 7am and again at 7pm, according to your daily activities.
- **According to any dietary restrictions.** Some ARV medicines need to be taken with food; others need to be taken on an empty stomach.
- **Consistently.** Treatment is for life.

What is viral resistance?

Viral resistance occurs when a virus mutates (changes) and is no longer affected by a particular ARV medication. Viral resistance usually occurs when clients do not take medication exactly as it is prescribed. Sometimes, clients receiving ARV treatment skip doses due to side effects or because it may be difficult to take the medication every day at the correct time. Viral resistance to TB medications has resulted in what is commonly known as multi-drug resistant TB (MDR-TB).

Viral resistance may also occur as a result of some ARV prophylaxis regimens. A single dose of NVP, given to a woman during labour may cause resistance and, if NVP is used in her future treatment, it may not be effective. However, resistance has been shown to decrease over time. NVP resistance remains an important topic and the issue of resistance will continue to evolve as more research is done.

HIV-infected persons with active TB should be encouraged to seek medical care immediately. Some ARVs interact with rifampicin, a TB medication. Refer any client with TB and HIV to a clinician with experience treating this type of client; the clinician will know which ARVs do not interact with rifampicin and prescribe them instead. It is critical that the client take all ARVs and TB medication to control HIV and cure TB.

Can women with HIV have babies?

Women who are infected with HIV are able to have normal, healthy pregnancies. It is very important that HIV-infected pregnant women have the best antenatal care available to decrease the risk of transmitting the virus to their infants. An HIV-infected mother will want someone who has experience with safer delivery practices to deliver her baby. It is also critical that the baby and mother continue to receive care in the postpartum period and ongoing follow-up care. Unless virologic HIV testing is available, a definite diagnosis cannot be made until the baby is 18 months old. However, there are specific symptoms and conditions that can signal to a healthcare worker that a baby is at increased risk of being HIV-infected. This is why it is so important that an HIV-infected mother bring her baby for regular clinic visits.

Why do all pregnant women need to be tested for HIV?

A woman with HIV infection can pass the virus to her infant during pregnancy, birth, and while breastfeeding.

HIV counselling and testing provides an opportunity for all pregnant women to learn their HIV status. If infected, a pregnant woman can begin treatment to help delay disease progression and reduce the risk of transmitting HIV to her infant. She can also receive prophylaxis before and immediately after the birth, to further lower the chance of infecting her infant, and receive counselling on safer infant feeding.

HIV counselling and testing can also provide uninfected women with information on how to prevent becoming infected with HIV.

Is it possible that my baby won't be born with HIV?

Yes, it is possible to give birth to a healthy baby if a mother is infected with HIV. Testing and counselling during pregnancy to identify HIV-infected women, safer delivery and infant feeding practices, ARV treatment, and short-term prophylaxis will greatly reduce the chance of transmitting infection by 40-70%.

With no intervention, the chance that an HIV-infected mother will give birth to an HIV-infected baby is 25–40%.

Can a woman pass HIV to her infant through breastmilk?

Yes. It is estimated that for every 100 infants born to HIV-infected mothers, 5 to 20 are infected during breastfeeding (a risk of between 5% and 20%). The risk of transmitting HIV through breastfeeding is increased when the mother has HIV symptoms, has mastitis or other breast condition. The risk of transmitting HIV is also increased if a child has ulcers or sores in the mouth.

However, the risk of not breastfeeding an infant also places them at higher risk for other common diseases of childhood like diarrhoea and respiratory infections. Breastmilk protects infants by stimulating the development of their immune system. The decision to breastfeed should be made by the mother, but be informed by her family situation and healthcare provider.

How will I decide whether to breastfeed my baby or use replacement feeding?

All mothers who are HIV-infected should seek and receive infant-feeding counselling, which includes general information about the risks and benefits of all infant feeding options and specific guidance on selecting the option most likely to be suitable for their situations.

Can I breastfeed my child if I am HIV-infected?

When replacement feeding is acceptable, feasible, affordable, sustainable, and safe, mothers who are HIV-infected should avoid all breastfeeding. Otherwise, exclusive breastfeeding is recommended during the first months of life. To minimize HIV transmission risk, mothers who are HIV-positive should discontinue breastfeeding as soon as feasible, taking into account local circumstances, the individual woman's situation, and the risks of replacement feeding (which include malnutrition and infections other than HIV).

All mothers who are HIV-positive should seek and receive counselling, which includes general information about the risks and benefits of infant-feeding options and specific guidance on selecting the option most likely to be suitable for their situation.

Can I breastfeed if my status is unknown and my child's HIV status is also unknown?

Because of the benefits of breastfeeding, the following are the recommendations for women who do not know their status:

- Breastfeed **exclusively** for the first six (6) months of life.
- Continue breastfeeding for up to 2 years or longer.
- After the infant reaches 6 months of age, introduce safe, nutritious complementary foods.

However, women of unknown HIV status should be encouraged to get tested.

Can I breastfeed if my infant is HIV-infected?

Experts suggest that because the infant already is HIV-infected, the risk of transmitting HIV through breastfeeding no longer exists. In addition, the well-described benefits of breastfeeding become particularly important for the HIV-infected infant.

What is mixed feeding?

Mixed feeding refers to breastfeeding and also giving the infant other milks, fluids (including water) or foods in the first six months of life. Risks associated with mixed feeding before 6 months of age for the infant of an HIV-positive mother include:

- Irritation of infant's intestinal mucosa, possibly making the baby more susceptible to HIV and other infections
- Breastmilk is replaced with less nutritious foods
- Increased risk of diarrhoea in infants

Studies have shown that exclusive breastfeeding is not only safer than mixed feeding but also healthier and more nutritious. HIV-negative mothers and mothers with unknown HIV status are urged to exclusively breastfeed for the first six months of life.

How often and how long should I breastfeed to bring in the milk supply?

Begin breastfeeding within 30 minutes after delivery and breastfeed on demand at least 8–12 times, day and night. Breastfeeding patterns may vary from day to day and infant to infant. Some general advice on ensuring a good milk supply: offer and empty both breasts during each feeding and allow the baby to feed as long as he or she wants. Alternate the breast the infant starts feeding on. By allowing a baby to nurse as long as he or she wants, a mother can ensure that her baby will receive the most benefit from the high-fat and calorie-rich hind milk. Mothers should be encouraged to rest and nap throughout the day and drink plenty of fluids.

How can I tell if my baby is getting enough breastmilk?

The most reliable way of assessing if a baby is getting enough breastmilk is weight gain. Monitoring a baby's growth can be done by the mother (if she has access to a scale) or by healthcare providers. In general, babies should be gaining about 125g a week or about 500g per month during the first 6 months.

Why do we wait several weeks before testing babies for HIV?

If the baby was infected during labour, then it will take several weeks for HIV to be detectable in the blood. If virologic tests are available, like PCR testing, they are able to detect the actual virus in a baby's blood at about 6–8 weeks of age.

How can I tell if my baby is getting sick?

If you see the following signs, be sure to seek medical assistance as soon as possible:

- Baby shows signs of dehydration: fewer than 3 wet diapers (nappies) per day, pink-coloured urine, sunken fontanel (the soft spots on top of a baby's head), sunken eye sockets, or dry mouth
- Baby refuses to breastfeed for more than 8 hours
- Baby does not have bowel movements or has many more than usual. The baby should have 3–5 good-sized, soft, yellow-coloured, seedy bowel movements per day and 6–8 wet diapers (nappies) per day. However, this is reliable only when a child is not given other foods or fluids, other than breastmilk, during the first 6 months.
- Any drastic change from the baby's normal behaviour: baby is highly irritable or unusually calm,
- Baby is breathing rapidly with possible chest heaves

How does co-infection with malaria in pregnancy affect an HIV-infected woman?

An HIV-infected woman with malaria is more likely to develop severe malarial illness, including anaemia and infection of the placenta. Infants born to women with HIV and malaria have an increased risk of low birthweight and a higher chance of illness and death as a result.

Pregnant women with HIV infection are more susceptible to treatment failure of antimalarial drugs. Preventive treatment is recommended for women at risk of malaria, and includes the use of insecticide-treated netting (ITN) and daily cotrimoxazole prophylaxis or treatment with sulfadoxine-pyrimethamine (SP).

How do people get tuberculosis?

TB infection in a person with HIV is very dangerous. Worldwide, TB is the leading cause of death among HIV-infected people. TB is primarily an airborne disease; it is spread from person to person in tiny microscopic droplets when a TB sufferer coughs, sneezes, speaks, sings, or laughs. Only people with active disease are contagious.

It usually takes lengthy contact with someone with active TB before a person becomes infected. On average, people have a 50% (1 out of 2) chance of becoming infected with TB if they spend eight hours a day for six months or 24 hours a day for two months working or living with someone with active TB. The risk may be higher for people living with HIV/AIDS (PLWHA), as they are particularly vulnerable to developing active TB when they are first infected with TB. However, people with TB who have been treated with appropriate drugs for at least two weeks are no longer contagious and do not spread TB to others.

People with TB may have an infection that was recently transmitted from another person, but often PLWHA have reactivated TB. That is, they had TB earlier in life, but the infection went into remission for many years. For people with HIV, the TB bacteria become active only because of their weakened immune system.

Module 2 Understanding Prevention of Mother- to-Child Transmission of HIV



Total Module Time: 225 minutes (3 hours, 45 minutes)

Objectives: By the end of this session, participants will be able to:

- Provide an overview of mother to child transmission (MTCT) of HIV infection including the factors that increase the risk of MTCT of HIV infection
- Identify the factors which impact HIV transmission during pregnancy, labour, delivery and breastfeeding.
- Describe the four elements of a comprehensive approach to prevention of HIV infection in infants and young children
- Review the history of PMTCT programmes in the Bahamas
- Identify the components of a PMTCT program to reduce the risk of HIV transmission
- Recognize the importance of PMTCT as an integral part of comprehensive MCH care
- Recognize how proper antenatal care (ANC) can optimize mother and baby's health

Slide 1

Introduction to PMTCT of HIV

Module 2: Introduction to PMTCT of HIV

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Slide 2

Children Are.....

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Slide 3

Learning Objectives

- Provide an overview of mother to child transmission of HIV infection including the factors that increase the risk of MTCT of HIV infection
- Identify the factors which impact HIV transmission during pregnancy, labour, delivery and breastfeeding
- Describe the four elements of a comprehensive approach to prevention of HIV infection in infants and young children

Module 2: Introduction to PMTCT of HIV

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Learning Objectives (2)

- Review the history of PMTCT programmes in the Bahamas
- Identify the components of a PMTCT programme to reduce the risk of HIV transmission
- Recognize the importance of PMTCT as an integral part of comprehensive MCH care
- Recognize how proper antenatal care (ANC) can optimize mother and baby's health

Slide 5

What Do We Know About MTCT of HIV?

- MTCT is the transmission of HIV from an HIV-infected mother to her baby

MTCT can occur during:

- Pregnancy (Maternal)
- Labour and Delivery (L&D) (Obstetric)
- Post-partum (Breastfeeding)



Module 2: Introduction to PMTCT of HIV

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- MTCT stands for Mother-to-Child Transmission
- The majority of children infected with HIV acquire the virus through MTCT
- Factors that impact HIV transmission can be grouped into these three categories. PMTCT consists of interventions to minimize risk factors in all categories.
- Keep in mind the infectious disease concepts: factors may be related to the virus (maternal or paternal factors), the inoculation (how the virus gets to the fetus/infant) and the host (factors which allow the virus to cause infection and to replicate)

Slide 6

Overview of MTCT

- “MTCT” attaches no blame or stigma to the woman who gives birth to a child who is HIV-infected
- “MTCT” of HIV should not obscure the fact that HIV may be introduced into a family by either the woman or her sexual partner

Module 2: Introduction to PMTCT of HIV

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- MTCT is also referred to as vertical transmission or perinatal transmission
- The terms MTCT does not suggest deliberate transmission by the mother, who is often unaware of her own infection status and unfamiliar with how HIV is passed from mother-to-child
- Both the woman and her sexual partner share the responsibility for preventing transmission of HIV to the infant

Overview of MTCT (2)

Risk of transmission without intervention

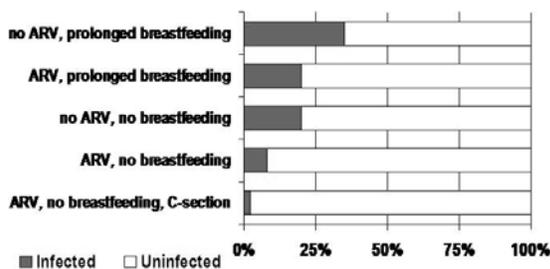
- The overall MTCT rate is approximately 25-40% **without** intervention
- ARV prophylaxis can **reduce** MTCT up to 70% if a woman does not breastfeed
- In industrialized countries, MTCT has been reduced to about 2%

Module 2: Introduction to PMTCT of HIV

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- The probability of transmission of HIV from an infected mother to her infant depends on several factors, including whether or not a woman receives ARV prophylaxis and treatment
- Without intervention (ARV prophylaxis and/or treatment) up to 40% of breastfed infants born to mothers infected with HIV may become HIV-infected
 - Most transmission occurs during labour and delivery
 - Depending upon breastfeeding practices and duration, there is also risk of HIV transmission during breastfeeding
- With ARV prophylaxis MTCT can be reduced by as much as 70% among women who do not breastfeed
- In industrialized countries where women infected with HIV receive combination ARV treatment and do not breastfeed—and where elective caesarean sections are safe, feasible, and commonly performed—the rate of MCTC has been reduced to about 2%
- In industrialized countries replacement feeding is affordable, feasible, acceptable, sustainable and safe, so it is easy for women with HIV to choose not to breastfeed

Variable Risk of MTCT of HIV (With and Without Preventive Interventions)

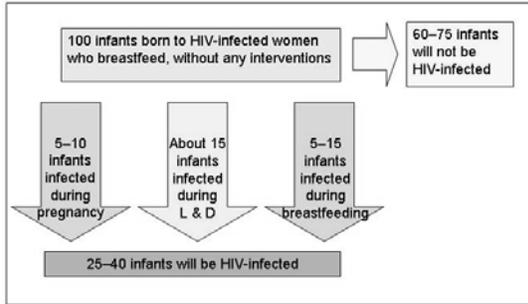


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Slide 9

Figure 2.1: HIV Outcomes Of Infants Born To Women Infected With HIV



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- Figure 2.1 shows that without intervention, up to 40% of infants born to mothers infected with HIV who breastfeed may become HIV-infected
- With PMTCT interventions, MTCT can be reduced by 40-70%. In particular, ARV prophylaxis or—for mothers who are eligible and where it is available—ARV treatment is highly effective in reducing MTCT, particularly if provided in combination with other interventions such as safer obstetric practices and safer infant-feeding counselling and support for mothers
- The interventions for reducing MTCT will be described in the following session and in Module 3: Prevent Mother-to-Child Transmission (MTCT) Interventions

Slide 10

MTCT in the Bahamas

- HIV infected women make up approximately 2% of pregnancies in the Bahamas
- 85% access ANC through Public Health Community Clinics
- All women are counselled and offered HIV testing – more than 90% agree to be tested
- HIV positive women are referred to the HIV/AIDS clinic at the Princess Margaret Hospital

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- 2% is out of the 6000 annual pregnancies in the Bahamas
- Testing for pregnant women in the Bahamas is an “opt out” approach, which means that the test can only be done with informed consent
- Once the HIV positive women are referred to the clinic, they are counselled and offered ARVs
- The Bahamas was one of the first countries in the Caribbean to institute a PMTCT program
 - These slides provide an overview of the program

Slide 11

MTCT in the Bahamas (2)

- Babies are followed up at the pediatric HIV/AIDS clinic
 - If they are HIV positive, they are followed up monthly
- With the ARV programme in place, the Vertical Transmission rate has dropped from 30% to less than 2%

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- The weekly pediatric HIV/AIDS clinic runs concurrently with the antenatal clinic
- If the babies are found to be HIV positive, they are followed up on a monthly basis in the clinic

MTCT in the Bahamas (3)

Trends noted affecting MTCT:

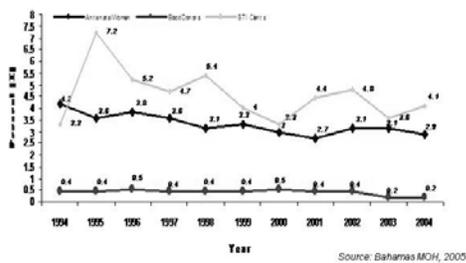
- Decrease in new persons testing HIV positive
- Increase in HIV infected persons on ARV medication
- STI/HIV infections in young girls - the fastest growing group testing HIV positive
- The number of teenagers having babies each year is approximately 700 - 800

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- A noted decrease in the number of person testing positive for HIV in the Bahamas, compounded by the large number of PLWHA on ARV medication may be partly responsible for the reduction of MTCT. However MTCT is still a major issue for women and young girls
- As noted on the slides, STI's among young girls continue to rise. Not only are they the fastest growing group of persons testing HIV positive, but there continues to be a high number of teen pregnancies every year, which implies that young people are continuing to have unprotected sex

MTCT in the Bahamas (4)



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- This slide depicts HIV prevalence rates among blood donors, antenatal women and STI clinics
- Not surprisingly, STI clients test HIV positive more often than other members of the Bahamian community
- Young girls are a significant part of the STI population

Source: Bahamas Ministry of Health, HIV/AIDS Centre (2005)

MTCT in the Bahamas (5)

To sustain MTCT in the Bahamas the following strategies have been employed:

- ARVs to HIV positive pregnant women by the 2nd trimester, with monitoring of adherence
- Prevention of repeat pregnancies
- Protocols for children of HIV positive mothers
- Care and treatment for children with HIV infection
- Orphans and AIDS - a growing concern and problem

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HIV and Pregnancy and Risk Factors for Transmission

Values Clarification Exercise

- Purpose: To explore our beliefs and values related to HIV, pregnancy and PMTCT so that we are better equipped to provide culturally competent services to our clients/patients

HIV and Pregnancy

Effect of pregnancy on HIV infection:

- Pregnancy does not seem to have an effect on the progression of HIV disease
- African women, with late stage disease have demonstrated more complications during pregnancy, delivery and post partum period



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- In pregnancy, the immune function is suppressed in both HIV-infected and non-infected women
- Pregnancy in HIV-infected women appears to have little effect on the progression of HIV/AIDS
- If a women who is HIV-infected becomes pregnant, her HIV disease will not get worse
 - But, having said that, pregnant women with HIV/AIDS are at increased risk of preterm delivery, postpartum infections and even infant death
- Asymptomatic HIV-infected women, who are otherwise healthy, can have normal pregnancies

HIV and Pregnancy (2)

Effect of HIV Infection on Pregnancy:

- Increased risk of spontaneous abortions
- Double the rate of pre-term deliveries
- Increased risk of low birth weight infant
- Increase in still births
- Increased risk of bacterial pneumonia, UTIs and other illnesses
- Increase in post-natal infections

It is important that pregnant women with HIV get the best possible antenatal and postpartum care

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- This list shows some of the pregnancy-related complications for women with HIV

Risk Factors for HIV Transmission

- The most important risk factor for MTCT is the amount of HIV in the mother's blood - known as the *viral load*
- Risk of transmission to the infant is greatest when the mother's viral load is high

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- Viral, maternal, obstetrical, foetal, and infant-related factors all influence the risk of MTCT

Risk Factors for HIV Transmission During Pregnancy

Increased Risk if mother:

- Has viral, bacterial, and parasitic (esp. malaria) placental infection
- Has concurrent STI
- Is malnourished
- Becomes infected with HIV during pregnancy
- Has advanced HIV disease



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- If a woman has an infection/ or inflammation of the placenta/choiron she will have an immune response (lymphocytes, "pus" all the white cells). HIV lives in the cells of the immune system!
- Anything that compromises physical barriers to the virus (alterations in the integrity of the skin, mucous membranes, placenta, choiron) can increase risk of transmission
- Data show that STIs such as Herpes Simplex Virus will up regulate HIV production
- Malnutrition is immune suppressing, which results in higher viral load, and increased risk of transmission
- Initial infection and advanced disease have similar risk- that of high viral load

Risk Factors for HIV Transmission During Pregnancy (2)



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- Consider the factors which alter integrity of the placenta, factors which could increase circulating lymphocytes (white cells associated with HIV infection), and how that might be associated with transmission of the virus

Risk Factors for HIV Transmission During Pregnancy (3)



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Risk Factors for HIV Transmission During L&D

Increased risk with increased exposure to maternal fluids:

- Intrapartum haemorrhage
- Fetal scalp sampling/monitoring
- Prolonged rupture of membranes (> 4 hours)
- Invasive delivery techniques
 - Episiotomy
 - Use of metal cups for vacuum deliveries
 - Forceps deliveries

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- HIV transmission during labour and delivery occurs when the baby comes in contact with, ingests, or inhales maternal blood or vaginal secretions that contain HIV.
- What is the biology behind increased risk with ruptured membranes?
- Amniotic fluid protects the baby
 - Once the membranes are ruptured, the infant is exposed to HIV in vaginal secretions
 - Blood and vaginal secretions have high concentrations of HIV and the infant will have these secretions in their mouth - and make the connection between avoiding suctioning as the catheter may actually “push” virus into the baby

Risk Factors While Breastfeeding

Increased risk with:

- New maternal infection
- Mixed feeding
- Breast pathologies
- Advanced disease in the mother
- Poor maternal nutrition
- Prolonged breastfeeding
- Mouth sores in baby



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Table 2.1: Maternal and neonatal factors that may increase the risk of HIV transmission

Pregnancy	Labour and Delivery	Breastfeeding
<ul style="list-style-type: none"> ■ High maternal viral load (new infection or advanced AIDS) ■ Viral, bacterial, or parasitic placental infections, e.g. malaria ■ Sexually transmitted infections (STIs) 	<ul style="list-style-type: none"> ■ High maternal viral load (new infection or advanced AIDS) ■ Rupture of membranes for more than 4 hours¹ ■ Invasive delivery procedures that increase contact with mother's infected blood or body fluids (e.g. episiotomy, artificial rupture of membranes) ■ Chorioamnionitis (from untreated STI or other infection) ■ Preterm delivery ■ Low birth weight 	<ul style="list-style-type: none"> ■ High maternal viral load (new infection or advanced AIDS) ■ Duration of breastfeeding ■ Mixed feeding (e.g. giving water, other liquids, or solid foods in addition to breastfeeding) ■ Breast abscesses, nipple fissures, mastitis ■ Oral disease in the baby (e.g. thrush or sores)

¹ Studies have found that there is an increased rate of HIV transmission after a mother's membranes have been ruptured for more than 4 hours. The longer the membranes are ruptured, the higher the risk of HIV transmission.

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- Table 2.1 summarizes what would increase the risk of MTCT of HIV during pregnancy and infancy

Summary of MTCT

- HIV is a family infection – both mothers and fathers have an impact on transmission of HIV to the baby
- If a woman becomes infected with HIV when she is pregnant or breastfeeding, the risk of transmission to the baby increases
- Both partners need to be aware of the importance of safer sex throughout pregnancy and breastfeeding
- Pregnancy does not seem to have an effect on progression of disease to AIDS, but women with AIDS are more likely to suffer from pregnancy-related complications

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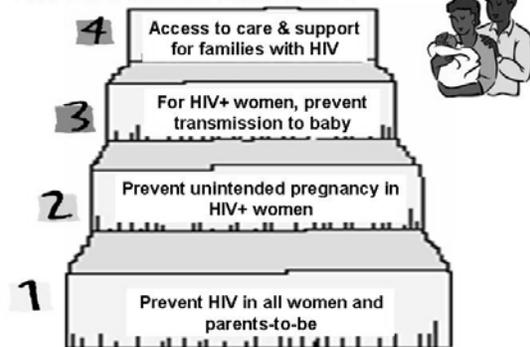
Comprehensive Approach to PMTCT

- PMTCT is the term for programmes and interventions designed to reduce the risk of MTCT of HIV
- PMTCT can be integrated into any existing public health or healthcare setting
- PMTCT are very successful all over the world in reducing rates of HIV infection from mother-to-child
- In order to significantly reduce MTCT and achieve global and national targets, PMTCT must be viewed as a comprehensive public health approach focusing on not only women with HIV, but also their partners and, equally as importantly, parents-to-be whose HIV status is unknown or HIV-negative
- A comprehensive approach to PMTCT includes four elements of preventing HIV infection in infants and young children (Next slide)

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Four Essential Elements



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- Reducing HIV infection in infants and young children requires a multi-sectoral approach that includes the four elements that make up the “comprehensive approach to PMTCT”
- The four elements of a comprehensive approach to PMTCT target different populations
 - The first element focuses on parents-to-be
 - The second element addresses family planning for men and women with HIV
 - The third and fourth elements focus on women who are HIV-infected, their infants, and their families
- Access to comprehensive MCH services (i.e. ANC, postnatal care, and well-child health) and HIV counselling and testing is central to any effort to reduce mother-to-child transmission of HIV

Comprehensive Approach to PMTCT

- All four elements are essential for the UN goal of a 50% reduction of infants infected with HIV
- The first two elements not only benefit women but can also decrease the proportion of infants infected with HIV by 35% to 45%

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- All four elements are essential if the UN goal for reducing the proportion of infants infected with HIV by 50% by 2010 is to be attained
 - Using the third element alone will only reduce HIV in infants by between 2% and 12%
- The most effective way to reduce the proportion of infants infected by HIV is by preventing primary HIV infection in women (element 1), and by preventing unintended pregnancy among women infected by HIV (element 2)

Element 1: Primary Prevention of HIV

- Primary prevention of HIV is the most effective means of controlling the spread of the disease and minimising the impact
- To ensure that sexually active men and women remain uninfected, **primary prevention efforts** must be a part of any comprehensive country response

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- Primary prevention of HIV is the most effective means of controlling the spread of the disease and minimising the impact on individuals, families, and communities
 - HIV infection cannot be passed on to children if men and women are not infected
 - Decreasing the number of men and women infected with HIV is the most effective way of reducing MTCT

Element 1: Primary Prevention of HIV (2)

The “ABC” of HIV prevention

- **A** =Abstain—Choose not to have sexual intercourse
- **B** =Be faithful—Be faithful to one partner who is not infected with HIV
- **C** =Use condoms correctly and consistently

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- **“ABC”**: an HIV prevention strategy
- Promoting and supporting safe and responsible sexual behaviour and practices is one approach to preventing HIV infection. Strategies include practising abstinence, mutual monogamy, reducing the number of sex partners and using condoms. This is known as the “ABC” approach:
- **A**: It is important to define what abstaining means. It means avoiding sexual contact where there is an exchange of blood, semen, vaginal secretions.
- **B**: This strategy, which is also referred to as “mutual monogamy”, works when: Neither partner has HIV. Partners have sex only with each other. Neither partner is at risk for becoming infected with HIV by another sexual partner or partners.
- **C**: Using condoms implies that partners will practice safe sex
 - with a focus on safety,
 - without implying lack of trust
 - Without blaming or being punitive
- Provide access to male and female condoms

Element 1: Primary Prevention of HIV (3)

Issues for women:

- The successful implementation of the “ABCs” may require support from HCWs in organized programmes
- Factors contributing to women's vulnerability to HIV include poverty, culturally defined roles, lack of information, abuse, violence, and coercion by men who have other partners

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- Healthcare workers can help women address these challenges through education, support and community linkages
- Healthcare workers can also encourage and support young people to delay becoming sexually active

**Element 1:
Primary Prevention of HIV (4)**

Prevention and early treatment of STIs:

- Presence of STIs increases the risk of HIV infection
- Presence of HIV infection tends to worsen the severity of the STI and renders it less responsive to conventional treatment
- Early diagnosis and treatment of STIs can reduce the incidence of HIV in the general population by about 40%

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- There is a close relationship between the other sexually transmitted infections and HIV
- STI treatment services present an opportunity to provide information on HIV infection, MTCT, and referral for testing and counselling
- Both male and female condoms, when used correctly and consistently, can help prevent HIV transmission and reduce the risk of STIs and unintended pregnancy. Male and female condoms should be readily available, whenever possible. Healthcare workers should provide clients with information on how to use condoms, support client to negotiate safer sex and promote joint responsibility for preventing the transmission of HIV
- STI prevention and early treatment is important whether someone is HIV positive or not

**Element 1:
Primary Prevention of HIV (5)**

HIV testing and counselling:

- HIV testing and counselling services should be available:
 - As a routine component of all PMTCT as well as other community and hospital-based services
 - Upon request through testing and counselling centres or sites (also referred to as "VCT" sites) that provide confidential or anonymous testing

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- Testing and counselling should be available to all women of childbearing age and their sexual partners

**Element 1:
Primary Prevention of HIV (6)**

Counselling for women and men who are HIV-negative

- Counselling provides an opportunity for partners to learn how to protect themselves and their infants

Prevent blood-to-blood transmission

- Screen all blood and blood products for HIV according to national guidelines

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- Counselling can also serve as powerful motivation to adopt safer sex practices, encourage partner testing, and discuss family planning.
- Follow standard precautions (which includes Universal Precautions) in the clinic setting

Element 2:
Prevention of Unintended Pregnancies
Among Women Who Are HIV +

- The spread of HIV has made contraception and family planning services more important
- Most women are unaware of their HIV status
- Family planning counselling is critical for preventing unintended pregnancies
- Counselling gives an opportunity to discuss related risks, provide referrals, and is a vital component of reducing maternal and child morbidity and mortality

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- Family planning is part of a comprehensive public health strategy to reduce MTCT by preventing unintended pregnancies
- Referrals can be provided for women known or suspected to be HIV-infected and their partners
- With appropriate support, women who know they are HIV-infected can avoid unintended pregnancies and therefore reduce the number of infants at risk for MTCT

Element 2:
Prevention of Unintended Pregnancies
Among Women Who Are HIV + (2)

- Effective family planning can help:
 - Prevent unintended pregnancies
 - Women who are HIV-infected protect their own health while taking care of their families
- Safe and effective contraception and reproductive health counselling contribute to informed decision-making about pregnancy choices

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- Women should have access to their chosen method of contraception
- In addition, all women should also be encouraged and supported in using condoms
- Male and female condoms prevent not only pregnancy but also HIV and STIs

Element 3:
Prevention of HIV Transmission from
Women Infected with HIV to their Infants

PMTCT *usually refers to specific programmes that:*

- Identify pregnant women infected with HIV
- Provide HIV-infected pregnant women with effective interventions to reduce MTCT

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- PMTCT programmes specifically aim to reduce MTCT among pregnant HIV-infected women.
- Specific interventions to reduce HIV transmission from an infected woman to her child include HIV testing and counselling, antiretroviral prophylaxis and treatment, safer delivery practices, and safer infant-feeding practices

Element 3:
Prevention of HIV Transmission from
Women Infected with HIV to their Infants (2)

PMTCT core interventions include:

- HIV testing and counselling (individual, couple, group)
- ARV treatment or prophylaxis
- Safer delivery practices
- Counselling and support on safer infant-feeding practices

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- Note: ARV prophylaxis given to a pregnant woman who is HIV-infected does not provide long-term benefits to the woman, nor does it prevent HIV transmission to the infant after the early breastfeeding period
- She should be provided with or referred for ongoing treatment, care, and support for her HIV infection
- Module 3, PMTCT Interventions discusses interventions in detail. Note: This curriculum focuses on women infected with HIV-1

Element 3:
Prevention of HIV Transmission from
Women Infected with HIV to their Infants (3)

These interventions work by:

- Identifying women infected with HIV
- Reducing maternal viral load
- Reducing infant exposure to the virus during labour and delivery
- Reducing infant exposure to the virus through safer feeding practices

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Element 3:
Prevention of HIV Transmission from
Women Infected with HIV to their Infants (4)

Partner Involvement in PMTCT:

- PMTCT interventions should be based on the principle that both mother and father have an impact on HIV transmission to the infant
- Both partners should be tested and counselled for HIV
- Both partners need to be responsible for safer sex during pregnancy and breastfeeding
- Both partners should be made provided with information about PMTCT interventions
- Both partners should be responsible for child feeding

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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 42</p>	<p style="text-align: center;">Element 4: Provision of Treatment, Care, and Support to Women Infected with HIV, Their Infants and Families</p> <ul style="list-style-type: none"> • Medical care and social support are important for women living with HIV/AIDS • Women assured of treatment and care are more likely to accept HIV testing and counselling <ul style="list-style-type: none"> – If HIV-positive, they are more likely to accept interventions to reduce MTCT <p style="font-size: small;">Module 2: Introduction to PMTCT of HIV 42</p>	<ul style="list-style-type: none"> • Medical care and social support enable women living with HIV/AIDS to address concerns about their own health and the health and future of their children and families • PMTCT programmes must ensure a continuum of care for HIV-infected women and their families by establishing linkages with programmes that provide ongoing treatment, care, and support for HIV-infected women and their families
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 43</p>	<p style="text-align: center;">Element 4: Provision of Treatment, Care, and Support to Women Infected with HIV, Their Infants and Families (2)</p> <p>HIV-related treatment, care, and support services for women, their infants, and families include the following:</p> <ul style="list-style-type: none"> • Reproductive health care, including family planning • Nutritional support • Prevention and treatment of opportunistic infections • ARV treatment • Treatment of symptoms • Psychosocial and community support • Palliative care <p style="font-size: small;">Module 2: Introduction to PMTCT of HIV 43</p>	<ul style="list-style-type: none"> • To promote long-term care of women who are HIV-infected and their families, it is important to develop and reinforce linkages with programmes offering treatment, care, and support services
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 44</p>	<p style="text-align: center;">Element 4: Provision of Treatment, Care, and Support to Women Infected with HIV, Their Infants and Families (3)</p> <p>Care and support of the infant and child who are HIV-exposed:</p> <ul style="list-style-type: none"> • Infants and children who are born to HIV-positive mothers require regular follow-up care including: <ul style="list-style-type: none"> – immunizations, – HIV testing – Ongoing monitoring of feeding, growth, and development <p style="font-size: small;">Module 2: Introduction to PMTCT of HIV 44</p>	<ul style="list-style-type: none"> • See Module 9, Continuum of Care for Women, Infants and Families with HIV Infection • Children whose mothers are infected with HIV are at higher risk than other children for illness and malnutrition for multiple reasons: <ul style="list-style-type: none"> • They may be infected with HIV and become ill—even when adequate health care and nutrition are provided • Those who receive replacement feeding are at risk of infections due to unsafe preparation of formula • If the mother is ill, she may have difficulty caring for them adequately • Families may be economically vulnerable due to AIDS-related illnesses and deaths among adult relatives

Summary of PMTCT

1. Know your HIV status
 - Routine Counselling and Testing
2. Take ARV's
 - Reduce viral load of mother
 - PEP for infant
3. Choose a safer infant feeding option
 - Replacement feeding
4. Link to follow-up care for family (mother, partner, other children)

- This is what all women need to know about pregnancy and HIV
- For the next few days we will be talking, learning, acting, sharing—this is the message we will try to communicate to all pregnant women throughout the region

PMTCT 1, 2, 3: Protect Your Baby from HIV

- Know your HIV status
 - Routine Counselling and Testing
- Take Antiretroviral medicines
 - to reduce the viral load of mother and PEP for infant
- Choose a safer infant feeding option
 - Replacement feeding



Source: Denise Davis/AFSC

- This is the message we are trying to share with mothers and communicate to the community

PMTCT Integrated Into MCH Services

- Comprehensive MCH services are central to reduce HIV infection in infants and young children
- To be most effective, PMTCT programmes need to be integrated into existing MCH care

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- PMTCT programmes need to be integrated into existing MCH care as part of the broad range of educational and clinical services that help mothers, children, and families lead healthier lives
- Providers of quality antenatal care services already offer many complementary initiatives that support PMTCT programmes such as the Safer Motherhood Initiative, the Baby Friendly Hospitals Initiative, Baby Feeding, and Saving Newborn Lives

PMTCT Integrated into MCH Services (2)

Antenatal care is the most common entry point for women into PMTCT programmes

- Provide HIV information to **all** pregnant women
- Encourage CT
- ANC visits are vital opportunities for PMTCT for:
 - HIV positive women
 - HIV negative women

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PMTCT 1, 2, 3: Health Care Workers Protecting Babies From HIV

1. Give Antiretroviral Medicine - Lower mother's viral load and prophylax the baby
2. Modify obstetric practices to minimize baby's exposure to HIV
3. Support safest infant feeding choice
4. Link to follow-up care for family (mother, partner, other children)



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- This is the message that we as health care providers need to know
- Healthcare workers can normalize HIV by treating it as a potential STI that can impact mother and baby's health. The above steps outline the role of HCW in PMTCT

“Ideal” Care Systems

Family Centered, Multidisciplinary, Culturally Competent Care *with*

- Integrated care and support
- Welcoming facilities
- Competent staff
- Coordinated services *and*
Strong links to community

- Ideal Care systems for HIV care, support and treatment are family centered (woman, partner and other children) and comprised of a multidisciplinary care team which usually includes a physician, nurse, social worker, community health worker

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Multidisciplinary Teams

- Gather different pieces of information
- Bring complementary skills for comprehensive client care
- Utilize variety of communication styles



- A multidisciplinary team can enhance client care because members of the team gather different pieces of information, bring complementary skills for comprehensive client care, and utilize a variety of communication styles in working with the client
- Communication among the multidisciplinary team members is critical
 - Think about several blind men all touching a different part of an elephant – separately, they all have a very different (and inaccurate) picture of what the elephant looks like
 - If they communicate well with each other and share information, they will get a more complete and accurate picture of the elephant (the client)

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Care Planning

- Shared information
 - Problem oriented
 - Non-judgmental
 - Respects family's confidentiality
 - Assures involvement of **all** team members

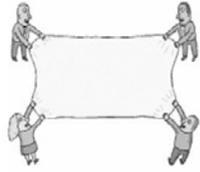


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Develop Local Consortia

- Build upon existing strengths
- Avoid duplication of services
- Identify "best practices"
- Build safety nets for clients
- Support shared goals

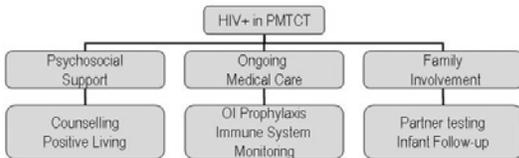


Module 2: Introduction to PMTCT of HIV

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- HIV often challenges existing health care systems
- Building on existing strengths:
 - Expand infrastructure
 - Cumulative experience
- Stigma and discrimination present barriers to women who may be reluctant to continue in care after the birth of the baby
- Thinking through how links to comprehensive HIV care services will function and developing formal interagency communication mechanisms will enhance continuity of care

PMTCT Continuum of Care: Links to Treatment and Care For Family



- Pregnant women can be treated for HIV effectively
- Careful history and PE can identify women eligible for treatment
- Effective links to HIV care are essential for effective PMTCT

Module 2: Introduction to PMTCT of HIV

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A Word About Stigma and Discrimination

- HIV/AIDS-related stigma is the greatest challenge to slowing the spread of the disease at the global, national, and community/provider level*
- Working to prevent stigma and discrimination and protecting human rights are the most effective responses to the HIV/AIDS epidemic

*UNAIDS Best Practices Collection, 2004

Module 2: Introduction to PMTCT of HIV

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- HIV/AIDS stigma is often more severe than stigma associated with other diseases
- HIV transmission is believed to be under the control of the individual, so unlike tuberculosis, for example, people with HIV are often blamed for their illness
- In many settings, people who are affected by HIV are the same people who are already marginalized in society, e.g., poor people and indigenous people
- Session 8 is solely devoted to Stigma and Discrimination

Key Points

- Worldwide, the most successful intervention in the HIV epidemic is PMTCT
- PMTCT programmes can reduce risk of HIV transmission by 70%
- Risk of MTCT of HIV without intervention is approximately 25–40%
- Effective PMTCT programmes provide access to interventions that can significantly reduce the rate of MTCT
- MTCT of HIV can occur during pregnancy, labour and delivery, and through breastfeeding

Module 2: Introduction to PMTCT of HIV

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Key Points (2)

- A comprehensive approach is needed to prevent HIV infection in infants and young children
- The four elements of the comprehensive approach to PMTCT are:
 - Primary prevention of HIV infection
 - Prevention of unintended pregnancies among women infected with HIV
 - Prevention of HIV transmission from women infected with HIV to their infants
 - Provision of treatment, care, and support to women infected with HIV, their infants and their families

Module 2: Introduction to PMTCT of HIV

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Key Points (3)

- ARV prophylaxis given to an HIV-infected pregnant woman does not provide long-term benefits, nor does it prevent HIV transmission to the infant after the early breastfeeding period
- Ongoing treatment or a referral should be provided for the HIV-infected pregnant woman's care and support
- MCH services, especially ANC, are an entry point into the range of services required to meet the needs of HIV-infected women and their families

Module 2: Introduction to PMTCT of HIV

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Key Points (4)

- ANC in the Bahamas must include information about HIV in the context of safe motherhood for all pregnant women
- PMTCT 1, 2, 3: To protect babies from HIV, HCWs should: 1) Give ARVs; 2) Modify obstetrical practices; and 3) Support safer infant feeding
- Successful PMTCT programmes link women and their families to health and community services that provide a continuum of care

Module 3 PMTCT Interventions



Total Module Time: 270 (4 hours 30 minutes)

Objectives: By the end of this session, participants will be able to:

- Understand the difference between ARV treatment and ARV prophylaxis
- Understand the criteria for starting pregnant women on ARV treatment
- Identify ARV regimen options for pregnant women infected with HIV in the Bahamas
- Discuss the antenatal management of women infected with HIV and women of unknown HIV status
- Explain the management of labour and delivery in women infected with HIV and women of unknown HIV status
- Discuss postpartum care of women infected with HIV and women of unknown HIV status, including newborn feeding, signs and symptoms of post-natal infection and family planning
- Discuss the immediate newborn care of infants born to mothers who are HIV infected and mothers of unknown status

PMTCT Interventions

Module 3 - PMTCT interventions

Learning Objectives

- Understand the difference between ARV treatment and ARV prophylaxis
- Explain what ART is and its mechanism of action in the body
- Understand the criteria for starting pregnant women on ARV treatment
- Identify ARV regimen options for pregnant women infected with HIV in the Bahamas
- Discuss the antenatal management of women infected with HIV and women of unknown HIV status

Module 3 - PMTCT interventions

Learning Objectives (2)

- Explain the management of labour and delivery in women infected with HIV and women of unknown HIV status
- Discuss postpartum care of women infected with HIV and women of unknown HIV status, including newborn feeding, signs and symptoms of post-natal infection and family planning
- Discuss the immediate newborn care of infants born to mothers who are HIV infected and mothers of unknown status

Module 3 - PMTCT interventions

Important Studies to Understand PMTCT Interventions

- Several studies key to understanding PMTCT Interventions
 - ACTG 076: 1991-1994
 - Women & Infants Transmission Study (WITS): 1990-2000
 - Program for HIV Prevention and Treatment—Phase 2 (PHPT-2): 2001-2004

Module 3 - PMTCT Interventions

- ACTG (AIDS Clinical Trial Group) 076 was a trial of over 477 pregnant women with HIV infection. Women in the experimental group received ZDV during pregnancy from 34 weeks gestation, during labor and delivery, and their infants received oral ZDV for 6 weeks after birth
 - The study was halted in February 1994 when interim results showed a significant difference in transmission rate between the ZDV and placebo groups (Connor et al., 1994)
- Women & Infants Transmission Study (WITS)
 - In this study, HAART was the most effective way to prevent mother-to-child transmission of HIV
 - A high viral load at delivery is associated with a higher risk of HIV transmission to the infant
- PHPT-2: "Nevirapine (NVP) plus zidovudine for the prevention of perinatal HIV" – Study carried out in Thailand
 - Despite the best ZDV prophylaxis, HIV transmission still occurs in utero and during labour and delivery. This study (2001-2004) was based on the hypothesis that the use of the potent antiretroviral, nevirapine, during labor and delivery in addition to ZDV prophylaxis may substantially reduce intrapartum transmission.
 - Final analysis revealed lower rate of transmission in ZDV/NVP arm than in NVP/placebo arm (rates considered "equivalent")
 - Addition of infant NVP dose appeared to be most important for women with low CD4 counts (< 200)

Slide 5

Initial PMTCT Trials: Conclusions

- While 3-part AP/IP/PP therapy is most effective, both AP/IP and IP/PP ART regimens can significantly reduce transmission
- Longer (starting at 28 weeks GA) AP therapy is more effective than shorter (starting at 36 weeks)
- Results demonstrate utility of both viral load reduction at delivery and of neonatal pre- and post-exposure prophylaxis
- AZT or NVP for PMTCT has efficacy even in breastfeeding populations (though less effective than if formula feeding is used)

Module 3 - PMTCT Interventions

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- This slide summarizes some of the key findings from several international trials

Slide 6

The Impact of ARV Treatment on AIDS Incidence and Mortality: The Bahamas

- Decrease in AIDS cases by 24.4% from 1997 to September 2000
- Decrease in AIDS mortality by 56.1% from 1997 to 2000
- AIDS mortality rate among infants dropped from 2.95 in 1994 to 0.00 per 1,000 live births in 2002, and for children from 32.60 to 3.75 per 100,000 population (an 89% reduction)

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Slide 7

Important Terms

- ART: AntiRetroviral Treatment/Therapy
- ARVs: AntiRetroVirals
- Triple Therapy: Three Antiretrovirals
- HAART: Highly Active AntiRetroviral Treatment/Therapy

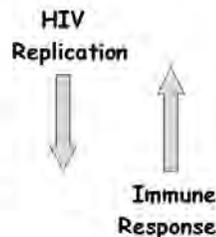
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- Having many different terms can be confusing but they all refer to the same thing:
 - The use of antiretroviral drugs.
- People just use different abbreviations

Slide 8

What are Antiretrovirals?

- ARVs are drugs which inhibit replication or fusion therapy reversing the progression of HIV disease
- ARVs reduce the ability of the HIV virus to replicate
- In turn, this increases the ability of the body to fight disease



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- As HIV replicates inside CD4 cells, it destroys those CD4 cells and gradually weakens the immune system
- Therefore, by reducing the ability of HIV to replicate, ARVs control HIV infection and therefore protect the immune system which would otherwise be destroyed
- With the immune system restored and protected, the body is then able to fight infections as in uninfected individuals

Slide 9

ARVs at Work....

- HIV uses the CD4 cell as an HIV factory
- ARVs get inside the factory and reduce the ability of the virus to replicate
- Each kind of ARV blocks the virus in a different place
- In the end, fewer viruses are made



Module 3 - PMTCT Interventions

- ARVs inhibit replication in the CD4 cell
 - Normally, HIV uses the CD4 cell like a factory
 - It needs the machinery inside the factory (CD4 cell) to replicate. So it enters the factory and starts replicating, using the CD4 cell's machinery
 - Millions of new viruses are released from the factory (CD4 cell)
 - ARVs prevent processes from occurring in the CD4 cell, so that new viruses are no longer produced
 - There is therefore less virus around to infect and destroy other CD4 cells

Benefits of ARV Therapy

- Restores immunity (increases CD4 cell count)
 - Alters/reverses course of existing opportunistic infections
 - Prevents opportunistic infections
 - Decreases hospitalizations
- Increases survival
- Improves quality of life
- Restores hope
- Reduces HIV transmission
- Benefits both adults and children
- Reduces vertical transmission from mother to child

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- There are many benefits to using antiretroviral therapy
 - Transmission: major reductions in vertical mother-to-child and by lowering the amount of virus in the blood, it is expected that other forms of HIV transmission may be reduced as well
- The availability of therapy may be an incentive for voluntary HIV counseling and testing, which increases identification of HIV-infected individuals, allowing them to access healthcare and prevent further transmission

Classes of ARVs

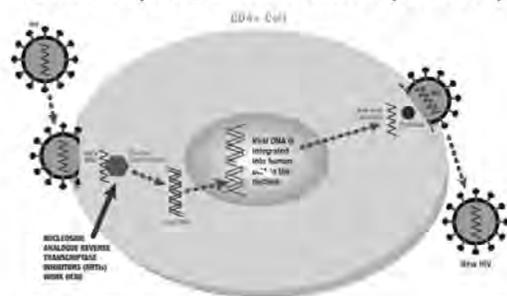
- Each class acts at a different stage and in a different way, to prevent HIV from replicating within the CD4 cell
 - Nucleoside Reverse Transcriptase Inhibitors (NRTIs)
 - Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)
 - Protease Inhibitors (PIs)
 - Fusion Inhibitors

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- There are three enzymes involved in replication of HIV. Without them replication cannot occur
 - The first, *Reverse Transcriptase*, is needed at the beginning in order to change viral RNA into DNA
 - *Integrase* helps viral DNA be integrated into the CD4 cell DNA
 - *Protease* is essential at the end, for assembling new viral particles into new viruses
- ARVs stop these enzymes from working, thus slowing down the process of replication

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)



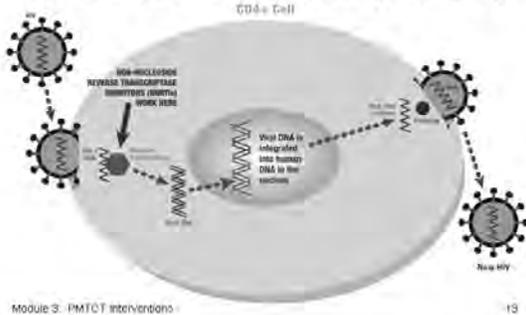
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- NRTIs method of action:
 - NRTIs work by preventing the development of functional viral DNA
- NRTIs:
 - Stavudine (d4T)
 - Zidovudine (ZDV, AZT)
 - Lamivudine (3TC)
 - Didanosine (ddI)
 - Tenofovir (TDF)
 - Abacavir (ABC)

Slide 13

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)



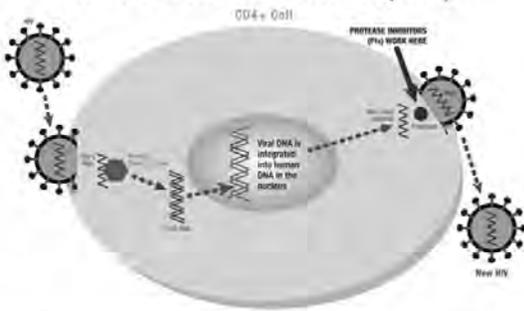
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- NNRTIs also work at the beginning, inhibiting Reverse Transcriptase, but they work in a different way than NRTIs
- They hook on to the actual enzyme (reverse transcriptase) and stop it from working
- The result is the same as the NRTIs: the DNA copy of viral RNA cannot be made and therefore cannot be integrated into the nucleus
- Again, the life cycle breaks down
- NNRTIs:
 - Efavirenz (EFZ)
 - Nevirapine (NVP)

Slide 14

Protease Inhibitors (PIs)



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- Protease is essential for assembly of new viral particles. Without it, new viruses cannot be assembled
- PIs prevent protease from assembling new virus in the final stages of the life cycle
- PIs:
 - Lopinavir/ritonavir (LPV/r)
 - Nelfinavir (NFV)
 - Saquinavir (SQV/ritonavir)

Slide 15

What Is Resistance?

- HIV reproduces very quickly
- Errors in replication
- New generation differs slightly previous
- Improved ability to reproduce, despite presence of ARVs
- This is Resistance!

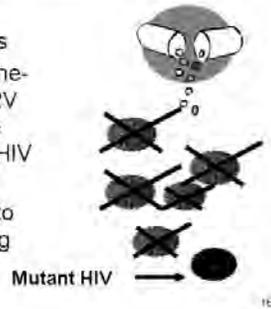
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- HIV reproduces very quickly, making billions of new viruses every day
- Because the virus often makes errors while copying itself, each new generation of viruses differs slightly from the one before
- Some changes to the structure of the virus can improve its ability to reproduce despite high levels of anti-HIV drugs being present
- These new changes to the structure of the virus make it able to reproduce even in the presence of ARVs and thus, are said to be resistant to those drugs

Mutating Viruses

- HIV grows
- As it grows, it mutates
- With monotherapy (one-drug therapy), the ARV is able to kill all of the original (unmutated) HIV
- BUT the MUTATED virus is RESISTANT to the antiretroviral being used

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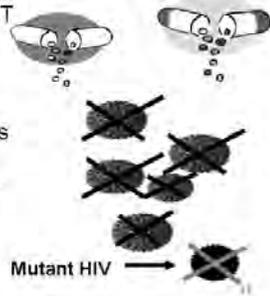


- Normally, HIV will continue to replicate within the CD4 cells. The viruses are all original virus, becoming more and more in number as they replicate
- Over time, as mistakes are made during replication, mutant forms of virus arise (solid black in this diagram), a process known as mutating
- If one ARV drug is given, it may be able to kill off all the original virus – BUT the ARV drug will have no effect on the mutant (black) virus
- This mutant virus is said to be resistant to that ARV drug being used

Stopping the Mutated Viruses

- Mutated HIV grows because it is RESISTANT
- Now we need another strategy... Two drugs together (dual therapy)
- So, if the mutated virus is resistant to one drug, it can be destroyed by the second drug

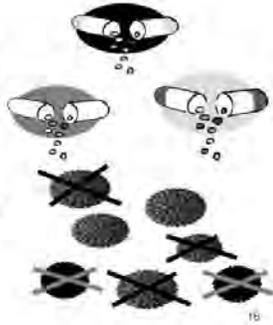
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- The mutated virus then multiplies rapidly, untouched by the ARV drug being taken. This mutated virus will continue to infect CD4 cells, destroying them in the process and slowly weakening the immune system even though an ARV drug is being taken
- But if you add in another, different ARV drug, a double-pronged attack on both the original virus and any mutant viruses occurs. Even if the virus is resistant to one drug, the second drug is able to destroy that virus
 - This is far more effective in controlling HIV reproduction and any subsequent attack on the immune system

Triple Therapy

- Two drugs can keep HIV from multiplying, even if it has mutated
- BUT, three drugs can work even better!
- Unfortunately, triple therapy is NOT a cure
- It will never remove HIV from the body completely



Module 3 - PMTCT interventions

- In the early days of ARVs, monotherapy was used and while people's health improved, it was short-lived due to emerging resistance
- We now know that triple therapy, the use of three different drugs, is the most powerful way to stop HIV replicating and allowing mutant viruses to proliferate
- Triple therapy may have a powerful effect on reducing the number of viruses in the blood to a very low level but unfortunately, it will never remove HIV from the body completely
- Levels of virus in the blood may drop and even be undetectable, (They cannot be found with the usual blood tests.) but the virus is still there somewhere. It gets in to many different parts of the body, hiding away, only to re-emerge at a later date

A Big Concern!

If resistance develops:

- Drugs start failing as virus is able to replicate
- As virus replicates, immune system is damaged
- OIs occur, progressing to AIDS

Also, there are only limited drug options available!

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- The threat of resistance and its role in treatment failure cannot be underestimated
- If resistance occurs, people who have initially responded well to ARVs will become unwell again as the ARVs can no longer control the new mutant viruses. In turn, the mutant virus replicates, damages the immune system and OIs commence again
- Also, if drugs fail, there are not many others to try after that

Cross Resistance

Resistance to a drug in one class of ARV commonly results in resistance to other drugs within that same class!

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- Importantly, if an individual becomes resistant to one ARV drug, they may well be resistant to other drugs in that same class
 - For example, if resistance occurs to D4T, the individual may also be resistant to AZT, although they may have never taken AZT
- AZT can therefore not be taken and drug options are limited for that client

Slide 21

Everyone Is Different! Important!!

People respond differently to ARV drugs

While one regimen may suppress viral replication well in one person, another person may develop resistance

Module 3 - PMTCT interventions

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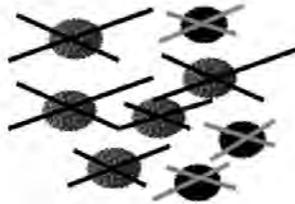
- While one regimen may suppress viral replication well in one person, it may not in another
- Whenever we talk about HIV & ARVs, it must always be stressed that everybody is different. What may be true for one person, may not be true for another
- One person may develop resistance very quickly and rapidly deteriorate, whilst another may not develop resistance and stays well for a long time

Slide 22

Reducing Resistance

The BEST way to reduce the development of resistance is...

to ensure maximum viral suppression using three drugs, taken as the correct dose, at the correct time, in the correct way



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- If maximum suppression of the virus is maintained at all times, the chance of mutant viruses occurring is small indeed
- The best way to get maximum suppression of the virus is through 100% adherence! If doses are missed or not taken properly, mutant virus will take the opportunity of this “gap” in ARV circulating in the blood and start replicating
- Before long, those mutant viruses become plenty in number and resistant to the ARVs

Slide 23

Public Health

- Resistant HIV may be transmitted to someone else!!
- If someone is infected with resistant HIV, they will be resistant to one or more ARVs, even though they have never taken them before
- Potentially, ARVs could become less helpful for people across Sub-Saharan Africa due to resistance, which is being seen in Europe and the US
- Abstinence and safer sex practices are the best ways to prevent this from occurring

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- The importance of resistance does not stop at an individual level. ARV-resistant HIV may be transmitted to other people
- So if someone has developed resistance to one or more ARV drugs, and transmits HIV to someone, that person will also have HIV that is resistant to those drugs
- He/she will be unable to take those drugs when he needs to, even though he has never had them before
- This emphasizes the importance of public health education about the transmission of HIV and the role of nurse in providing this education



Handout 3.1

ARVs and Side Effects

Generic Name	Trade Name	How Supplied	Notes	Side Effects
Nucleoside Reverse Transcriptase Inhibitors (NRTIs)				
Didanosine (ddl)	Videx	Chew Tab (white; round) 25 mg, 50 mg, 100 mg, 150 mg; Powder for oral solution in packets and bulk bottles	ddl liquid: mixed with antacids, Shake well; refrigerate; stable for 30 days. Take on an empty stomach	Common: Nausea/vomiting/diarrhea (N/V/D), abdominal pain Severe: peripheral neuropathy; electrolyte abnormalities; hyperuricemia. Uncommon: pancreatitis, increase liver function tests (LFTs); retinal depigmentation
Lamivudine (3TC)	Epivir	150 mg white tab; Oral solution: 10 mg/ml (strawberry, banana)	With or without food Active against Hep B Store oral solution at room temp.	Common: Nausea/diarrhea, headache (HA), fatigue; skin rash; abdominal pain Severe: pancreatitis
Stavudine (d4T)	Zerit	Cap: 15 mg, 20 mg, 30 mg, 40 mg. Oral powder for solution: 1 mg/ml	With or without food Oral solution: shake, refrigerate, stable for 30 days	Common: HA; N/V/D; skin rash; increased LFTs Severe: peripheral neuropathy; pancreatitis
Zidovudine (AZT, ZDV)	Retrovir	Cap 100 mg (white with blue stripe); tab: 300 mg (white, round, biconvex); Syrup: 10 mg/ml; IV: 10 mg/ml	Take with food Hematologic toxicity; interrupt therapy or decrease dose, or use erythropoietin	Common: Hematologic toxicity; HA Other: myopathy; myositis; liver toxicity
Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)				
Efavirenz (Stocrin)	Sustiva	Cap: 50 mg, 100 mg, 200 mg	With or without food; avoid high fat	Common: Rash; sedative effects; HA, N/D Other: Increase LFTs; rare – hepatitis
Nevirapine (NVP)	Viramune	Tabs: 200 mg (oblong, white, scored); Oral liquid: 10 mg/ml sweet tasting off-white liquid	With or without food Don't crush tabs because of salt form	Common: Rash; sedative effects; HA, N/D Other: Increase LFTs; rare - hepatitis

Side Effects

- Common perceptions of ARVs:
 - "Aren't they toxic?"
 - "People say they are like poison"
- ARVs do have side effects but it should not be forgotten that many other drugs do too
 - Because those drugs are more common, they are not as often discussed
- Side effects of ARVs depend on the person and the drug

Module 3 - PMTCT Interventions

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- There are many myths circulating the world about ARV drugs. The majority of these relate to the side effects of ARV drugs. This has contributed to wide spread fear of ARVs or misunderstanding about them
- It must always be stressed that **everyone is different. Not all drugs affect people in the same way**

Side Effects: Acceptable

- Transient
 - May be experienced in the first few weeks
 - Other medications can be used to manage/alleviate these symptoms
 - SUPPORT needed
 - Encourage adherence

Module 3 - PMTCT Interventions

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- Side effects experienced will differ in severity
- Transient
 - May include headache, nausea, diarrhea, vomiting
 - In most cases, the physician will decide that the client should continue the drugs while receiving careful management of symptoms (e.g. analgesia, anti-emetics).
 - clients need IMMENSE SUPPORT and ENCOURAGEMENT to continue with their regimen through these side effects
- Nausea or diarrhoea
 - Several ARV agents commonly result in gastrointestinal symptoms such as nausea or diarrhoea
 - Such as the buffered formulation of didanosine or ddI, lopinavir/ritonavir, saquinavir and nelfinavir
 - These side effects may increase risk for dehydration in tropical settings

Side Effects: Unacceptable

- Severe, unsafe
 - Some side effects may be severe
 - The doctor may need to change the ARVs
 - Early identification and prompt, appropriate management is essential

Module 3 - PMCT Interventions

- May include rash, hepatitis, lactic acidosis, pancreatitis, hyperlipidaemia, peripheral neuropathy
- Should be detected by the routine laboratory monitoring
 - For example, blood tests will show raised levels of liver function
- Alternatively, rashes, jaundice or numb limbs may be visually observed or verbally reported. Consult the physician if you believe a client's ARV drugs should be stopped due to severe side effects
- Stress that ALL side effects must be reported to the physician so that he/she can decide how to manage them appropriately

Signs of Adverse Effects and Toxicity

- Clinical signs/symptoms:
 - Rash
 - Jaundice
 - Abdominal pain
 - Numbness or pain in extremities
- Laboratory abnormalities (i.e. bone marrow, erythrocyte, neutrophils, platelets)

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- Toxicity is not uncommon and may be serious or severe
- Individuals on antiretroviral therapy must also be monitored for evidence of adverse effects or toxicity
- Significant toxicity may be detected through laboratory testing, even when signs or symptoms are absent

Slide 28

Antiretroviral Treatment vs. Prophylaxis for PMTCT

- ARV treatment
 - Long-term use of antiretroviral drugs to treat maternal HIV/AIDS and for PMTCT
- ARV prophylaxis
 - Short-term use of antiretroviral drugs to reduce HIV transmission from mother-to-infant

Module 2 - PMTCT interventions

- Antiretroviral treatment during pregnancy can improve a woman’s health and decrease the risk of transmitting HIV to the infant by reducing the maternal viral load
 - Treatment is for the mother’s own health
- Antiretroviral prophylaxis does not treat maternal HIV or provide long-term protection for the infant
 - Prophylaxis is only used during pregnancy to decrease the viral load

Slide 29

Antiretroviral Treatment

- Effective for both treating maternal HIV infection and for PMTCT
- Improve the health of the woman
- Decrease the risk of transmitting HIV to the infant by decreasing the amount of virus in the mother's blood

Module 2 - PMTCT interventions

- Pregnant women eligible for ARV treatment according to national guidelines should initiate treatment as soon as it is practical. While the primary purpose is to improve and protect the health of the mother, the treatment is expected to substantially reduce MTCT risk

Slide 30

When to Initiate

- Based on gestational age and CD4 count
- Treatment may be considered to start right away if the woman is very ill
 - If the benefits of treatment outweigh any potential risk to the foetus
- Want to get women on ARV treatment as soon as possible to lower viral load

Module 2 - PMTCT interventions

- ARV prophylaxis regimens are usually chosen based on national guidelines
- By stabilising a woman’s health and lowering her viral load, risk of transmission of HIV from mother to child is decreased

Slide 31

Delaying the Start of ARVs

- Reasons to delay treatment until after the first trimester:
 - Pregnant women suffer frequently from nausea, a common side effect of most ARVs
 - Effect of ARVs on important foetal development during the first trimester
 - Forming of vital organs such as the brain

- It is important to note that the recommendation is to not start any medication during 1st trimester unless ABSOLUTELY necessary

Module 3 - PMCT Interventions

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Slide 32

Efavirenz (EFV)

- An ARV that is potentially dangerous to the development of the foetus
- Not recommended in the first trimester of pregnancy
- For this reason, EFV should not be given to women of childbearing age who may become pregnant

- In the Bahamas, EFV is not routinely given to women of child bearing age.
- There have been some women who insist they will not be having any more children, but still become pregnant again. Thus the risk of danger is too great in women who are still able to have children.

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Slide 33

Bahamas National Protocol for Reduction of Vertical Transmission of HIV

- To reduce transmission of HIV infection from mothers to their babies
- To determine HIV infection in babies as early as possible in order to provide optimum treatment
- To enhance a better quality of life for mother and baby

- The above objectives reflect the Bahamas Protocol for prevention of mother to child transmission of HIV which is guided by the WHO recommendations for antiretroviral prophylaxis regimens to prevent MTCT (Appendix 3A)
- The WHO recommendation is that the selection of ARV regimens for prophylaxis **should be adapted to a woman's specific circumstances**. For example, ARV regimens for women who present early in antenatal care or only around the time of delivery or with a possible infection like tuberculosis will vary

Module 3 - PMCT Interventions

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Slide 34

Bahamas National Protocol for ART in Pregnancy

- All HIV positive pregnant women receive baseline CD4 and viral load testing to inform course of treatment.
- **PROTOCOL ON LABORATORY TESTING AND VISIT SCHEDULING BY GESTATION AGE**
 - Confirmed HIV positive status and gestation age
 - Confirmed HIV positive status with limited or no antenatal care admitted in labour
 - Inconclusive/indeterminate HIV test results of pregnant women by gestation age
 - Pregnant women of unknown /known HIV status with no antenatal/infectious disease care, who delivers without clinical care

Module 5 - PMTCT interventions

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- The Bahamas national protocol for the reduction of MTCT provides detailed recommendations on laboratory tests to be conducted based on when the woman presents for care during pregnancy and her stage of pregnancy
- All HIV positive pregnant women attending antenatal clinic receive baseline CD4 and viral load testing to inform course of treatment

Slide 35

Regimen I

	Initiation	Day 15
HIV positive pregnant women with CD4 count < 250/mm3	Nevimune (Nevirapine) 200mg P.O. O.D for 14 days	Increase Nevimune 200 mg/tablet P.O. BID
	Duovir (Combivir) AZT 300/3TC 150mg per tablet 1 tablet P.O BID	Continue the Duovir Dosing BID

Module 5 - PMTCT interventions

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- Using ARVs in combination is more effective for PMTCT than using one drug
- Women who enter care prior to 14 weeks with CD4 <250 need treatment immediately. These women require treatment for their own health
- Treatment continues until delivery

Slide 36

Regimen I: Nevirapine Precautions

- Rash experienced during the 14 day lead-in period of nevirapine 200 mg day
 - Do not increase dose
 - Immediate medical evaluation required
- Severe rash or rash accompanied by constitutional findings.
 - Nevirapine should be discontinued
 - Immediate medical attention required

Module 5 - PMTCT interventions

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- Before prescribing NVP, the HCW should ask the client specifically about skin rash or itching for a baseline
- Steven's Johnson Syndrome and Drug-induced hepatitis can occur if not discontinued

Nevirapine Rash



Module 3: PMTCT interventions Photo courtesy of Roy Colven 37

Steven's Johnson Syndrome



Module 3: PMTCT interventions Photo courtesy of Roy Colven 38

Tuberculosis and Antiretroviral Treatment in Pregnancy

- When a pregnant woman has both HIV and TB, medications need to be monitored very closely to avoid potential side effects and interactions

- The Bahamas follows WHO recommendations. See **Appendix 3C** Clinical Situation F (WHO recommendations, 2005) for additional information on how to manage pregnant HIV-infected women with TB

ARV Prophylaxis

- All HIV-infected women who are not eligible* for ARV treatment should be offered prophylaxis for PMTCT
- WHO recommends using combination ARV prophylaxis regimens for PMTCT
- Antiretroviral prophylaxis alone will not protect breastfeeding infants from the risk of HIV
- Combination regimens reduce the risk that the woman will develop resistance to ARV drugs

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- *not eligible* means the women's CD4 count is 250 or greater, they're not in stage 3C (see appendices 1-A and 1-B)

Regimen II

HIV positive pregnant women with CD4 count $\geq 250/mm^3$	Nelfinavir (Viracept) 1250 mg (250 mg per tablets, 5 Tablets) P.O. BID and
	Duovir (Combivir) AZT 300/3TC 150 mg per tablet 1 tablet P.O. BID

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- Regimen II is both prophylaxis and treatment. The woman who does not need it for her own health also benefits. Her CD4 increases and her V/L becomes undetectable
- This in itself is therapeutic

Regimen II: Nelfinavir Precautions

- Nelfinavir (NFV) is a protease inhibitor
- Protease inhibitors can cause an increase in lipids and glucose
 - Hyperglycemia is a concern
 - Hyperlipidemia can also be an issue
- Women on this medication need to be monitored very closely

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Regimen III

Given to ALL women with HIV and women of unknown status at Labour/Delivery regardless of what type of care, if any, that they have had up to this point

IV AZT

Post-partum

- + Post delivery mother:
 - Review initial CD4 counts, viral load, SMAC 25 and FBC with differential results taken prior to ART
 - CD4 < 250mm³ and or VL > 50,000 – continue ARVs and follow client using the adult guidelines
- + Post delivery Infant:
 - Oral AZT 2 mg/kg/bwt administered 6 hours post delivery and six weeks supply given at discharge with instructions to be administered every 6 hours
 - Baseline blood screening HIV-1 DNA PCR, FBC with Differentials, etc.

REMEMBER:

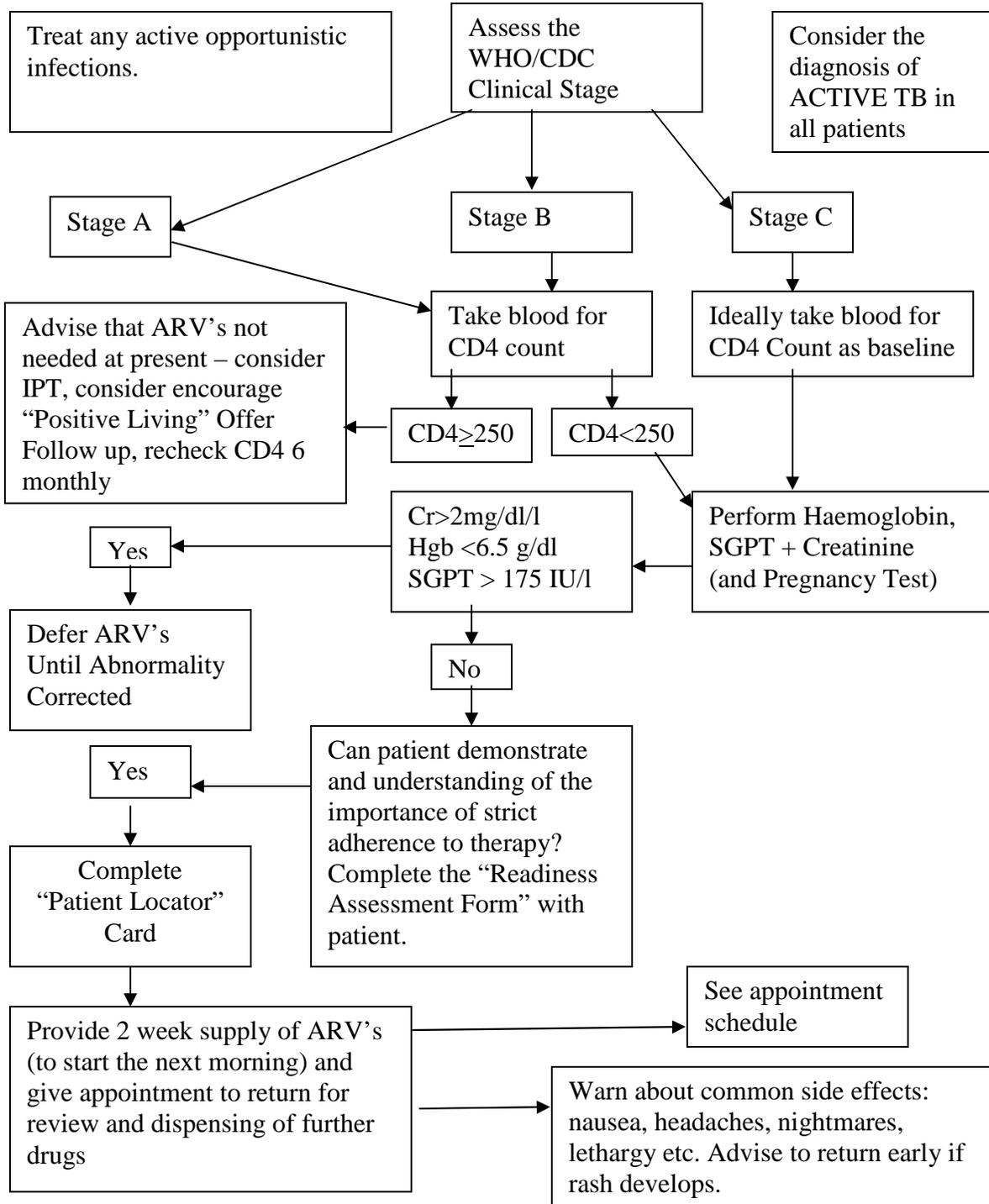
PMTCT Interventions will only be effective if women and their infants receive them!



Handout 3.2

ARV Commencement Algorithm for Adults and Adolescents

Patient education regarding HIV in general and adherence counselling should be given at each visit, before ARV's are started. A patient should show they can keep at least 3 appointments before ARV's are prescribed.



Antenatal Management of Women Infected with HIV and Women of Unknown HIV Status

Module 3 - PMTCT Interventions

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- Antenatal visits are vital opportunities for PMTCT for all pregnant women
- PMTCT services are usually established within the existing ANC infrastructure
- ANC and PMTCT services share the same target population and their goals are similar. Additionally, antenatal care can reduce the risk of MTCT of HIV

ANC and PMTCT: COMPATIBLE GOALS

- ANC improves the general health and well-being of mothers and their families
- Good maternal healthcare is beneficial on multiple levels:
 - Improves pregnancy outcomes
 - Helps women with HIV stay healthy longer and care for their children better

Module 3 - PMTCT Interventions

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- In the Bahamas HIV-related care for pregnant women with HIV should be integrated into ANC
- By integrating PMTCT initiatives into existing ANC, PMTCT services can be scaled up more quickly with immediate access to ANC clients. Integrated care also ensures that the new PMTCT services benefit from the substantial expertise and experience in the existing ANC infrastructure

ANC and PMTCT: COMPATIBLE GOALS (2)

- Routine provision of PMTCT interventions within ANC has the advantage of normalising the following services:
 - Education about HIV (prevention, safer sex)
 - HIV testing and counselling (partner and couple)
 - Prophylaxis or treatment (on-site or by referral)
 - Infant-feeding counselling and support
 - Screening, prevention and treatment of OIs and other HIV-related conditions
 - Care, treatment and support for HIV infection
 - Diagnosis and treatment of STIs

Module 3 - PMTCT Interventions

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- **HIV testing is the “gateway” to PMTCT**
- VCT should be part of HIV counselling and testing
- HIV testing and counselling is the critical initial step in implementing PMTCT interventions. Determining the HIV status of a client enables healthcare workers to provide the appropriate PMTCT interventions.

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Antenatal Management for PMTCT

- ANC for women infected with HIV
 - Includes all of the basic services for pregnant women who are not HIV-infected
 - Care should be expanded to address the specific needs of women infected with HIV

Module 3 - PMTCT Interventions

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- Prevention, screening and treatment of HIV-related conditions, including opportunistic infections, can greatly improve the health of pregnant women with HIV infection.
- Diagnosis and treatment of STIs reduces MTCT of HIV infection

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Antenatal Management for PMTCT (2)

- Pregnant women with HIV are at higher risk for common infections due to a compromised immune system
- HIV-related conditions can increase the risk of MTCT
 - Prevention, assessment and management of these conditions is very important

Module 3 - PMTCT Interventions

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Brainstorm

- What are some common HIV-related conditions?



Module 3 - PMTCT Interventions

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- TB is a leading cause of mortality among all people who are infected with HIV
- Prevention, assessment and management of these conditions, including opportunistic infections, can reduce rates of illness and death among pregnant women who are HIV-infected and reduce the risk of preterm labour and delivery, thereby reducing the risk of MTCT

PCP and TB

- Healthcare workers should follow national protocols for prophylaxis for HIV-related conditions including TB and Pneumocystis pneumonia (PCP)
 - Cotrimoxazole (Bactrim) preventive therapy has been shown to prevent some bacterial pneumonias, some forms of salmonella sepsis, toxoplasmosis and certain causes of diarrhoea
 - Bactrim can be used in 2nd/3rd trimester

MODULE 3 - PMTCT Interventions

PCP and TB Protocols

- PCP: Cotrimoxazole 960 mg OD (1DS or 2SS tablets) should be offered to all symptomatic HIV adult clients, unless allergic
- TB: Isoniazid Preventative Therapy (IPT) should be considered for asymptomatic clients with HIV
 - Offered only under research conditions in context of feasibility studies

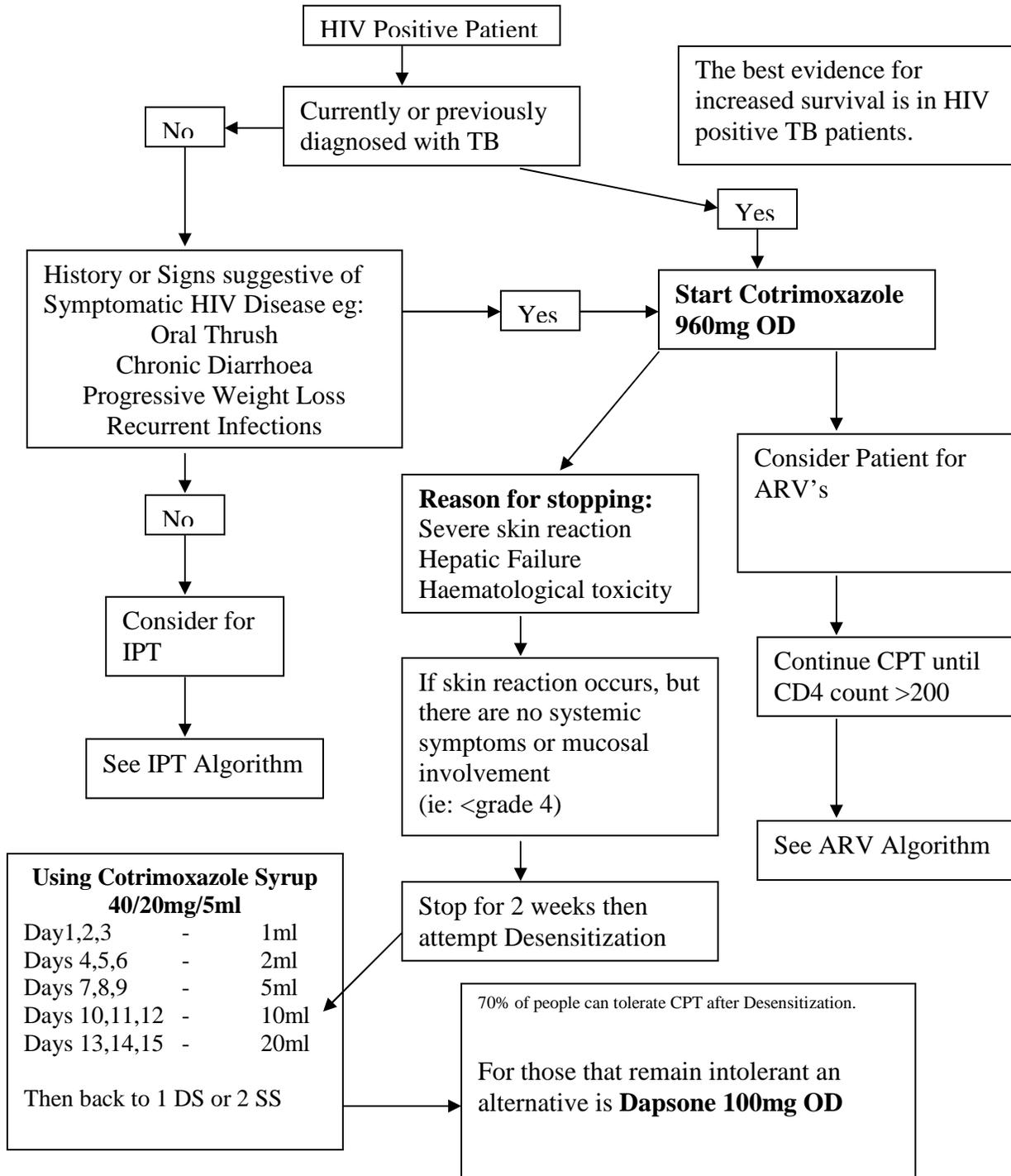
MODULE 3 - PMTCT Interventions

- Refer to Handout 3.3 for the complete version of these protocols

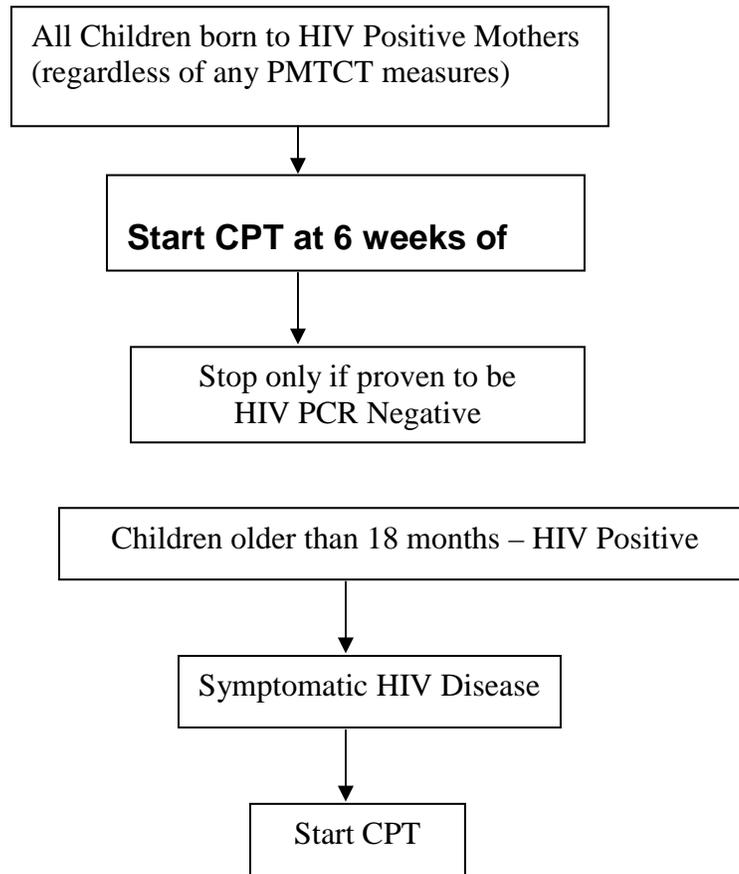


Handout 3.3: Cotrimoxazole Preventative Therapy – Adults

Cotrimoxazole 960mg OD (1DS or 2SS tablets) should be offered to all adult patients who have symptomatic HIV, unless allergic. Frequently in women who are pregnant or breastfeeding, the benefits outweigh the risks and these issues should be discussed with patient. CPT has proven preventive activity against PCP, bacterial pneumonia, salmonella sepsis, toxoplasmosis and certain causes of diarrhea.



Cotrimoxazole Preventative Therapy- Children

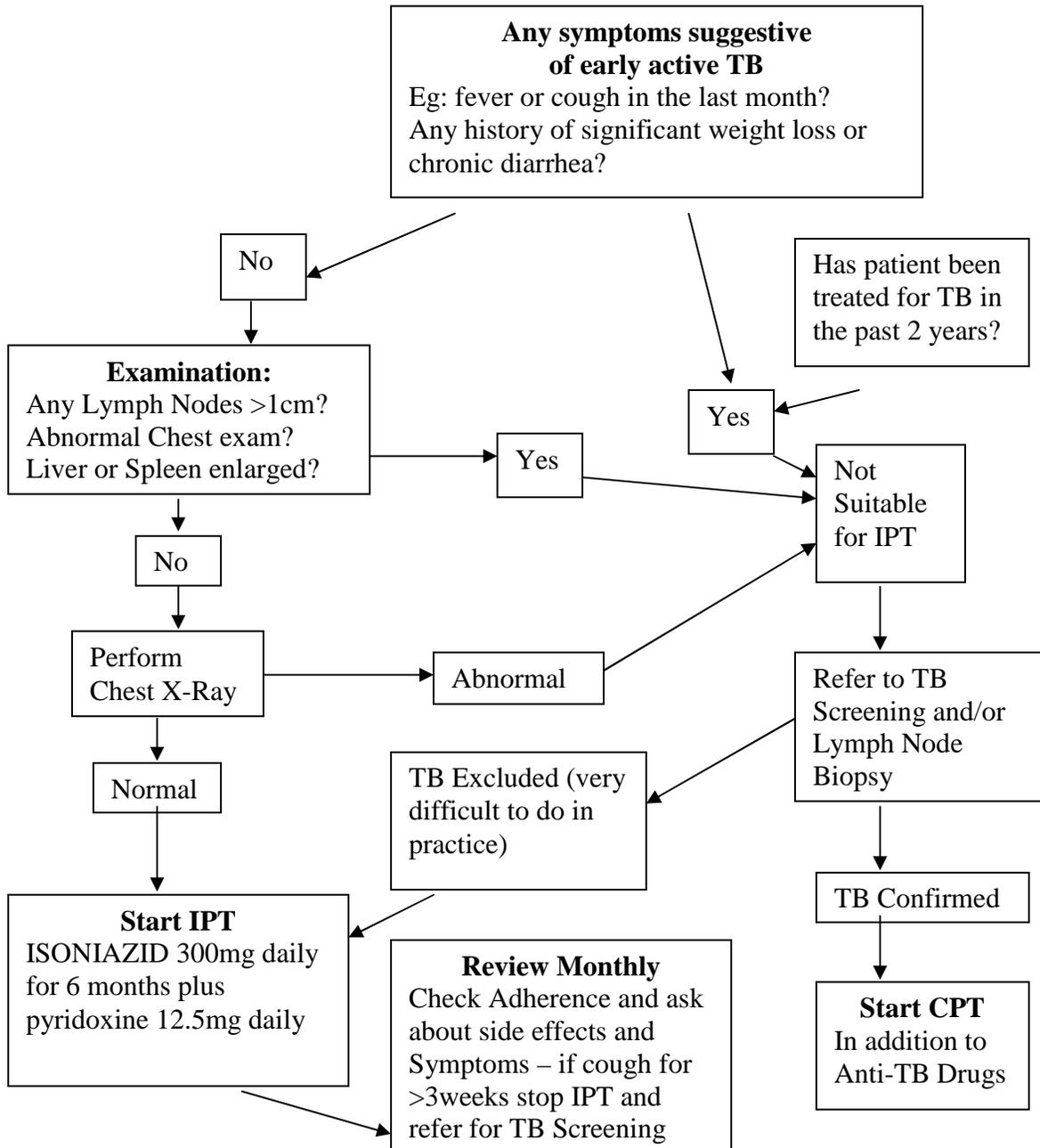


Paediatric Doses for CPT

Weight Range	Dose of Sulphmethoxazole in mg once Daily	Dose in Mls Syrup or SS Tablets
2-8kg	200mg	5ml or ½ tablet
9-14kg	400mg	10ml or 1 tablet
15-24kg	600mg	15ml or 1 ½ tablets
25-50kg	800mg	20 ml or 2 tablets

Isoniazid Preventative Therapy (IPT)

Asymptomatic HIV Positive patients should be considered for IPT. However because of the difficulties in excluding early active TB, current recommendations are IPT should only be offered under research conditions in the context of feasibility studies.



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Flow of Antenatal Clinic Services in the Bahamas

- First visit
- Return appointment
- Infectious disease specialty clinic visits

Module 3 - PMTCT interventions

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First Visit

- Client arrives for antenatal clinic booking appointment (1st visit)
- Receives Pre-test Counselling (VCT)
- Consent form signed, check list completed
- Blood sample drawn for HIV and other routine tests in pregnancy and transported to lab for testing
- Client receives return appointment within two weeks for test results and follow-up

Module 3 - PMTCT interventions

- In the Bahamas, an Opt-in approach is utilized for HIV testing of pregnant women. This means that the test is only done if the woman explicitly agrees to have an HIV test done by signing a consent form

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Return Appointment

- HIV results NEGATIVE
 - Results posted in client's antenatal record
 - On return to ANC, client is post-test counselled
- HIV results POSITIVE
 - Results posted in client's antenatal record
 - HIV Positive code (076) recorded
 - Copy sent to HIV/AIDS Centre
 - Attempts made to locate client
 - Refer for post test counseling at the ANC or the HIV/AIDS Center
 - If gestation 14 weeks or more, start ART

Module 3 - PMTCT interventions

- All results are sent to the Maternity Ward and posted in the client's antenatal record
- HIV results POSITIVE
 - HIV Positive code (076) is recorded on clients antenatal record on Maternity Ward
 - If gestation 14 weeks or more, commence triple antiretroviral therapy.
 - Client should be counselled regarding adherence and importance of PMTCT, then given an appointment to the Infectious Disease Specialty

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Return Appointment (2)

- Interviewing midwife
 - Verifies whether client has been post-test counselled
 - Have you received your HIV results?
 - Have you been given an appointment for PMH?
 - Have you kept your appointment?
 - Asks about diabetes

Module 3 - PMCT Interventions

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- At each clinic visit inquiries are made concerning ARV medication and client is observed for possible side effects
 - Are you taking your medication as prescribed?
 - Do you have sufficient medication to last until your next appointment?
- Client continues to receive routine antenatal care as appropriate

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Infectious Disease Specialty Clinic Visits

- Conduct complete history and physical examination
- Counsel client on HIV infection, pregnancy and risk of HIV transmission to infant, prevention with antiretrovirals
- Discuss antiretrovirals stressing benefit to health of mother and baby
- Review laboratory results with client

Module 3 - PMCT Interventions

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- See Toxicity Table, Appendix 3-D

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Infectious Disease Specialty Clinic Visits (2)

- Observe for side effects of ARVs
 - e.g. rash, anaemia, bone marrow suppression
- Client counselled by nurse/pharmacist on how to take medications and importance of adherence
- Perform pill count for adherence determination
- Instruct client to return with all left-over medication

Module 3 - PMCT Interventions

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- See Toxicity Table: Appendix 3-D

Psychosocial and Community Support

- Pregnancy is a time of unique stress
- Pregnant women with HIV may also have concerns about disclosure of their status to other people
- Healthcare workers should assess how much support an HIV-infected woman is receiving
 - Refer to HIV/AIDS support organizations or groups when available
- Pregnant women with HIV usually have additional concerns related to their own health as well as their child's. Healthcare workers can work to ensure that pregnant women with HIV have the support they require
- Need a good “contact tracer” to actively contact her. The women's partner and children (especially children under 12) should also be tested

Management of Labour and Delivery of Women Infected with HIV and Women of Unknown HIV Status

Module 3 - PMTCT interventions

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PMTCT during Labour and Delivery

- Standard Precautions can help reduce MTCT in the labour and delivery setting
- Reducing foetal exposure to infected maternal blood and body fluids reduces MTCT
- By using safer delivery practices, it is possible to reduce the infant's exposure to HIV

Module 3 - PMTCT interventions

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- More infants born to HIV-infected mothers become infected during labour and delivery than during pregnancy or during breastfeeding
- Following universal precautions and using procedures that reduce foetal exposure to maternal blood and secretions can reduce the risk of MTCT during labour and delivery

Precautions during Labour and Delivery

- Administer ARV prophylaxis during labour according to national protocols
- Use Standard Precautions
- Minimize vaginal examinations
- Avoid prolonged labour
- Avoid premature rupture of membranes

Module 3 - PMTCT interventions

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- Continue **ARV treatment** or prophylaxis during labour, or start ARV prophylaxis at labour to reduce maternal viral load and provide protection to the infant
- Use **Standard Precautions**, which include wearing protective gear, using and disposing of sharps safely, sterilizing equipment, and safely disposing of contaminated materials
- Perform **vaginal examinations** only when absolutely necessary
- Consider using oxytocin to **shorten labour** when appropriate
- Avoid artificial **rupture of membranes**, unless necessary
 - Use a partogram to measure the progress of labour

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Precautions during Labour and Delivery (2)

- Avoid unnecessary trauma during delivery
- Use safe transfusion practices
- Minimize risk of postpartum haemorrhage
- Actively manage the third stage of labour

Module 3 - PMTCT interventions

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- **Avoid unnecessary trauma during delivery**
 - Use non-invasive foetal monitoring
 - Avoid invasive procedures, such as using scalp electrodes or scalp sampling
 - Avoid routine episiotomy
 - Minimize the use of forceps or vacuum extractors
- **Use safe transfusion practices**
 - Minimize the use of blood transfusions
 - Use only blood screened for HIV and, when available, screened for syphilis, malaria, and hepatitis B and C as well

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Precautions during Labour and Delivery (3)

- Give oxytocin immediately after delivery
- Use controlled cord traction
- Perform uterine massage
- Carefully repair genital tract lacerations
- Carefully remove all products of conception

Module 3 - PMTCT interventions

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Considerations Regarding Mode of Delivery

- **Caesarean section**
 - When performed before the onset of labour or membrane rupture, has been associated with reduced MTCT
 - When used with safer infant-feeding practices, and ARV treatment and prophylaxis, has greatly reduced the rate of MTCT in some countries

Module 3 - PMTCT interventions

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- The risk of elective caesarean section in PMTCT should be assessed locally in the context of factors such as risk of post-operative complications, safety of the blood supply and cost

HIV Testing during Labour

- A woman of unknown HIV status at labour should be offered HIV counselling and testing according to national policy
- Testing during labour is the last opportunity before childbirth to identify women infected with HIV
- ARV prophylaxis, when initiated during labour for the woman and just after birth for the infant, can still greatly reduce MTCT

Module 3 - PMTCT Interventions

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- Testing during labour and delivery provides an opportunity for the mother and infant to receive ARV prophylaxis
- The Bahamas national policy for PMTCT in labour and delivery
 - Regimen III is offered to ALL women (HIV + and unknown status) presenting for labour and delivery
- Established labour = 3-4 cm. dilated
- **Modules 6 and 7** includes additional information about HIV counselling and testing during labour and delivery

Immediate Postpartum Care of Women who are HIV-Infected and Women of Unknown HIV Status

Module 3 - PMTCT Interventions

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- Women who are HIV-infected require additional postpartum monitoring and support
- Women taking ARVs require nutritional support and guidance
- Infant-feeding support is required during the first two years of a child's life with special attention given during clinic visits to infant feeding and any time a mother decides to change her feeding practice
- Early identification and treatment of infections improves the health of the mother
- Postpartum family planning should include both partners. Family planning is an important element to a comprehensive approach to prevent HIV infection in infants and young children

HIV-infected: Continuing Care

- Encourage and make plans for continuing health care in the following areas:
 - Routine gynaecologic care, including Pap smears, and family planning services
 - Ongoing support, care and treatment for HIV/AIDS, including referral for ARV treatment if the woman is eligible
 - Nutritional counselling and support
 - Referral for prophylaxis and treatment of OIs, including TB.

Module 3 - PMTCT Interventions

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- When providing postpartum care to women infected with HIV, healthcare workers should follow national protocols
- For additional information, see **Module 9**, Continuum of Care for Women, Infants and Families with HIV Infection

HIV-infected: Continuing Care (2)

- Signs and symptoms of postnatal infection
- Review the following symptoms of infection before she leaves the hospital or clinic and give information on where to seek treatment
 - Burning with urination
 - Fever
 - Foul smelling lochia
 - Cough, sputum, and shortness of breath
 - Redness, pain, pus, or drainage from incision or episiotomy
 - Severe lower abdominal pain

Module 5 - PMTCT interventions

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HIV-infected: Infant Feeding and Education

- Bahamas policy on infant feeding for HIV positive mothers
 - Advised not to breast feed their infants
 - Supplied with adequate supply of replacement feeds for their infant, if required
- Instruct the mother about perineal and breast care
- Ensure that the mother knows how and where to dispose of potentially infectious materials such as lochia and blood-stained sanitary pads

Module 5 - PMTCT interventions

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- **Infant feeding:**

- Breast friendly, Baby friendly
- Provide training on cup feeding and observe proper feeding technique before discharge
- See **Module 5**, Infant Feeding in the Context of HIV Infection for additional information

HIV-infected: Family Planning

- Contraception and child spacing should be discussed with every woman
 - During antenatal care
 - Again in the immediate postpartum period
- Main family planning goals for HIV-positive women are:
 - Preventing unintended pregnancy
 - Spacing children appropriately
 - Can help reduce maternal and infant morbidity and mortality

Module 5 - PMTCT interventions

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Postpartum Care of Women with Unknown HIV Status

- Should receive the same postpartum care as women with HIV infection
- Should be counselled and supported to exclusively breastfeed
- Should be encouraged to test for HIV

MODULE 3 - PMTCT interventions

- Even in the post-delivery setting there are PMTCT strategies that can significantly reduce transmission of HIV from mother to baby

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Postpartum Care of Women with Unknown HIV Status (2)

- If a woman tests HIV-negative after delivery, provide:
 - Post test counselling along with the range of education, care and support services available to all mothers post-partum
- If a woman tests HIV-positive after delivery, provide:
 - ARV prophylaxis for the infant as per national guidelines, within the first six hours after birth
 - Safer infant-feeding counselling and support for the mother as per national guidelines
 - Referrals for HIV-related care, treatment, support and treatment

MODULE 3 - PMTCT interventions

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<p>Slide 75</p>	<p>Newborn Care Of Infants who are HIV-Exposed and Born to Mothers who Had Less Than Two Months of ARV Therapy Immediately Prior to Delivery</p> <p>Module 3 - PMTCT Interventions</p>	<ul style="list-style-type: none"> • In the immediate postpartum period, the goal is to reduce MTCT by minimising newborn exposure to maternal blood and body fluids • Routine assessment for signs and symptoms of HIV infection is essential for infants exposed to HIV • Infants who are exposed to HIV are not screened – they are given prophylactic ARV treatment (i.e. full HAART Regimen consisting of Zidovudine + Lamiduvine + Kaletra) <ul style="list-style-type: none"> • This dosing is discontinued at 6 weeks of age, for NUV negative infants, for HIV positive infants it continues • <i>Infants who have been exposed to HIV should be screened for TB</i>
<p>Slide 76</p>	<p>Immediate Newborn Care</p> <ul style="list-style-type: none"> • Use Universal Precautions throughout care and treatment <ul style="list-style-type: none"> – Wear gloves when giving injections, and clean all injection sites – Dispose of all needles according to policy • Clamp cord immediately after birth • Avoid milking the cord • Cover the cord with gloved hand or gauze before cutting <p>Module 3 - PMTCT Interventions</p>	<ul style="list-style-type: none"> • The immediate care of the newborn exposed to HIV follows Standard Precautions. Regardless of the mother’s HIV status, all infants are kept warm after birth and are handled with gloves until maternal blood and secretions have been washed off • Always follow Standard Precautions when caring for all newborn infants
<p>Slide 77</p>	<p>Immediate Newborn Care (2)</p> <ul style="list-style-type: none"> • Wipe infant’s mouth and nostrils with gauze when the head is delivered • Use suction only when meconium-stained liquid is present • Wipe the infant dry with a towel <p>Module 3 - PMTCT Interventions</p>	<ul style="list-style-type: none"> • Suction: <ul style="list-style-type: none"> • Use bulb suction, rather than mouth-operated suction

Immediate Newborn Care (3)

- Ask the mother whether she has been counselled on replacement feeding and explain the risks of MTCT associated with breastfeeding
- Administer
 - Vitamin K intramuscular
 - Erythromycin eye ointment

Module 3 - PMTCT Interventions

- In areas of the world with a high prevalence of TB, WHO recommends giving BCG to HIV-infected children who are asymptomatic for HIV

Bahamas National Protocol for ART in Newborns

- HIV Exposed Infant:
 - Oral AZT 2 mg/kg/bwt administered 6 hours post delivery and six weeks supply given at discharge with instructions to be administered every 6 hours
 - Baseline blood screen – DNA PCR, FBC with differentials, AST, ALT
- Infant born to mother of unknown status:
 - Oral prophylaxis HAART
 - Baseline blood screen – DNA PCR, FBC with differentials, AST, ALT

Module 3 - PMTCT Interventions

- Make sure HIV exposed newborns and infants born to mothers of unknown HIV status receive the recommended MTCT regimen according to national protocol

Follow-up Newborn Care

- ARV prophylaxis should be offered for the newborn
- Mothers who have recently delivered whose HIV status is unknown, should be offered VCT as soon as possible
 - Preferably within the first 6 hours after the birth so ARV prophylaxis can be given to the infant if the mother tests HIV-positive

Module 3 - PMTCT Interventions

- **Follow-up newborn care take home messages:**
 - When HIV testing is unavailable or the mother's HIV status is unknown, newborn care should follow national or local policy
 - Care for infants exposed to HIV should follow the approach described in Module 9: Continuum of Care for Women, Infants and Families
 - Mother should receive counselling about infant feeding, as described in Module 5, Infant Feeding in the Context of HIV Infection

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Bahamas Policy for Follow-up Care of HIV-exposed Infants

- HIV/AIDS Centre must be informed of ALL infants delivered to HIV Positive women
- Appointment to the Paediatric Clinic given to mother
 - First Wednesday post-partum, at 9.00 a.m.
- All babies born to HIV infected women, whether treated with ARVs or not, must have blood drawn for HIV 1 DNA PCR at the following ages:
 - Birth to 2 weeks
 - 1 month
 - 2 months

Module 3 - PMTCT Interventions

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- In the Bahamas, mother and infant are visited at home by the Postnatal Home Service Team up to 10 days postpartum. Complications of the Puerperium are assessed for and referral made to the appropriate agencies
- During the Paediatric Clinic visits physical assessment, growth, development and anthropometrics measurements are carried out
- PCR – A licensed virologic test for determination of the HIV Virus, known as the HIV-1 DNA PCR (Polymerase Chain Reaction test)

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Bahamas Policy for Follow-up Care of HIV-exposed Infants (2)

- At 4 weeks postpartum mother receives
 - Physical examination
 - Laboratory testing: CBC with differentials, SMAC 25, CD4 and viral load
- An Appointment is given to return at 18 months for an ELISA Test and a quality of life assessment

Module 3 - PMTCT Interventions

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- If the ELISA is negative, the infant is officially discharged from the Paediatric Infectious Disease Specialty Clinic
- The infant is considered HIV negative after 2 consecutive negative DNA PCR results, done at monthly intervals, after 1 month of age
- Infants are diagnosed HIV positive after 2 consecutive positive HIV-1DNA PCR. These infants are treated with HAART and followed up at the Paediatric Infectious Disease Clinic monthly
- Quality of life assessment is the general assessment for wellness, development and growth including anthropometric measurements
 - Looking to see general health and if child is hitting developmental milestones

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Bahamas Policy for Follow-up Care of HIV-exposed Infants (3)

- Negative and positive infants continue to attend the community health clinics for ongoing child health services
 - Physical review
 - Immunization
 - Monitoring of nutritional status
 - Growth and development appraisals
 - Health promotion, education and parental counselling

Module 3 - PMTCT Interventions

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- Refer participants to Appendix 3E “Bahamas recommendation on child health preventive care timelines and screening”
- For additional information of recommended immunizations, see Appendix 3F- “Bahamas protocol for Immunization”

Case Study

Bernice and Albert:
Antenatal Management for PMTCT

Module 3 - PMTCT interventions

PMTCT Interventions - Summary

- Prevention of mother to child transmission of HIV requires a multi-pronged approach which requires intervention
 - Prior to pregnancy (family planning, VCT)
 - During pregnancy (ARV prophylaxis and treatment, education and support)
 - After delivery (continuum of care, support and treatment for mothers, their infants and families)

Module 3 - PMTCT interventions

- Healthcare workers have the opportunity to intervene on multiple levels to work toward a goal of zero for MTCT in the Bahamas



Handout 3.4

Case Study: Bernice and Albert

Introduction

Bernice is 25 years old and a secretary for a medical office. She meets a man, Albert, whom she likes very much. Albert is handsome, funny and five years older. He has a job which takes him travelling to the family islands sometimes. Albert is unaware of his HIV status. Albert and Bernice become a couple and are having unprotected sex. A month after the relationship starts Bernice misses work due to the flu. She has fever, swollen glands and complains of joint pain. Since Bernice works in a medical office, she went for an HIV test which was negative.

Bernice suspects she is pregnant a year after meeting Albert. She shows up at the antenatal clinic at 10 weeks gestation and receives group counselling and testing on HIV and safe motherhood and consents to a test. At the subsequent appointment, she is informed of her HIV positive status, post-test counselled and encouraged to bring her partner in for testing. Bernice is shocked because she feels fine. At her 3rd visit, Bernice is 15 weeks gestation and comes in alone.

1. What critical information must you tell Bernice?
2. What are the basic ANC management steps that should be taken?
3. What specific HIV-related care does Bernice need?
4. What specific needs and physical findings do you need to assess at this visit?



Handout 3.5

Antenatal Care Services for HIV-Infected Women	
Patient history:	<ul style="list-style-type: none"> Take medical, obstetric, and psychosocial history. Determine drug history, known allergies, and use of traditional medicines such as herbal products.
Physical exam and vital signs:	<ul style="list-style-type: none"> Conduct full physical exam to assess for current signs or symptoms of illness; target common symptoms of TB, and sexually transmitted infections (STIs).
Abdominal and Gynaecological exam:	<ul style="list-style-type: none"> Conduct abdominal and gynaecological exam; include speculum and bimanual exams.
Lab tests:	<ul style="list-style-type: none"> Perform routine tests for syphilis, sickle cell prep, blood group, diabetes and anaemia Perform HIV testing as per national protocol. If woman is HIV-positive, obtain CD4 count and, virologic testing.
Nutritional assessment and counselling:	<ul style="list-style-type: none"> Monitor for anaemia, adequate caloric and nutrient intake. Provide iron, folate or other micronutrient supplementation as per national protocol. Counsel on proper diet based on local resources.
STI screening:	<ul style="list-style-type: none"> Assess risk for STIs. Diagnose and treat early according to national protocols. Counsel about STIs, their signs and symptoms and how STIs increase the risk of HIV transmission. Educate about how to avoid transmission or re-infection, partner notification and contact tracing.
Tuberculosis:	<p>TB is the leading cause of HIV mortality</p> <ul style="list-style-type: none"> Screen all women presenting for ANC services, who have had a cough for more than 2 weeks, regardless of HIV status. Specific TB treatment protocols are recommended for women infected with HIV, pregnant women, and women already receiving antiretroviral therapy as per WHO Guidelines
Opportunistic Infection (OI) prophylaxis:	<ul style="list-style-type: none"> Provide prophylaxis based on national protocol.
Screening and care for other infections:	<ul style="list-style-type: none"> Screen for and treat common parasitic, bacterial, and fungal infections. Treat all OIs.
Tetanus immunizations:	<ul style="list-style-type: none"> Administer according to national protocol.
ARV prophylaxis during pregnancy:	<ul style="list-style-type: none"> Provide according to national PMTCT protocols.
ARV treatment during pregnancy:	<ul style="list-style-type: none"> Triple therapy starting at 4 weeks gestation
Counselling on infant feeding:	<p>All women require infant-feeding counselling and support.</p> <ul style="list-style-type: none"> HIV-negative or women whose HIV status is unknown: Promote and support replacement feeding. HIV-positive women: Consider replacement feeding

Antenatal Care Services for HIV-Infected Women	
Counselling on pregnancy danger signs:	<p>Provide women with information and instructions on seeking early care for pregnancy complications such as:</p> <ul style="list-style-type: none"> ▪ Bleeding ▪ Fever ▪ Pre-eclampsia (swelling of hand and feet and headaches)
Counselling on HIV/AIDS danger signs:	<p>Provide women with information and instructions on seeking healthcare for symptoms of HIV disease progression, such as opportunistic infections, chronic persistent diarrhoea, candidiasis, fever or wasting.</p> <ul style="list-style-type: none"> ▪ Refer women to The Infectious Disease Specialty Clinic
Partners and family:	<p>HIV-related stress and lack of support have been linked to progression of HIV infection.</p> <ul style="list-style-type: none"> ▪ Refer women, partners, and families to community-based support clubs or organisations such as BNN+ (Bahamas' network of positive people), Samaritan Ministry.
Effective contraception plan:	<ul style="list-style-type: none"> ▪ Counsel about consistent use of condoms during pregnancy, as well as throughout postpartum and breastfeeding periods to avoid new infection, re-infection, and further transmission. ▪ Provide long-term family planning counselling with partner involvement when possible.

Key points

- Specific PMTCT interventions include ARV treatment and prophylaxis, safer delivery procedures, and counselling and support for safer infant feeding
- Using ARV drugs for treatment and prophylaxis reduces the risk of MTCT
- ARV combination prophylaxis regimens are more effective
- Comprehensive care for mothers infected with HIV and their infants includes screening, prevention and treatment of OIs, including TB, as well as referral to the appropriate agencies

Module 3 - PMTCT interventions

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Key points (2)

- Integrating PMTCT initiatives into existing ANC normalizes HIV testing and other PMTCT interventions and allows for maximum coverage in a cost-effective manner
- Safer delivery procedures are those that minimize the amount of contact between the infant and the mother's blood
- Mothers require infant-feeding counselling and support throughout ANC, L and D, and the postpartum period
- Immediate care of infants exposed to HIV requires special measures in the delivery setting

Module 3 - PMTCT interventions

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APPENDIX 3-A WHO Recommendations: Antiretroviral (ARV) prophylaxis regimens to prevent MTCT

HIV-related treatment, care and support must be provided during the antenatal and postpartum periods. All HIV-exposed infants should be followed-up for diagnosis of HIV, prophylaxis of opportunistic infection, and treatment, care and support.

All regimens are administered by mouth. Paediatric formulations are available for the main drugs used in current prophylactic regimens to prevent MTCT (AZT, NVP, 3TC). Effort must be made to monitor for side effects and support maternal and infant adherence.

MINIMUM ARV AVAILABLE FOR PMTCT: NEVIRAPINE ONLY

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTPARTUM
Nevirapine (NVP)	Mother: None	Mother: Single-dose NVP 200 mg at onset of labour	Mother: None	Infant: NVP 2 mg/kg oral suspension immediately after birth or within 72 hours

FULL RANGE OF ARVS FOR PMTCT AVAILABLE AND HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART) NOT YET INDICATED FOR MATERNAL TREATMENT OF HIV

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTPARTUM
Zidovudine (AZT) and nevirapine (NVP)¹	Mother: AZT 300 mg twice a day starting at 28 weeks or as soon as possible thereafter	Mother: AZT 300 mg at onset of labour and every 3 hours until delivery <u>and</u> single-dose NVP 200 mg at onset of labour	Mother: None	Infant: NVP 2mg/kg oral suspension immediately after birth or within 72 hours <u>and</u> AZT 4 mg/kg twice a day for 7 days ²
		OR AZT 600 mg at onset of labour <u>and</u> single-dose NVP 200 mg at onset of labour		
AZT and lamivudine (3TC) and NVP³	Mother: AZT 300 mg twice a day starting at 28 weeks or as soon as possible thereafter	Mother: AZT 300 mg every 3 hours until birth <u>and</u> 3TC 150 mg every 12 hours until delivery and single-dose NVP 200 mg at onset of labour	Mother: AZT 300 mg <u>and</u> 3TC 150 mg twice a day for 7 days	Infant: NVP 2 mg/kg oral suspension immediately after birth or within 72 hours <u>and</u> AZT 4 mg/kg twice a day for 7 days ²

APPENDIX 3-A WHO Recommendations: Antiretroviral (ARV) prophylaxis regimens to prevent MTCT *(continued)*

WHEN HIV TREATMENT IS CONSIDERED OR INDICATED FOR MATERNAL HEALTH AND HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART) IS AVAILABLE⁴

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTPARTUM
HAART⁵ See Appendix 3B	Mother: HAART	Mother: Continue antenatal dosing schedule	Mother: Continue antenatal dosing schedule	Infant: AZT 4 mg/kg twice a day for 7 days ²

REGIMENS FOR WOMEN KNOWN TO BE HIV POSITIVE WHO PRESENT IN LABOUR WITHOUT PREVIOUS ARVS AND ADDITIONAL ARV MEDICATIONS ARE AVAILABLE⁶

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTPARTUM
AZT and NVP	Mother: None	Mother: AZT 300 mg at onset of labour and every 3 hours until delivery <u>and</u> single-dose NVP 200 mg at onset of labour ----- <u>OR</u> AZT 600 mg at onset of labour <u>and</u> single-dose NVP at onset of labour	Mother: None	Infant: NVP 2mg/kg oral suspension immediately after birth or within 72 hours <u>and</u> AZT 4 mg/kg twice a day for 4 weeks
AZT and 3TC³	Mother: None	Mother: AZT 300 mg and 3TC 150 mg at onset of labour followed by AZT 300 mg every 3 hours <u>and</u> 3TC 150 mg every 12 hours until delivery	Mother: AZT 300 mg <u>and</u> 3TC 150 mg twice a day for 7 days	Infant: AZT 4 mg/kg <u>and</u> 3TC 2 mg/kg twice a day for 7 days
AZT and NVP for infant (when mother has received no ARV prophylaxis and presents late in labour)	None	None	None	Infant: NVP 2 mg/kg oral suspension immediately after birth or within 72 hours <u>and</u> AZT 4 mg/kg twice a day for 4 weeks

¹ If the woman receives AZT during pregnancy for at least 4 weeks or more, omission of the intrapartum maternal NVP dose may be considered.

² If the mother receives less than 4 weeks of AZT or HAART during pregnancy, the infant AZT dosing should be extended to 4 weeks.

³ A 7-day tail of AZT and 3TC can be given to the mother after delivery to reduce the emergence of NVP resistance and is advised if HAART is expected to be started soon after delivery.

⁴ The revised WHO adult antiretrovirals guidelines recommend HAART be considered for patients with clinical stage I and II with CD4 counts below 350 cells/mm³, particularly if closer to 200-250 cells/mm³. Maternal HAART is indicated for clinical stage III or IV and/or when CD4 count is less than 200 cells/mm³. Toxicity related to initiation of

long term nevirapine-containing HAART may be a concern in pregnant women with a CD4 count between 250-300/mm³. Recent data from resource constrained settings suggest a low toxicity in this context, and the issue continues to be followed carefully.

- 5 Efavirenz (EFV)-containing HAART should only be taken in the 2nd and 3rd trimesters and adequate contraception must be made available postpartum. Avoid using EFV in women of childbearing potential unless adequate contraception is available and used. Counsel women about the importance of avoiding pregnancy while taking EFV.
- 6 Mothers should be assessed postpartum about their need for therapy if indicated.

Source: Adapted from WHO. *Antiretroviral drugs and the prevention of mother-to-child transmission of HIV infection in resource-limited settings Recommendations for a Public Health Approach* (2005 Revision). Retrieved (September 15, 2005) from http://www.who.int/3by5/PMTCTreport_June2005.pdf and http://www.who.int/3by5/PMTCTtable_June2005.pdf.

APPENDIX 3-B LABORATORY TESTING AND VISIT SCHEDULING BY GESTATION AGE

HIV POSITIVE PREGNANT WOMEN PRIOR TO 12 WEEKS GESTATION			
VISIT	INTERVAL	TESTS	GESTATION
1		FBC, Diff SMAC 25 Viral Load CD4 count	8 – 14 weeks
2	4 weeks	start ARVs	14
*3	2 weeks	FBC with Diff, SMAC 25	16
4	4 weeks	(1) FBC with Diff, SMAC 25 Viral Load CD4 count	20
**5	4 weeks	(3) FBC, Diff SMAC 25	24
6	4 weeks		28
7	4 weeks	1) FBC with Diff, SMAC 25 Viral Load CD4 count	32
***8	2 weeks		36
9	2 weeks		38
10	2 weeks		40

*Increase Nevirapine dosage for patients on Antenatal Treatment Regimen 1

**If no significant VL response, consider poor adherence, DOT, possible change, repeat VL.

***If poor VL response, consider elective C Section.

APPENDIX 3-B LABORATORY TESTING AND VISIT SCHEDULING BY GESTATION AGE continued

HIV POSITIVE PREGNANT WOMEN			
> TO 20 WEEKS GESTATION			
VISIT	INTERVAL	TESTS	GESTATION
1		FBC with differential SMAC 25 Viral Load CD4 count	20 weeks
2	1 weeks	Start ARV's	21 weeks
*3	2 weeks	FBC with differential SMAC 25	23 weeks
**4	4 weeks		27 weeks
5	4 weeks	FBC with differential SMAC 25 Viral Load CD4	31 weeks
***6	4 weeks		35 weeks
7	2		37-40 weeks

*Increase Nevirapine dosage for patients on Antenatal Treatment Regimen 1

**If no significant VL response, consider poor adherence, DOT, possible change, repeat VL.

***If poor VL response, consider elective C Section

HIV POSITIVE PREGNANT WOMEN			
> TO 34 WEEKS GESTATION			
VISIT	INTERVAL	TESTS	GESTATION
1		FBC with differential SMAC 25 Viral Load Start ARVs	34
2	1 week		35
*3	2 weeks	FBC with differential SMAC 25 Increase nevirapine dosing see table	37
4	2 weeks		39
5	1		40

*If no significant VL consider C. Section.

APPENDIX 3-B LABORATORY TESTING AND VISIT SCHEDULING BY GESTATION AGE continued

HIV POSITIVE PREGNANT WOMEN LIMITED or NO ANTENATAL CARE ADMITTED IN LABOUR			
VISIT	INTERVAL	TESTS	GESTATION
Maternity Ward		FBC with differential SMAC 25 Viral Load CD4 count	Term (38 – 40 weeks in labour)

- Administer IV AZT and prepare for Emergency Caesarean Section

HIV INCONCLUSIVE/INDETERMINIT PREGNANT WOMEN PRIOR TO 12 WEEKS GESTATION			
VISIT	INTERVAL	TESTS	GESTATION
1		Repeat HIV. Do CD4 & V/L	
2	4 weeks	1, Review results 2. HIV negative follow as per routine antenatal protocol 3. HV positive review cd4 to determine treatment regimen. See Antiretroviral treatment in pregnancy. 4. HIV – Inconclusive/indeterminate, review V/L and Cd4. The woman is considered positive if V/L results is >1000 c/ml. CD4 is reviewed to determine treatment regimen. See Antiretroviral treatment in pregnancy.	

APPENDIX 3-B LABORATORY TESTING AND VISIT SCHEDULING BY GESTATION AGE continued

HIV INCONCLUSIVE/INDETERMINATE PREGNANT WOMEN > PRIOR TO ≥12 WEEKS GESTATION			
VISIT	INTERVAL	TESTS	GESTATION
1		FBC with differential SMAC 25 HIV test Viral Load CD4 count	
2	1 weeks	1. Review HIV results: If HIV negative follow or per routine antenatal protocol 2. If HIV positive, review CD4 count to determine treatment regimen 3. HIV inconclusive/ indeterminate Review viral load results. If >1000 c/ml start ARVs, regimen based on CD4 count.	

PREGNANT WOMEN OF UNKNOWN /KNOWN HIV STATUS NO ANTENATAL/INFECTIOUS DISEASE CARE, WHO DELIVERS WITHOUT CLINICAL CARE			
VISIT	INTERVAL	TESTS	GESTATION
1 Maternity Ward		Eliza Test FBC with differential SMAC 25 Viral Load CD4 count Advised not to breast feed and refer Infectious Disease Clinic	
2 Infectious Disease Clinic		1. Review labs 2. Start ARV. And OI prophylaxis if CD4 < 350 (CDC Guideline) 3. Follow up as per adult treatment guidelines	

APPENDIX 3C Clinical situations and recommendations for the use of antiretroviral drugs in pregnant women and women of child-bearing potential in resource-constrained settings *(continued)*

Clinical Situation	Recommendation
<p>D: HIV-infected pregnant women without indications for ARV treatment¹</p>	<p>Preferred regimen: short course AZT and single dose NVP⁴</p> <p>Women</p> <ul style="list-style-type: none"> ○ AZT starting at 28 weeks or as soon as possible thereafter. Continue AZT in labour. In addition, women should receive single-dose NVP at the onset of labour.⁵ <p>Infants</p> <ul style="list-style-type: none"> ○ Single-dose NVP and 1-week AZT³ <hr/> <p>Alternative regimen: NVP only</p> <p>Women</p> <ul style="list-style-type: none"> ○ Single-dose NVP <p>Infants</p> <ul style="list-style-type: none"> ○ Single-dose NVP <hr/> <p>Alternative regimen: AZT + 3TC + NVP</p> <p>Women</p> <ul style="list-style-type: none"> ○ AZT starting at 28 weeks or as soon as possible thereafter. Begin 3TC at onset of labour and give AZT + 3TC in labour and for 1 week postpartum. In addition, women should receive single dose NVP at onset of labour. <p>Infants</p> <ul style="list-style-type: none"> ○ Single-dose NVP and 1-week AZT³
<p>E: HIV-infected pregnant women with indications for starting ARV treatment¹ but treatment is not yet available</p>	<p>Follow the recommendations in Situation D, but preferably use the most effective regimen that is available and feasible.</p>
<p>F: HIV-infected pregnant women with active tuberculosis (ARV treatment indicated)</p>	<p>If a pregnant women has TB and HAART is initiated, consider:</p> <ol style="list-style-type: none"> 1. Triple NRTI 2. EFV based regime, but only if the women is in her 2nd or 3rd trimester and adequate contraception is available postpartum. <p>Avoid NVP-containing HAART regimes in the rifampicin phase of TB treatment.</p> <p>If a pregnant woman is on HAART and develops TB, change to one of the regimes above. Refer to WHO adult treatment guidelines for considerations regarding protease-inhibitor containing therapy.</p> <p>As a general principle, TB should be treated and the women stabilized first. A PMTCT regimen (AZT at 28 weeks) should be started and then HAART started as soon as possible</p>

APPENDIX 3-C Clinical situations and recommendations for the use of antiretroviral drugs in pregnant women and women of child-bearing potential in resource-constrained settings *(continued)*

Clinical Situation	Recommendation
G: HIV-positive pregnant women presents around delivery and having received no ARVs for PMTCT	<p>Women</p> <ul style="list-style-type: none"> ○ AZT and single-dose NVP. If in advanced labour do not give the doses but follow the recommendations in Situation H. <p>Infants</p> <p>Single-dose NVP and 4 weeks AZT</p> <p>OR</p> <p>Women</p> <ul style="list-style-type: none"> ○ AZT + 3TC in labour and 1-week AZT + 3TC postpartum <p>Infants</p> <ul style="list-style-type: none"> ○ 1-week AZT + 3TC <p>If there is insufficient time for HIV testing and counselling during labour, then offer testing and counselling as soon as possible postpartum. Follow the recommendations in Situation H for women testing positive postpartum.</p>
H: Infants born to HIV-infected women who have not received any ARV drugs	<p>Infants</p> <ul style="list-style-type: none"> ○ Single-dose NVP as soon as possible after birth + 4-weeks AZT <p>If the regimen is started more than 2 days after birth, it is unlikely to be effective.</p>

¹ The revised WHO ARV Treatment Guidelines for Adults and Adolescents in Resource Limited Settings (2005) recommend HAART be considered for patients with clinical stage I and II with CD4 counts below 350 cells/mm³, particularly if closer to 200-250 cells/mm³. Irrespective of CD4+ counts, treatment continues to be indicated in all symptomatic patients at WHO Stages III and IV. Asymptomatic WHO Stage I patients cannot be treated if CD4+ counts are not available, however if they are available and <200, ART should be started.

² Conduct clinical and laboratory monitoring as outlined in the 2003 WHO treatment guidelines.

³ If the mother receives less than 4 weeks of AZT or HAART during pregnancy, the infant dosing should be extended to four weeks.

⁴ A 7-day tail of AZT and 3TC can be given to the mother after delivery to reduce the emergence of NVP resistance and is advised if HAART is expected to be started soon after delivery.

⁵ If the woman receives AZT during pregnancy for at least 4 weeks or more, omission of the intrapartum maternal NVP dose may be considered.

Source: WHO. *Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants: Guidelines on Care, Treatment and Support for Women Living with HIV/AIDS and their Children in Resource-constrained Settings*. 2004. pp 39-41. Updated with content from: WHO. *Antiretroviral drugs and the prevention of mother-to-child transmission of HIV infection in resource-limited settings Recommendations for a Public Health Approach* (2005 Revision), 28-29 June 2005. Retrieved (September 15, 2005) from http://www.who.int/3by5/PMTCTreport_June2005.pdf and http://www.who.int/3by5/PMTCTtable_June2005.pdf. and with content from: WHO Guidelines Development Group. *ARV drugs for the treatment of HIV infection in adults and adolescents in resource-limited settings Recommendations for a Public Health Approach (2005-2006 Revision), Brief Meeting Report*, 22-23rd June 2005. Retrieved (September 15, 2005) from http://www.who.int/3by5/ARVmeetingreport_June2005.pdf

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 (TO BE USED BY PACTG AND PENTA)

The PENPACT 1 (PENTA 9/PACTG 390) Protocol Team added the units for laboratory test results to facilitate the table's use at PENTA sites.

For other findings, the Toxicity Table for children ≥ 3 months of age (April, 1994) is applicable.

All values here are for term newborns. Preterm infants should be judged by a comparison of local normal ranges and the newborn ranges identified here.

PARAMETER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
HEMATOLOGY				
HEMOGLOBIN (g/dL)				
1-7 days old	13.0-14.0	12.0-12.9	<12	Cardiac Failure 2ndary to Anemia
8-21 days old	12.0-13.0	10.0-11.9	<10.0	Cardiac Failure 2ndary to Anemia
22-35 days old	9.5-10.5	8.0-9.4	<8.0	Cardiac Failure 2ndary to Anemia
36-56 days old	8.5-9.4	7.0-8.4	<7.0	Cardiac Failure 2ndary to Anemia
57-90 days old	9.0-9.9	7.0-8.9	<7.0	Cardiac Failure 2ndary to Anemia
ABS NEUTROPHIL CT/mL				
1 day old	5000-7000	3000-4999	1500-2999	<1500
2-7 days old	1750-2500	1250-1749	750-1249	<750
8-56 days old	1200-1800	900-1199	500-899	<500
57-90 days old	750-1200	400-749	250-399	<250

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

PARAMETER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
BILIRUBIN (mg/dL)				
<7 days old	.	20-25	26-30	>30
7-60 days old	1.1-1.9xN	2.0-2.9xN	3.0-7.5xN	>7.5xN
61-90 days old	1.1-1.9xN	2.0-2.9xN	3.0-7.5xN	>7.5xN
CREATININE (mg/dL)				
<7 days old	1.0-1.7	1.8-2.4	2.5-3.0	>3.0
7-60 days old	0.5-0.9	1.0-1.4	1.5-2.0	>2.0
61-90 days old	0.6-0.8	0.9-1.1	1.2-1.5	>1.5
CR CLEARANCE (cc/min/1.73 m²)				
<7 days old	35-40	30-34	25-29	<25
7-60 days old	45-50	40-44	35-39	<35
61-90 days old	60-75	50-59	35-49	<35
Low Calcium (mg/dL)				
<7 days old	6.5-6.9	6.0-6.4	5.5-5.9	<5.5
7-60 days old	7.6-8.0	7.0-7.5	6.0-6.9	<6.0
61-90 days old	7.8-8.4	7.0-7.7	6.0-6.9	<6.0
High Calcium (mg/dL)				
<7 days old	12.0-12.4	12.5-12.9	13.0-13.5	>13.5
7-60 days old	10.5-11.2	11.3-11.9	12.0-13.0	>13.0
61-90 days old	10.5-11.2	11.3-11.9	12.0-12.9	≥ 13.0

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

THE PENPACT 1 (PENTA 9/PACTG 390) PROTOCOL TEAM ADDED THE UNITS FOR LABORATORY TEST RESULTS TO FACILITATE THE TABLE'S USE AT PENTA SITES

PARAMETER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
HEMATOLOGY				
Hemoglobin (g/dL) > 3 mo.- < 2 y.o.	9.0-9.9	7.0-8.9	<7.0	Cardiac Failure 2ndary to anemia
Hemoglobin (g/dL) > = 2 y.o.	10-10.9	7.0-9.9	<7.0	Cardiac Failure 2ndary to anemia
Abs Neutrophil CT/ μ L	750-1200	400-749	250-399	<250
Platelets/ μ L		50,000-75,000	25,000-49,999	<25,000 or bleeding
PT (seconds)	1.1-1.25xN	1.26-1.5xN	1.51-3.0xN	>3xN
PTT (seconds)	1.1-1.66xN	1.67-2.33xN	2.34-3.0xN	>3xN
GASTROINTESTINAL				
Bilirubin (mg/dL)	1.1-1.9xN	2.0-2.9xN	3.0-7.5xN	>7.5xN
AST (SGOT)	1.1-4.9xN U/L	5.0-9.9xN U/L	10.0-15.0xN U/L	>15.0xN U/L
ALT (SGPT)	1.1-4.9xN U/L	5.0-9.9xN U/L	10.0-15.0xN U/L	>15.0xN U/L
GGT	1.1-4.9xN U/L	5.0-9.9xN U/L	10.0-15.0xN U/L	>15.0xN U/L
Pancreatic Amylase	1.1-1.4xN U/L	1.5-1.9xN U/L	2.0-3.0xN U/L	>3.0xN U/L
Total Amylase + Lipase*	1.1-1.4xN U/L	1.5-2.4xN U/L	2.5-5.0xN U/L	>5.0xN U/L
Uric Acid (mg/dL)	7.5-9.9	10-12.4	12.5-15.0	>15.0 or Gout
CPK	See Neuromuscular Toxicity			
Abdominal Pain	Mild	Moderate- No Rx Needed	Moderate- Rx Needed	Severe- Hospital and Rx
Diarrhea	Soft stools	Liquid stools	Liquid Stools & Mild Dehydration Bloody stools	Dehydration requiring IV therapy or Hypotensive Shock
Constipation	Mild	Moderate	Severe	Distention and Vomiting
Nausea	Mild	Moderate- Decreased po intake	Severe-Little po intake	Unable to ingest food or fluid for >24 hours
Vomiting	<1 episode/day	1-3 episodes/day or duration >3d	>3 episodes/day or duration >7d	Intractable Vomiting

Comments:

*Both amylase and lipase must be elevated to the same grade or higher (i.e. if total amylase is Grade 4, but lipase is only Grade 1, the Toxicity Grade is 1. In pediatric HIV patients, the most common source of serum amylase is the salivary glands. Salivary amylase elevations are generally not clinically significant. When amylase is released from damaged pancreatic cells, it can be a marker of pancreatitis. In most cases of clinical pancreatitis, lipase will also be elevated. However, lipase is also a non-specific marker. Combined elevation of amylase and lipase (each >5 x normal) often indicates pancreatic disease and requires evaluation. However, in the absence of pancreatic disease, drug can be resumed even at Grade 3 and 4 toxicities.

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

PARAMETER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
RENAL AND ELECTROLYTES				
CREATININE (mg/dL)				
2 Month-2 Years	0.6-0.8	0.9-1.1	1.2-1.5	>1.5
2 Years-Adolescent	0.7-1.0	1.1-1.6	1.7-2.0	>2.0
Adolescents	1.0-1.7	1.8-2.4	2.5-3.5	>3.5
Creatinine Clearance (cc/min/1.73 m ²)	60-75	50-59	35-49	<35
ELECTROLYTES				
High Sodium (mmo/L)	145-149		150-155	>155 or mental status changes
Low Sodium (mmo/L)	130-135		129-124	<124 or mental status changes
High Potassium (mmo/L)	5.0-5.9	6.0-6.4	6.5-7.0	>7.0 or Cardiac arrhythmias
Low Potassium (mmo/L)	3.0-3.5	2.5-2.9	2.0-2.4	<2.0
High Calcium (mg/dL)	10.5-11.2	11.3-11.9	12.0-12.9	≥13.0
Low Calcium (mg/dL)	7.8-8.4	7.0-7.7	6.0-6.9	<6.0
Low Magnesium (mg/dL)	1.2-1.4	0.9-1.1	0.6-0.8	<0.6 or Cardiac arrhythmias
Hypoglycemia (mg/dL)	55-65	40-54	30-39	<30 or Mental status changes
Hyperglycemia (mg/dL)	116-159	160-249	250-400	>400 or Ketoacidosis
Proteinuria (mg/dL)	Tr-1+ <150 mg/day	2+ 150-499 mg/day	3+ 500-1000 mg/day	4+, or nephrotic syndrome >1000 mg/day
Hematuria	Microscopic <25 cells/hpf	Microscopic ≥25 cells/hpf	Gross	Obstruction or Transfusion requirement
Comments Calcium values are corrected for albumin concentration. CrCl values do not apply to infants <2 months old.				
OTHER				
Allergy	Pruritis without Rash	Pruritic Rash	Mild Urticaria	Severe Urticaria Anaphylaxis, Angioedema
Drug Fever (Rectal)		38.5-40 °C	>40 °C	Sustained Fever: >40 °C, >5 days
Cutaneous		Diffuse maculo-papular rash, dry desquamation	Vesiculation, ulcers	Exfoliative dermatitis, Stevens-Johnson or Erythema multiforme, Moist desquamation
Stomatitis	Mild discomfort	Painful, difficulty swallowing, but able to eat and drink	Painful: unable to swallow solids	Painful: requires IV fluids

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

SYMPTOM	GRADE 1	GRADE 2	GRADE 3	GRADE 4
CENTRAL NERVOUS SYSTEM				
Seizures	None	1 Uncomplicated Sz +/- Temp Elevation	1 Sz/Month for >=2 Consecutive Months Or 3 Sz over 6 Months; No Temp Elevation	≥1 Sz/Month; No Temp Elevation; No Decrease in Sz Frequency Despite dose reduction
Seizures are a ubiquitous symptom of numerous systemic or CNS disturbances; alternative explanations should be vigorously sought and eliminated. Status epilepticus represents a severe end of the seizure spectrum, but should be considered as a single seizure event. The need for chronic or acute anticonvulsant medication should be made on a clinical basis. Seizures as a manifestation of drug toxicity are usually primarily generalized. Focal (partial onset) seizures are suggestive of focal central nervous system pathology and should be appropriately investigated, although they may be a manifestation of drug toxicity. Beware of focal seizures which secondarily generalize; these should be approached diagnostically as partial onset seizures. Children with underlying epileptic conditions who experience persistent breakthrough seizures despite maximal anticonvulsant therapy coincident with beginning the trial medication should be considered Grade 4.				
Headache	≤1/Month <2 Hrs duration Mild	>1/Month >2 Hrs Duration Moderate to Severe Responds to non-narcotic analgesia or prophylaxis	>2/Month >2 Hrs Duration Moderate to Severe Responds to narcotic analgesia, or does not respond to prophylaxis	>4/Month; >2 Hrs Duration; Moderate to Severe; Non-Responsive to narcotic Analgesia; or persistently Recurrent despite prophylaxis No decrease in frequency or Severity despite dose reduction
Headache is a non-specific symptom, but may be a symptom of CNS/intracranial pathology. Appropriate diagnostic measures should be pursued. Duration refers to the waxing and peak phases, not to the resolution/waning phases of the headache. Mild refers to a grade of headache pain which does not affect function or activity. Moderate to severe refers to a grade of headache which affects function or activity.				
Mental Status And Behavior	Changes which do not Affect Function	Changes requiring pharmacologic or other therapy; or mild lethargy, sedation or somnolence which resolves with rest	Changes not improved by drugs or other therapies; or onset of confusion, memory impairment, lethargy, sedation, or somnolence which does not respond to rest	Onset of delirium, obtundation, coma, or psychosis, or Grade 3 toxicity which does not respond to dose reduction
Behavior refers to the development of attention deficits with or without hyperactivity, depression, mania, agitation, sleep disorders, phobias, obsessive-compulsive behaviors, or anxiety. Mental status refers to the level of consciousness, memory function, language and analytical operations, and non-dominant hemisphere functioning. Alternative explanations should be sought.				
Balance & Posture	None	None	Ataxia, dizziness, vertigo, tremor, impaired postural balance	Onset of movement disorder; or Grade 3 toxicity which does not respond to dosage adjustment
"Ataxia" can be mistakenly diagnosed in the face of central weakness or peripheral neuropathy, which should not be considered a drug toxicity of this category. Movement disorders refer to tardive or other dyskinesias, dystonias, chorea, or ballismus. Alternative explanations should be sought.				

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES.

April-1994 continued

SYMPTOM	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Visual	None	Blurriness, diplopia, or horizontal nystagmus of < 1 hour duration, with spontaneous resolution	> = 1 episode of Grade 2 symptoms per week, or an episode of Grade 2 Sx lasting 1 hour with spontaneous resolution by 4 hours or vertical nystagmus	Decrease in visual acuity, visual field deficit, or oculogyric crisis, or Grade 3 Sx which persist after dose reduction
Many of the symptoms in this category can be the result of CNS pathology, or alternatively can be an external (i.e., non-CNS) neuro-ophthalmologic disorder. Appropriate diagnostic investigations should be pursued.				
Myelopathy	None	None	None	Myelopathic/spinal cord symptoms, such as: Pyramidal tract weakness and disinhibition, sensory level, loss of proprioception, bladder/bowel dysfunction
HIV can cause spinal cord syndromes rarely in children. Other infectious agents can cause myelopathies as well. Alternative explanations should be sought.				
PERIPHERAL NERVOUS SYSTEM				
Neuropathy/ Lower Motor Neuronopathy	None	Mild transient Paresthesia only	Persistent or progressive paresthesias, burning sensation in feet, or mild dysesthesia; no weakness; mild to moderate deep tendon reflex changes; no sensory loss	Onset of significant weakness, decrease or loss of DTRs, sensory loss in "stocking glove" distribution, radicular sensory loss, multiple cranial nerve involvement; bladder or bowel dysfunction, fasciculations, respiratory embarrassment from chest wall weakness. Grade 3 symptoms which do not resolve with dose reduction
Infectious agents other than HIV can precipitate a neuropathy and should be considered, especially CMV. Neuropathies which do not resolve after dose reduction or discontinuation should be pursued for alternative infectious or non-infectious etiologies, since drug-related neuropathies will usually resolve after dose reduction or drug discontinuation. It should be borne in mind that many subjects will worsen for up to one month after drug discontinuation prior to improvement ("coasting"). Abnormalities should be confirmed by nerve conduction studies (NCS) +/- electromyographic studies (EMG).				
Myopathy or Neuromuscular Junction Impairment	Normal or mild (<2 x N) CPK elevation	Mild proximal weakness and/or atrophy not affecting gross motor function. Mild myalgias, +/- mild CPK elevation (<2 x N)	Proximal muscle weakness and/or atrophy affecting motor function +/- CPK elevation; or severe myalgias with CPK >2 x N; Consider confirmatory EMG and/or muscle bx	Onset of myasthenia-like symptoms (fatigable weakness with external, variable ophthalmoplegia and/or ptosis), or neuromuscular junction blockade (acute paralysis) symptoms (confirm with EMG); or Grade 3 symptoms which do not resolve on dose adjustment; confirm with muscle bx
HIV can produce a myopathy, and should be differentiated. Drug-induced myopathy can be accompanied by normal CPK levels. On occasion, neuropathic or central weakness can mimic myopathic weakness.				

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

SYMPTOM	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Clinical symptoms <i>not otherwise specified</i> in this table	No therapy; monitor condition	May require minimal intervention and monitoring	Requires medical care and possible hospitalization	Requires active medical intervention, hospitalization, or hospice care
Laboratory values <i>not otherwise specified</i> in this table	Abnormal, but requiring no immediate intervention; follow	Sufficiently abnormal to require evaluation as to causality and perhaps mild therapeutic intervention, but not of sufficient severity to warrant immediate changes in study drug	Sufficiently severe to require evaluation and treatment, including at least temporary suspension of study drug	Life-threatening severity. Requires immediate evaluation, treatment, and usually hospitalization. Study drug must be stopped immediately and should not be restarted until the abnormality is clearly felt to be caused by some other mechanism than study drug.

TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤ 3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

SUPPLEMENTAL TOXICITY TABLE FOR GRADING SEVERITY OF ADULT AND PEDIATRIC CUTANEOUS/SKIN RASH/DERMATITIS ADVERSE EXPERIENCES (TO BE USED BY PACTG AND PENTA)

GRADE 1	GRADE 2	GRADE 3*	GRADE 4*
CUTANEOUS/SKIN RASH/DERMATITIS			
Erythema, with or without pruritis	<p>A. Diffuse erythematous macular or maculopapular cutaneous eruption or dry desquamation with or without pruritis (without the presence of any additional constitutional findings as described for Grade 3); OR typical target lesions without blistering, vesicles, or ulcerations in the lesions.</p> <p>B. Urticaria</p>	<p>A. Diffuse erythematous macular or maculopapular cutaneous eruption or moist desquamation with or without pruritis together with any of the following constitutional findings considered related to study drug:</p> <ol style="list-style-type: none"> 1. 5 x ULN AST, ALT or 2 x baseline if baseline > ULN. 2. fever, >39°C 3. blistering and/or vesiculation of cutaneous eruptions 4. any site of mucosal lesions; OR <p>B. angioedema; OR</p> <p>C. exfoliative dermatitis defined as severe widespread erythema and dry scaling of the skin, with generalized superficial lymphadenopathy, and with other constitutional findings such as fever, weight loss, hypoproteinemia possibly related to study drug; OR</p> <p>D. diffuse rash and serum sickness-like reactions defined as a clinical symptom complex manifested as fever, lymphadenopathy, edema, myalgia, and/or arthralgia; OR</p> <p>E. diffuse cutaneous eruptions, usually starting on the face, trunk or back, often with prodromal symptoms plus one of the following:</p> <ol style="list-style-type: none"> 1. cutaneous bullae, sometimes confluent with widespread sheet-like detachment of skin (<10% body surface area), (Nikolski's sign)(Stevens Johnson Syndrome, SJS) 2. two or more anatomically distinct sites of mucosal erosion or ulceration not due to another cause. 	<p>Diffuse cutaneous eruptions, usually starting on the face, trunk or back, often with prodromal symptoms plus cutaneous bullae with widespread sheet-like detachment of skin (>10% of body surface area), (Nikolski's sign), (SJS/Toxic Epidermal Necrolysis (TEN) overlap syndrome; TEN)</p>
<p>*When a Grade 3 or 4 cutaneous/skin rash/dermatitis adverse experience is suspected, a Dermatology consult for photographs and biopsies is required.</p>			

APPENDIX 3-D: TOXICITY TABLE FOR GRADING SEVERITY OF PEDIATRIC (≤3 MONTHS OF AGE) ADVERSE EXPERIENCES. April-1994 continued

DETERMINATION OF PLASMA HIV-1 RNA-PACTG SITES

VIROLOGY			
ASSAY	SPECIMEN	COLLECTION CONTAINER	IMMEDIATE SPECIMEN HANDLING
HIV-1 RNA PCR and plasma for storage (Roche 1.5 UltraSensitive assay.)	3.0 mL blood	k3 EDTA-Tubes	<ul style="list-style-type: none"> Gently invert tubes several times to mix. Do not shake. Specimen should be identified as to patient ID# (PID), study ID# (SID), site ID#, visit ID#, date and time of collection, and specimen type. Specimen should be kept at room temperature (18°-24°C) and processed as quickly as possible, preferably within 4 to 6 hours of collection.
PBMC for storage (resistance analysis and analysis of proviral DNA)	7.0 mL blood 5.0 mL blood		
<p>SPECIMEN PROCESSING:</p> <p>PLASMA FOR HIV-1 RNA PCR – UltraSensitive Roche Monitor Test (v1.5). Please follow the consensus methods on the ACTG website at http://aactg.s-3.com/pub/download/SpecimenProcessingGuide.doc.</p> <ol style="list-style-type: none"> Specimens must be logged into the LDMS and labeled with the LDMS specimen #, PID, date, time of collection and derivative information. Aliquot clarified plasma into a minimum of 2 x 0.6mL volumes (LDMS code: BLD/EDT/PL2) Freeze immediately at -70°C. Patient management HIV RNA PCR can be performed locally at a DAIDS VQA certified laboratory. Plasma aliquots from specimens collected at Screening, Entry, Week 24, time of therapy switch, Week 192, Week 204, and end of study must be reserved; these aliquots will be batched and shipped to the University of North Carolina prior to study completion according to the instructions below. If there is no local DAIDS VQA certified laboratory available for HIV RNA testing, specimens can be sent real-time to the University of North Carolina. <p>PLASMA AND PBMC FOR STORAGE- Please follow the consensus methods on the ACTG website at http://aactg.s-3.com/pub/download/SpecimenProcessingGuide.doc and http://aactg.s-3.com/pub/download/vir/freezingprotocol.doc</p> <ol style="list-style-type: none"> Specimens must be logged into the LDMS and labeled with the LDMS specimen #, PID, date, time of collection and derivative information. Aliquot clarified plasma into a minimum of 5-7 x 0.6mL volumes (LDMS code: BLD/EDT/PL2) Freeze immediately at -70°C. Freeze cells viably at 2.5 x 10⁶ cells per vial (BLD/EDT/CEL/DMS) and freeze according to the consensus method for cryopreservation. <p>SHIPPING INSTRUCTIONS: Sites should ship 2 x 0.6mL PL2 to University of North Carolina for batch RNA testing. All specimens should be packaged according to the ACTG Virology Manual (http://aactg.s-3.com/specship.htm) with strict attention to Federal and carrier-specific regulations for the shipment of diagnostic specimens. Include sufficient dry ice to keep the specimens frozen. Ship via overnight carrier (using the before 10:30 AM option) on the following preferred days: Monday, Tuesday and Wednesday. PBMCS will be stored at each site until requested by protocol team.</p> <p>DO NOT SHIP SAMPLES ON FRIDAY OR WHEN THEY WOULD BE RECEIVED ON A HOLIDAY. HOLIDAYS INCLUDE: New Year's Day, M.L. King's Birthday, Good Friday, Memorial Day, July 4, Labor Day, Thanksgiving and the day after Thanksgiving, and several days around Christmas.</p> <p>Notify the lab by FAX # prior to shipment with the airbill number. This is a Federal regulation. Notify the lab by FAX # prior to shipment with the airbill number. This is a Federal regulation.</p>			
<p>DESIGNATED LABORATORY/CONTACT PERSON: Melissa Kerkau University of North Carolina- School of Medicine Retrovirology Core Laboratory 709 Mary Ellen Jones Building, CB#7140 Chapel Hill, NC 27599-7140 TEL: (919)-966-6867 FAX: (919)-966-9873</p>		<p>NOTE: The Roche 1.5 UltraSensitive assay will be used for all HIV-1 RNA determinations. When a specimen has a result with >100,000 cp/mL, the specimen should be diluted 1:100 (performed as two serial 10-fold dilutions) and re-run on the UltraSensitive assay.</p>	

APPENDIX 3-E BAHAMAS PAEDIATRIC CARE TIMELINES AND SCREENING

Community Paediatrics

Community Paediatrics represents a series of routine reviews designed to achieve early identification and referral of children with developmental disorders and health problems.

Suggested Ages for Review

AGES	PHYSICAL REVIEW
Neonate	Birth – 8 weeks
Supine Infant	8 weeks – 6 months
Sitting Infant	6 months – 12 months
Mobile Infant	12 months – 24 months
Preschool Child	2 years – 5 years

Recommendations For Child Health Preventive Care Timeline

1. Adopting the recommendation of the American Academy of Paediatrics, routine Medical Examinations and reviews follow the new immunization schedule as follows: 1 month visit, 2 months, 4 months, 6 months, 9 months, 12 months, 15 months and yearly up to the age of 18 years.
2. At these visits the child is properly examined, and there is:
 - ✦ **Documentation of growth Parameters**
 - ✦ **Documentation of achieved milestones**
 - ✦ **Health promotion/education and parental counselling**
 - ✦ **Immunization (see immunization schedule)**

NB: Please note that the postnatal nurses presently see infants up to age 10 days. They are then referred to the appropriate clinic (based on residential address) and given their first child health clinic appointment by the visiting nurse.
3. The review of 9 months is an important one when parents can be particularly advised about developmental milestones and accident prevention during this “busy” phase.
4. Frequency of visits may be increased or decreased to meet the individual needs of the child:
 - e.g. Pre-term children
 - HIV –Positive children
 - Congenital heart disease
 - Child with special needs.
5. Health guidance in terms of development, nutrition, oral health, physical activity, injuries and poisons, smoking, alcohol and drugs, AIDS, sexual behaviour, family planning should be done as appropriate for the age of the child.

APPENDIX 3-E BAHAMAS PAEDIATRIC CARE TIMELINES AND SCREENING

Other screenings to be done at the child health visits:-

SCREENINGS	AGES
Hb estimations	1 year and Preschool visit
Urinalysis (routine)	Preschool visit (4 – 5 years)
Mantoux testing	Preschool visit
Hearing Screening	1 month and Preschool
Dental	1 year, then yearly to 18 years
Blood Pressure Measurement	3 years to 18 years
Head Circumference (OFC)	Birth to age 3 years
Height and Weight	Birth to 18 years
Sickle Cell Prep	Preschool
Stool Test	Preschool
SCP	Newborn

APPENDIX 3-F BAHAMAS IMMUNIZATION SCHEDULE PROTOCOL

Objectives:

1. To protect children under one year of age against Diphtheria, Pertussis, Tetanus, Poliomyelitis and Haemophilus Influenza type B (Hib B)
2. To protect children at one year of age against Measles, Mumps and Rubella.
3. To maintain immunity levels against childhood diseases, in nursery, pre-school, primary and secondary school-aged children.
4. To protect pregnant women and newborns against Tetanus.
5. To protect Post-natal woman against Rubella while decreasing the incidence and prevalence of Congenital Rubella.

Recommended vaccines and ages for administration

Age	Vaccines administered
2 months	<i>D.P.T., Hib and Oral Polio + Hep B (Hep B)</i>
4 months	<i>D.T.T., Hib and Oral Polio + Hep B</i>
6 month	<i>D.P.T., Hib and oral Polio + Hep. B</i>
12 months	<i>1st (MMR) Measles, Mumps, & Rubella</i>
15 months	<i>D.P.T. and Hib (Booster doses)</i>
4-5 years	<i>D.T. (paed.) Oral Polio & 2nd MMR</i>
10 years	<i>D.T. (Adult)</i>

Notes:

- (a) Should intervals be longer than those recommended between doses, it is not necessary to restart or add extra doses.
- (b) A personal history of a prior convulsion should be evaluated before initiating or continuing immunization with vaccines containing Pertussis component.
- (c) Rubella vaccine will be administered to women in the post-partum period.
- (d) The Haemophilus Influenza Type b (Hib) vaccine should be administered to infants in conjunction with DPT and/or Polio vaccines.
- (e) The injectable polio vaccine (IPV) should be administered to persons who are deemed eligible by their health care providers.
- (f) MMR should be administered twice to a child. In addition, eligible persons, especially college students, should be offered the vaccine.

APPENDIX 3-F BAHAMAS IMMUNIZATION SCHEDULE PROTOCOL **continued**

Pentavalent – is a multidose vaccine consisting of Diphtheria, Tetanus Toxoid, Pertussis, Hepatitis B, Haemophilus Influenza (Hib) type B

Recommended Dose & Route

- Tritanix solution – Hibenix pellets = >0.5ml
- Pentavalent > 0.5ml should be given intramuscularly

Schedule

- 2, 4 and 6 months. Only three doses are required to complete the primary series.

Contra-Indications

1. Do not give Pentavalent Vaccine to children with hypersensitivity to the vaccines.
2. Children with neurological conditions e.g. seizures or family history of seizures, cerebral Palsy or Severe Fever.

Procedure for Immunization

1. The nurse reviews the client's record and determines the type of vaccine to be given.
2. A "take home" immunization record is initiated.
For returning clients - the immunization control card is retrieved from the files and cross checked with the Client's "take Home" immunization record and the client clinic record.
3. The required vaccine is prepared and administered to the client.
4. The date is stamped on the white control card, immunization record and client record in the spaces provided.
5. The vaccine given is signed in the spaces provided
6. The date for the return appointment is stamped in the appointment section of the "take-home" immunization record.
7. The type, possible side-effects of the vaccine and management are explained.
8. The parent's/client's attention is drawn to the return appointment date and is encouraged to keep same.
9. The parent is reminded that the child's immunization record must be presented when applying for school.
10. The immunization record is given to the parent/client, the clinic records are kept for filing.

APPENDIX 3-F BAHAMAS IMMUNIZATION SCHEDULE PROTOCOL continued

Protocol for the Vaccination of Infants of Hepatitis Bs Antigen-Positive Mothers

Transmission of Hepatitis B from a Hepatitis B antigen-positive mother to her newborn can be prevented in approximately 95% of cases by early active and passive immunoprophylaxis of the infant.

1. Hepatitis B Screening

All pregnant women will be screened for Hepatitis B antigen (HBs antigen) at their first antenatal visit. Women who are HBs antigen negative and are at high risk for HB infection (e.g. Inter-current sexually transmitted Infection, partner of HBs antigen positive person) or those who have clinical Hepatitis during pregnancy, should have repeat screening.

2. Management of Infants born to HBs antigen-positive women.

In the first 12 hours of life, all such infants should receive:

Hepatitis B vaccine (see Schedule for Immunization)

Hepatitis B immune globulin (HBIG) 0.5 ml.

Subsequently doses of the vaccine should be given as recommended. For Infants <2Kgs at birth, the initial dose of vaccine should be counted as part of the 3 dose schedule.

Infant should be tested for HBs antibodies and HBs antigen at 1 – 3 months after completion of the vaccination series. Infants who do not produce adequate antibodies and are HBs antigen-negative should receive an additional dose of vaccine.

Table 1. RECOMMENDED DOSAGES OF HEPATITIS B. VACCINES

<u>Recombivax HB</u>	<u>Energix-B</u>			
	<u>Dose (g)</u>	<u>(ml)</u>	<u>Dose (g)</u>	<u>(ml)</u>
Infants of HBs antigen-positive Mothers Paediatric formulation	5	1.0*	10	0.5

NB: Doses are given at birth, 1 and 6 months. A 4-dose schedule is recommended for pre-term <2 kg at birth.

Module 4 Adherence To Care and Treatment



Total Module Time: 270 minutes (4 hours, 30 minutes)

Objectives: By the end of this session, participants will be able to:

- Define adherence and explain its importance
- Explain the difference between adherence to care and adherence to treatment
- Discuss the roles of multidisciplinary team members in assessing and supporting adherence to care and treatment
- Identify barriers to adherence and strategies to overcome them

Adherence to Care and Treatment

Module 4: Adherence to Care and Treatment

Objectives

- Define adherence and explain its importance
- Explain the difference between adherence to care and adherence to treatment
- Discuss the roles of multidisciplinary team members in assessing and supporting adherence to care and treatment
- Identify barriers to adherence and strategies to overcome them

Module 4: Adherence to Care and Treatment

- HIV care has changed the way we practice
- Providers who never talked to each other now must – the multi-disciplinary team is critical to comprehensive care

Slide 3

What is Adherence?

- Brainstorm



Module 4: Adherence to Care and Treatment

3

Slide 4

Adherence versus Compliance

- Compliance: “do as I say”
- Adherence – a shared decision

Module 4: Adherence to Care and Treatment

4

- Compliance
 - To do or bend under extreme force
 - TOLD to do by the doctor/pharmacist/nurse
 - This technique ignores the important of relationship and teamwork
 - This method does not have lasting effects
- The term “compliance,” which was formerly used to describe the client -provider relationship in regard to treatment plans, means to act in accordance to a command - the doctor/nurse tells the client what to do and she must do it without question
- “Adherence” indicates that all are working together to make behaviour changes to improve health

Slide 5

Adherence Defined

- The engaged and accurate participation of a client in a plan of care
- Implies understanding, consent, and partnership
- A broader term than “compliance”
- Includes both adherence to care and adherence to treatment

Module 4: Adherence to Care and Treatment

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Slide 6

Adherence to Care

- Client comes to appointments
- Client participates in education and counselling and is receptive to idea of home visits or other outreach
- Completes tests as requested
- Modifies lifestyle as needed
- Makes commitment to secondary prevention of HIV

Source: The Columbia Clinical Manual, The International Center for AIDS Care and Treatment Programs, Columbia University Mailman School of Public Health, September 2004

Module 4: Adherence to Care and Treatment

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- The point here is that the client is involved in her/his care and willingly accesses care and necessary services

Slide 7

Adherence to Treatment

- Client's behaviour with respect to taking medication
- How closely client follows prescribed regimen
- Client's ability to fit the regimen into their lifestyle

Module 4: Adherence to Care and Treatment

- Lifestyle refers to the way someone lives – their type of work, home life, social life, support systems, etc...
- The emphasis here is on medication

Slide 8

Animation Clicks: 1

Why is Adherence Essential in the Treatment of HIV/AIDS?

- Suboptimal adherence leads to:
 - Loss of virologic control
 - Development of resistance to the medications
 - Loss of treatment options
 - Potentially, ongoing damage to the immune system

Module 4: Adherence to Care and Treatment

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- Loss of virologic control is the inability to suppress HIV
- Unlike most diseases, near-perfect adherence to treatment is required for a durable, effective response

Slide 9

Why is Adherence Essential in the Treatment of HIV/AIDS (2)

- Missing or skipping doses of medication can:
 - Increase the risk of developing resistance
 - Cause the viral load to increase
 - Change the structure of the virus

Module 4: Adherence to Care and Treatment

- Resistance refers to the ability of the HIV virus to mutate or change its structure in such a way that it loses its sensitivity to a particular drug
- Resistant HIV can function and grow despite the presence of antiretroviral agents
- The point to be aware of here is that skipping or missing doses may result in increased viral load and the virus changing its structure

Slide 10

Adherence Means.....



- A shared decision making process between the client and the healthcare provider
- The client understands and agrees to make behaviour changes to improve their health

Module 4: Adherence to Care and Treatment

- Adherence refers to
 - The fact that the client has participated in and understands the plan of care and treatment
 - The client and his care providers are “partners”, both sharing the responsibility of adherence to treatment
- “Adherence” indicates that all are working together to make behaviour changes to improve health

Slide 11

Benefits of Adherence to Care

- Early diagnosis of complications
- Prevent opportunistic infections
- Develop positive client-provider relationship
- Decreased stigma and isolation
- Community based support and mobilization

Module 4: Adherence to Care and Treatment

- The early diagnosis of complications can also delay HIV disease progression
- When clients are involved in their care and you see them on a regular basis, they are often able to avoid acute illness
- Having a positive relationship helps make strengthen communication, which may make it easier for client to speak about issues
- Having a good support system and feeling connected to others gives feelings of hope and acceptance

Slide 12

Adherence To Treatment is.....

- The right drugs



- In the right way



- At the right time



Module 4: Adherence to Care and Treatment

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- Adherence is multi-faceted
- clients **MUST** understand that they can not just take them how and when they feel like it!
- clients must understand that they must take their medications even when they feel well
- The HCW must ensure that all clients understand this before starting treatment

Slide 13

Taking the Right Drugs

- The right drugs and the right doses **MUST** be taken
- If not, the virus continues to replicate and resistance can develop



Module 4: Adherence to Care and Treatment

- Maintaining a certain amount of the drug in the blood at all times is essential to prevent viral replication and resistance from occurring

Slide 14

At the Right Time



- There is usually a window period of approximately one hour
- Stress exact times of doses, or the amount of virus will increase and resistant virus may emerge

Module 4: Adherence to Care and Treatment

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- The timing of the drug doses is extremely important
- When referring to a “window” period of about an hour, it generally means either an hour earlier or an hour later than normal
- When doses are missed or not taken on time drug levels in the blood fall, HIV suppression is reduced, allowing reproduction

In the Right Way

- Ignoring dietary restrictions may effect the amount of drug absorbed
- If not enough of the drug is absorbed, the amount of virus will increase and resistance is more likely to occur



Module 4: Adherence to Care and Treatment

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- In addition to getting the times, doses and drugs right, some drugs have dietary restrictions
 - To be taken with or without food
- Not adhering to dietary restrictions can be like taking only half of a dose and for some drugs no dose
- If not adhered to, the amount of drug absorbed may be insufficient, meaning viral suppression is reduced
- In ART all drugs have dietary requirements and must be adhered to – eg. “take with/without food”

Real Life Adherence



Module 4: Adherence to Care and Treatment

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Promoting Adherence

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Approach should be: <ul style="list-style-type: none"> - Multidimensional - Multidisciplinary - Continuous | <ul style="list-style-type: none"> • Client should be: <ul style="list-style-type: none"> - Supported - Counsellled at every opportunity |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Module 4: Adherence to Care and Treatment

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- A clients’ ability to adhere can change over time...a strategy that works at one time may not at another
- Life changes (marital status, job, living situation, etc.) can impact adherence
- Adherence can become more difficult with time. So someone who has had perfect adherence for quite awhile may lapse after time passes
- Promoting adherence is: on-going; repetitive; multidisciplinary

Slide 18

Promote Adherence From the Start!

- Promoting adherence must start prior to beginning treatment!!!
- Never rush to treat!

Module 4: Adherence to Care and Treatment

- It is important to understand that it is often necessary to have multiple meetings with a client before treatment is initiated
- Assessing the readiness of a client is essential for successful outcomes
- Promoting adherence begins prior to the client starting treatment
- If difficulties and challenges are discussed beforehand then the client is given more time to consider any life style changes, interventions and strategies needed that may assist in her adherence
- This way, clients are involved in their treatment from the very beginning and know what to expect

Slide 19

How Much Adherence is Good Enough?

The answer is

100%

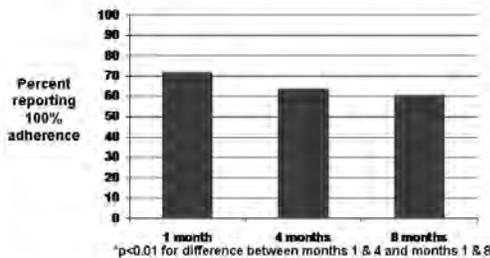
Adherence

Module 4: Adherence to Care and Treatment

- As doses are missed, HIV starts to replicate again, and levels of virus in the blood increase
- 100% adherence means every single drug being taken at the right dose, in the right time, in the right way. For life!

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Adherence to Treatment



Module 4: Adherence to Care and Treatment

Source: Mannheimer et al, CPOA, 2000

- Since adherence declines over time for many clients, it is critical to keep reinforcing the message regarding the importance of adherence
- The longer that a client is in treatment, the more likely to be less adherent

A HUGE Challenge.....

- Clients may struggle with adherence for many reasons
- Adherence is not just about remembering to take medication



Module 4: Adherence to Care and Treatment

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- We must always remember how difficult adherence is
- There may be many factors that affect a clients ability to adhere
- Some of these factors may be beyond the control of the individual, yet they are forced to cope with them

Barriers

- Brainstorm:
What are some barriers to adherence?



Module 4: Adherence to Care and Treatment

Barriers to Adherence

- Misunderstanding/misinformation
 - Different understanding of HIV/AIDS
 - Inadequate understanding of regimen
 - Primary care/prevention not familiar
 - Importance of adherence not explained
 - Appointment systems not well developed

Module 4: Adherence to Care and Treatment

- Different understanding of HIV/AIDS
 - Health beliefs (client's perception of impact of treatment, unrealistic expectations, belief in a cure)
 - Culture
- Inadequate understanding of regimen
 - Timing, dosing, food restrictions
 - Interactions with herbal/traditional medications
- Primary care/prevention not familiar
 - Don't understand going to the doctor if not feeling well
- Importance of adherence not explained
 - client may think that they can go for a test or appointment whenever they feel like
- Appointment systems not well developed
 - May not be clear to client when they should return and where to go

Slide 24

Barriers to Adherence (2)

- Financial
- Competing priorities
- Stigma
- Disclosure issues
- Household concerns

Module 4: Adherence to Care and Treatment

- Financial
 - Tests
 - Clinic appointments
 - Transportation
 - Use of time
- Competing priorities
 - Work
 - Travel/being away from home
 - Childcare
 - Family commitments
- Disclosure issues
 - Privacy
 - Secrecy
- Household concerns
 - Inadequate access to food
 - Lack of electricity
 - Access to water

Slide 25

Barriers to Adherence (3)

- Medication issues
- Psychological issues
- Religious beliefs
- Substance use
- Forgetting doses



Module 4: Adherence to Care and Treatment

- Medication issues
 - Difficulty swallowing medicine
 - Taste
 - Side effects
- Psychological issues
 - Depression
 - Denial
 - Life problems

Slide 26

How Can HCWs Support Adherence?

Module 4: Adherence to Care and Treatment

HCW Interventions to Support ARV Adherence

- Client education and counselling
- Communication
- Confidentiality
- Access to uninterrupted medication supply
- Care Setting
- Directly (or modified) Observed Therapy (DOT) - Systematic observation of ARV doses

Module 4: Adherence to Care and Treatment

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- Establishing good communication with clients builds trust and is essential to effective client care. It can assist in identifying client problems, needs and barriers to care
- Confidentiality is a major issue that impacts on client's adherence to care, particularly the stigma and discrimination that disclosure of HIV status may evoke
 - Address the issue with all clients upon enrollment
 - Assure that HIV status will not be intentionally disclosed without consent
 - Counsel about the importance of discretion regarding other clients receiving HIV services
- client needs to know how to have access to their medications without interruption
 - Ensure that clients understand where, when, and how to obtain medications
 - Collaborate with pharmacy and multidisciplinary team
 - Schedule home visit, if possible
 - Assist clients to safeguard medicines
 - Educate client on dangers of sharing medications

Education and Counselling that Supports Adherence

- Ask clients to describe their treatment regimen at each visit
- Discuss treatment goals
- Discuss Immune Reconstitution Syndrome
- Provide tips on how to remember medications
- Provide information about adverse effects
- Schedule home visit
- Refer to support groups



Module 4: Adherence to Care and Treatment

- Personalize education to the client
- Patients who understand their illness are more likely to be adherent
- All clients should have ongoing access to verbal, written and/or visual information about HIV
- Ask questions that will allow you to get a better understanding of how they are doing:
 - What does s/he know about medications? What are his/her expectations?
 - What are his/her potential adherence supports?
 - What are his/her potential adherence barriers?
- Discuss goals of treatment, successes achieved with treatment
- Discuss how to take the medications
 - Use written or visual reminders, pill boxes
 - Detailed and repeated instructions on how to take medications (including timing, dosing, food restrictions, drug interactions)
 - Provide tips on how to remember medications, including daily cues, reminders, partners
- Provide information about how to recognize and manage adverse effects
- Schedule home visit to assess structure of family and support system

When a Pill is Missed

- Although the goal is optimal adherence, no one is perfect
- Be supportive and non-judgmental
- Discuss how to get back on track as soon as possible after a missed pill
- Encourage continued communication with clinic staff and counsellor on handling a miss pill

Module 4: Adherence to Care and Treatment

- Acknowledge and normalize the experiences of 'slips' (missing pills) and possible guilty feelings generated from missing medications
- **Blaming and intimidating the participant is NOT helpful** or can only have limited effect
 - The participant may feel that you are not trying to understand their situation
- To help the participant successfully handle slips is to acknowledge and accept that they made a mistake
- Work with the participant to figure out why it happen and ways to prevent it

Slide 30

Reminder Strategies

- Involve partner if possible, or identify a person to help remember to take pills
- Overt reminders
- Use more than one strategy
- Storage of pills

- Overt reminders
 - Watch
 - Timer
 - Tie in with daily activities
- Storage of pills
 - e.g. place them somewhere you see every day, but out of direct sun exposure

Module 4: Adherence to Care and Treatment

Slide 31

Peer Support Groups



- Peer support groups and one-on-one peer education are powerful tools for health promotion and adherence

- Support groups encourage honesty and exploration
- Open discussions can reduce stigma and isolation

Module 4: Adherence to Care and Treatment

Slide 32

Communication that Supports Adherence

- Convey concern and respect at all times
- Practice active listening
- Ask specific questions to facilitate client sharing
- Restate answers to ensure understanding
- Ask clients to restate information given

- Regardless of what a client tells you, work to project concern and respect not just by what you say but how you say it
- Asking specific, open-ended questions to facilitate client sharing allows for them to respond with more than a nod or just a “yes” or “no”

Module 4: Adherence to Care and Treatment

Effective Communication Skills

- Attending
- Paraphrasing
- Reflection of feeling
- Summarizing
- Probing
- Self-disclosure
- Interpreting
- Confrontation

Module 4: Adherence to Care and Treatment

- In addressing barriers to adherence, it is important to have the ability to communicate effectively
- With good communication, many of the barriers just mentioned on the previous slides can be averted
- Attending:
 - Listening while observing
 - Communicating attentiveness (verbal follow-up, eye contact, non-verbal cues)
- Paraphrasing:
 - Restating client's previous statement
 - Determining the basic message of the client's statement and then rephrasing in your own words
- Reflection of Feeling:
 - Focusing on emotional content of client's message
 - Empathizing with the client
 - Identifying feelings of client and formulate a response based on feelings identified
- Summarizing:
 - Reviewing the main points discussed
 - Select main points and bring them together in a complete statement
- Probing:
 - identifying subject or topic that needs further discussion or clarification
 - Use of open-ended questions to help HCW and the client to examine the situation in greater depth
- Self-Disclosure:
 - Sharing (appropriately) personal feelings, attitudes, opinions and experiences for client's benefit
 - Can increase intimacy of the communication
- Interpreting:
 - Determining client's basic message and adding additional ideas
- Confrontation:
 - Using questions/statements to encourage clients to face issues
 - Should not accuse, judge, devalue client's beliefs
 - Pointing out contradictions in the client's behaviour and/or statements, or guiding the client to face an issue that seems as if it is being avoided

Slide 34

Care Setting That Supports Adherence

- Warm and comfortable
- Accessible with co-located services
- Convenient hours
- Reimbursement for transportation costs (if available)

- Care Setting
 - Patients should be given motivation to return to the care site and remain in care
 - A welcoming and comfortable care environment that can offer flexible and creative incentives can motivate clients to become involved in their care

Module 4: Adherence to Care and Treatment

Slide 35

DOT to Support Adherence

- At the clinic
- At home
- In the community
- Be creative!

Module 4: Adherence to Care and Treatment

Slide 36

Benefits of DOT

- Allows for accurate monitoring of client adherence
- Provides additional opportunities to monitor clients' general health status
- Community and treatment partner approaches can help to address stigma by promoting disclosure of HIV status and decision to start ART

Module 4: Adherence to Care and Treatment

Slide 37

Bahamas DOT

- DOT is a strategy employed to promote adherence to ARVs in the Bahamas
- At commencement of ARVs, adherence counselling is carried out and DOT commenced if deemed necessary

Module 4: Adherence to Care and Treatment

Slide 38

DOT in Practice

- DOT may be carried out by the HCW or a responsible family member or close friend
- Community health workers and volunteers have been trained to do DOT for clients on ART

Module 4: Adherence to Care and Treatment

Slide 39
Animation Clicks: 1

Ways Bahamas is Improving Adherence

- Providing client with:
 - Transportation to and from the clinic
 - Bus fares
 - Excuse/sick notes to take to employer to cover time spent at clinic/pharmacy
- Delivering medication to the client
- Reducing waiting time at the clinic or pharmacy
- Establishing and maintaining good nurse-client relationships
- Assuring and promoting confidentiality

Module 4: Adherence to Care and Treatment

Role Play



Module 4: Adherence to Care and Treatment

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Handout 4.1

Barrier Role Play

Introduction: Doreen has been coming to the clinic regularly for her appointments for over 2 years. She began ARV treatment just 3 months ago. At her current visit she discloses to the HCW that she sometimes takes all of her pills in the morning to not disrupt the rest of her day. She also says that sometimes she forgets altogether to take her medication.

HCW	<ul style="list-style-type: none">Using effective communication skills, see if you can find out all of the barriers that Doreen is facing
<i>Doreen</i>	<ul style="list-style-type: none">As HCW explores what are the barriers, make up reasons for why you are not totally adherent,<ul style="list-style-type: none">i.e. “I don’t understand how to take the medication”, “I was out dancing with my friends”, “I had to go to work”, “I didn’t feel comfortable in front of my family”, “I just don’t remember when I am feeling good”, “Sometimes they make me feel sick”
Observer	<ul style="list-style-type: none">Pay attention to what the counsellor is saying and also what her body language is saying, are they congruent?Watch for what is done well, what appears to be challengingThink about how you might handle the situation differently

Slide 41

Possible Indicators of Poor Adherence

- Immunologic and virologic factors
- Medication usage patterns

- Immunologic and virologic factors
 - Increase viral load
 - Decrease in CD4 count
 - Presence of new opportunistic infections
- Medication usage patterns – asking the questions
 - Many unused pills at pill count (“You missed a few doses? Why?”)
 - Lapses in pharmacy refill records

Module 4: Adherence to Care and Treatment

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Slide 42

Predicting Adherence to Treatment

- Studies have shown that providers are unable to reliably predict which of their clients will be adherent to medications and which will not

- Structured adherence assessment is required:
 - In research settings, adherence is assessed via: electronic monitoring, pill counts or measuring liquids, client interview, drug levels, and so on
 - In clinical settings, the most practical tools are client interview (self-report), pill counts, and review of pharmacy records

Module 4: Adherence to Care and Treatment

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Assessing Adherence (2)

Adherence must be assessed at each visit and at every link of the care chain

- The whole team is responsible for assessing adherence - Physician, Nurse, Pharmacist, Social Worker, etc

Module 4: Adherence to Care and Treatment

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Slide 44

Assessing Adherence

- Providers must formally assess adherence
- An interdisciplinary assessment approach is most successful
- Intensive assessment should be conducted during ARV initiation
- Assessment is a continual process that must be revisited during every client interaction

Module 4: Adherence to Care and Treatment

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- Successful adherence assessment involves multiple providers
- Clients must be asked questions directly regarding missed appointments and pill taking
- A client may be reluctant to disclose a missed medication dose to the clinician who is prescribing them, but may feel more comfortable discussing this with another care provider
- Consistent multidisciplinary team meetings are necessary to exchange critical client information regarding adherence

Slide 45

Adherence to Treatment: Assessment

- Rigorous adherence assessment is required during ARV initiation using client and family interviews
- The first weeks and months of antiretroviral therapy are a "danger point" for clients

Clients need encouragement and support!

Module 4: Adherence to Care and Treatment

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- The early stage of treatment can be very complicated for clients
 - Clients must cope with a lifestyle change (daily medications)
 - Clients may experience side effects (which tend to be worse in the first few weeks of therapy)
 - Suboptimal adherence during first few months of therapy carries very high risk of developing resistance

Slide 46

Adherence to Treatment: Assessment (2)

- Client interview/client self-report:
 - The way in which questions are asked can determine the answers that are given:
 - "You took all of your medicines, right?"
 - "You haven't missed any doses, have you?"
 - "You took the medicines like I told you to, didn't you?"

Module 4: Adherence to Care and Treatment

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- Emphasize to clients that it is important for them to tell the truth, even if the medications are missed or not taken correctly
- If providers don't ask, clients won't tell
- Patients are unlikely to volunteer information about non-adherence
- Avoid using questions that may be answered either "yes" or "no"
- These are examples of how NOT to ask about adherence!
- Positive reinforcement is a very good approach – "I can see you are taking your meds, your VL is dropping – very good"

Adherence to Treatment: Assessment (3)

- Assessment requires a supportive and nonjudgmental approach
- Acknowledge that medication adherence is difficult
- Assess missed doses
- Assess barriers to adherence and support strategies

Module 4: Adherence to Care and Treatment

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- It is critically important that providers know the following information about each client:
 - Are clients taking medications as prescribed? How many doses are missed?
 - What makes it difficult for clients to take medications? Reasons may include side effects, fears about the medications, difficulty getting to the clinic, etc.
 - What helps clients to take medications?
- Patients on ARV medications should know that if they are going to stop medications, they should stop all their ARV medications at once
- A respectful, nonjudgmental attitude is vital in framing questions
- It is important to project concern and respect
- Acknowledge that medication adherence is difficult
- At each visit, providers should assess adherence for all medications, not just ARVs

Adherence to Treatment: Assessment (4)

- Examples of questions to assess barriers or support strategies:
 - "When is it most difficult to remember your medications?"
 - "It's not easy to take medicine every day. What things help you to take your pills?"
 - "What kinds of problems make it hard to take your pills?"

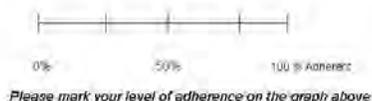
Module 4: Adherence to Care and Treatment

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- You may need to prompt clients with questions about specific problems such as side effects, forgetting, etc.
- Ask why whenever it is plausible and then assess which reasons may be viable and which may not

Adherence to Treatment: Assessment (5)

- Consider developing tools to allow clients to describe their level of adherence outside of a direct question



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- This is an example of one type of assessment tool that can be used, Handout 4.2 is another example of a different style of tool (checklist)

Slide 50

Adherence to Treatment: Assessment (6)

- Do not assume “once adherent, always adherent”
- Many things can change over time
- After clinical improvement occurs, clients may assume they no longer need medications
- Individualized adherence counselling shown to be more effective than medication alarms

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- Keep in mind that over time there may be changes occurring in the life of the client
 - Patients may tire of taking medications – pill fatigue
 - Family structure may change causing new adherence challenges
- Counselling needs to be repeated
- Adherence fluctuates!
 - At certain times some clients may need special attention
 - HCWs need to recognize these times and work with clients to address the barriers to adherence

Slide 51

Skills Clients Need for Adherence

- Self-efficacy
- Feel psychologically well
- Not have substance use interference
- Have support available
- The ability to integrate the regimen into their lifestyle
- Problem solving skills
- Understanding of why doses shouldn't be missed

Module 4: Adherence to Care and Treatment

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- Self-efficacy - believe they can do it
- Feel psychologically well - depression interferes with adherence
- Problem solving skills to accommodate changes in routine and schedules
- Understanding the regimen and the importance of not skipping doses (information)
 - The schedule of doses and special instructions
 - The side effects
 - What to do if you have a bad reaction or feel much worse
 - Give a backup plan

Slide 52

Adherence to Care: Assessment

- Did the client miss a clinical appointment?
- Did the client miss a supportive services appointment (counselling, nutrition, support group)?
- Did the client miss a test?
- Did the client pick up/receive medications from the pharmacy as planned?

Module 4: Adherence to Care and Treatment

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- Assessment of adherence may require an evaluation of administrative infrastructure

Adherence to Care: Assessment (2)

- Suggested methods include:
 - Daily review of actual versus scheduled client attendance
 - Periodic review of pharmacy records
 - Periodic review of program data
 - Multidisciplinary team meetings and collaboration

Module 4: Adherence to Care and Treatment

- Successful adherence assessment involves multiple providers
- Patients must be asked questions directly regarding missed appointments and pill taking
- A client may be reluctant to disclose a missed medication dose to the clinician who is prescribing them, but may feel more comfortable discussing this with another provider of care
- Consistent multidisciplinary team meetings are necessary to exchange critical client information regarding adherence

Trigger Scenario



Assessing Readiness to Begin ARV Treatment

Module 4: Adherence to Care and Treatment



Handout 4.2

Medication Adherence Checklist

Patient Name _____

Date _____

1. Review Treatment History

- _____ current regimen
- _____ previous medications
- _____ side effects
- _____ other treatments

2. Discuss Current Health Status

- _____ overall health and current problems
- _____ latest laboratory tests (including CD4 count)
- _____ goals for health

3. Assess Medication Knowledge, Behaviors and Attitudes

- _____ knowledge of HIV medications
- _____ understanding of drug resistance and implications
- _____ criteria for evaluating medications
- _____ attitude about taking medications

4. Review Patient/Family Living Situation

- _____ daily activities: work, school and travel schedule
- _____ eating patterns
- _____ access to health center
- _____ special factors: disclosure of HIV diagnosis, medication storage issues

5. Describe Proposed Medication Regimen

- _____ drug names
- _____ dosing
- _____ food requirements
- _____ special instructions/how to give
- _____ side effects
- _____ storage

6. Assess Readiness for Regimen

- _____ review possible drug interactions
- _____ review barriers to adherence (support system, work, living situation)



Handout 4.2 (continued)

7. Document the Treatment Plan

- _____ give information on drug names, dosing, frequency, food and storage requirements
- _____ discuss potential side effects and a plan for response, including prescriptions
- _____ review logistics of filling and refilling prescriptions

8. Plan to Follow-up

- _____ schedule next appointment; discuss what should prompt an earlier visit
- _____ schedule support by other members of the health care team as appropriate (home visit, follow-up calls)

9. Closure

Ask the following questions:

- _____ Do you know how and when to get your prescriptions filled?
- _____ Do you know when, and how, to get more pills when you need them?
- _____ When is your next appointment with the doctor?
- _____ Are there other things you need to do to make it easier to follow your treatment plan?

Review each medication and ask the following:

- _____ How many times each day?
- _____ How many pills each time?
- _____ With food or empty stomach?
- _____ What side effects will you watch out for, and what will you do if you get them?

Additional Comments

Signature of health care provider _____



Handout 4.3

Observation Checklist: Assessing Readiness for Antiretroviral Drugs

Instructions:

Watch the video entitled *Assessing Michele's Readiness for ARVs*. As you watch each segment of the video, look for the components of an effective assessment interview using this checklist. Use the scoring system below to guide your observation and note taking.

Scoring Guide: No = behavior was not observed
Yes = behavior was definitely observed
Somewhat = behavior was observed to a limited extent

Video Segment #1 Content	Observed?	Notes
Building a Relationship with the Patient		
Is the Health Care Worker (HCW) welcoming?	N Y S	
Does she use language that is nonjudgmental?	N Y S	
Did she use open-ended questions?	N Y S	
Did she contribute to patient's understanding of HIV?	N Y S	
Did the HCW provide information about the patient's health in a clear and supportive manner?	N Y S	
Did she involve the patient in assessing her readiness for ARV therapy?	N Y S	
Did the HCW ask pertinent questions about Michele's <i>physical</i> health?	N Y S	
Use four words to assess Michele's overall physical health?		
Did the HCW ask pertinent questions about Michele's <i>mental</i> health?	N Y S	
Use four words to assess her overall mental health?		
Does Michele describe having a <i>support system</i> available to her?	N Y S	

**Please stop and wait for next
video segment**

Scoring Guide: No = behavior was not observed
Yes = behavior was definitely observed
Somewhat = behavior was observed to a limited extent

Video Segment #2 Content	Observed?	Notes
Creating a Treatment Plan with Michele		
Does the HCW support Michele's <i>feelings and fears</i> ?	N Y S	
Does she reinforce the importance of having family or friends as a <i>source of support</i> ?	N Y S	
Does she demonstrate the <i>positive experiences</i> of disclosure and discuss the <i>challenges</i> ?	N Y S	
Does the HCW stress the importance of committing to <i>therapy</i> ?	N Y S	
Does the HCW stress the importance of <i>regular appointments</i> with a medical provider?	N Y S	
Does the HCW help/support the patient in making <i>plans for the future</i> in relation to her treatment?	N Y S	
Describe two ways the HCW used to involve Michele in planning for her treatment.		
Did the HCW summarize what she heard from Michele about her support system?	N Y S	
Did the HCW take a positive approach to discussing how Michele can stay on treatment?	N Y S	
Did the HCW encourage Michele to consider the barriers to staying on treatment?	N Y S	
Use four words to describe how the HCW spoke with Michele about her readiness to begin treatment.		

Please stop and wait for next video segment

Scoring Guide: No = behavior was not observed
Yes = behavior was definitely observed
Somewhat = behavior was observed to a limited extent

Video Segment #3 Content	Observed?	Notes
Strategies for Reinforcing Adherence		
Did the HCW adequately describe the medications Michele would be taking?	N Y S	
Did she adequately explain how to take them?	N Y S	
Was the HCW honest about the difficulty of taking the drugs?	N Y S	
Did the HCW provide encouragement and support to Michele about the challenges of remaining adherent?	N Y S	
Did the HCW address the importance of follow-up care?	N Y S	
Did the HCW make a follow-up appointment with Michele?	N Y S	
<p>What was one of the best strategies the HCW used to stress the importance of adherence? What else could the HCW have done to stress adherence?</p>		

Slide 55

Information HCW Needs to Know



Module 4: Adherence to Care and Treatment

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- In order for adherence counselling to be effective, it is extremely important for the HCW to be informed and have a good understanding of how to address many of the concerns that may come up for clients

Slide 56

Immune Reconstitution Syndrome (IRIS)

- Occurs when HAART initiation strengthens the immune system resulting in an inflammatory reaction against one or more opportunistic infections (OIs)

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- HAART often results in improvement in or resolution of many opportunistic infections
- However, initiation of HAART in the setting of an opportunistic infection can also result in Immune Reconstitution Syndrome (now referred to as IRIS though previously was IRS)
- Often the OI is not diagnosed until after HAART initiation due to lack of inflammatory response from debilitated immune system

Slide 57

OIs Associated With IRIS

- Mycobacterium avium complex (MAC)
- Mycobacterium tuberculosis (TB)
- Toxoplasmosis
- Hepatitis B and C
- Cytomegalovirus (CMV)
- Varicella zoster virus (VZV)
- Cryptococcal infection
- Progressive multifocal leukoencephalopathy (PML)

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Slide 58

IRIS

- Typically develops within first 6 weeks of HAART initiation
- Characterized by fever and other clinical manifestations of the underlying OI
- Difficult to distinguish between IRIS, drug toxicity, or a new OI
- May present with atypical signs and symptoms

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- Clinicians must be vigilant for IRIS, because it may present atypically and be challenging to diagnose
- clients need to be educated about the occurrence of IRIS as it may significantly impact HAART adherence
- Remember to bring client back and maintain communication, follow up is essential when ART is first initiated

Slide 59

Treatment for IRIS

- Typically treated by adding non-steroidal anti-inflammatory agents (NSAIDs) to corticosteroids to alleviate inflammatory response
- Symptoms may take weeks or months to subside
- TB most frequent OI associated with IRIS

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- clients with TB can develop high fevers, worsening lymphadenopathy or transient severe worsening of pulmonary infiltrates, and expanding central nervous system lesions
- Clinical guidelines have not been developed yet for IRIS

Slide 60

Case Study: Bernice and Albert

Module 4: Adherence to Care and Treatment



Handout 4.4

Case Study: Bernice and Albert - Adherence to Care and Treatment

Module 2: Introduction / HIV and Pregnancy

Bernice is 25 years old and a secretary for a medical office. She meets a man, Albert, whom she likes very much. Albert is handsome, funny and five years older. He has a job which takes him travelling to the family islands sometimes. Albert is unaware of his HIV status. Albert and Bernice become a couple and are having unprotected sex. A month after the relationship starts Bernice misses work due to the flu. She has fever, swollen glands and complains of joint pain. Since Bernice works in a medical office, she went for an HIV test which was negative.

Bernice suspects she is pregnant a year after meeting Albert. She shows up at the antenatal clinic at 10 weeks gestation and receives group counselling and testing on HIV and safe motherhood and consents to a test. At the subsequent appointment, she is informed of her HIV positive status, post-test counselled and encouraged to bring her partner in for testing. Bernice is shocked because she feels fine. At her 3rd visit, Bernice is 15 weeks gestation and comes in alone. She is provided with information and provided with ANC care.

Module 4: Adherence to Care and Treatment

Bernice returns to the ANC clinic. She has not told anyone about her HIV status, as she is afraid of what will happen to her job and in her family. She is committed to making sure the baby is healthy. Bernice will be offered Duovir and Nevirapine for PMTCT per the national guidelines. As she is now 28 weeks pregnant, it is time for her to start on antiretrovirals.

1. In your program, who will make the decision to start Bernice on ARVs?

2. Who will discuss adherence and side effects with Bernice?

3. When and where will this patient education occur within the program?

4. Where will this information be documented?

5. How will information be shared with other HCWs? How will confidentiality be maintained?

Slide 61

Key Points

- Adherence is essential to the successful care of clients with HIV/AIDS
- Adherence to treatment describes client's behaviour with respect to taking medication
- Adherence to treatment can minimize the emergence of viral resistance

Module 4: Adherence to Care and Treatment

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Slide 62

Key Points (2)

- Unlike most diseases, near-perfect adherence to treatment is required for a durable, effective response to HIV
- HCWs play a crucial role in the assessment and monitoring of adherence
- HCWs are unable to discern client adherence ability: formal assessment of adherence is needed

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Slide 63

Key Points (3)

- Assessment is a continual process that must be revisited during every client interaction
- A multidisciplinary approach is essential

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Module 5 Infant Feeding



Total Module Time: 100 minutes (1 hour, 40 minutes)

Objectives: By the end of this session, participants will be able to:

- Recognize risks and benefits of different infant feeding practices in the context of HIV infection
- Recognize the cultural factors which impact women's choices on infant feeding
- Be familiar with national and regional guidelines promoting breastmilk substitution for HIV-positive women to reduce MTCT of HIV
- Know what information and support to offer women/families to implement the safest infant feeding option

Slide 1

Infant Feeding Counselling

Interventions to Reduce the Risk
of HIV Transmission

Module 5 Infant Feeding

Slide 2

Introduction

“Feeding our children is...”

Module 5 Infant Feeding

Slide 3

Objectives

- Recognize risks and benefits of different infant feeding practices in the context of HIV infection
- Recognize the cultural factors which impact women's choices on infant feeding
- Be familiar with national and regional guidelines promoting breastmilk substitution for HIV-positive women to reduce MTCT of HIV
- Know what information and support to offer women/families to implement the safest infant feeding option

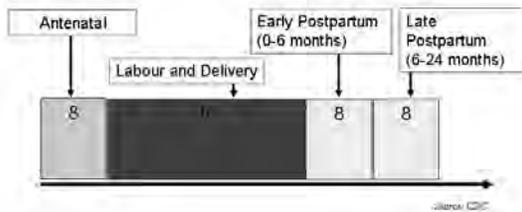
Module 5 Infant Feeding

Infant Feeding Considerations

- HIV transmission and research findings
- Cultural Issues
- Stigma/Disclosure
- Current research findings
- Policies on infant feeding

Module 5 Infant Feeding

Timing of Mother-to-Child HIV Transmission With Breastfeeding and No ARV



Module 5 Infant Feeding

- This slide illustrates the risk of MTCT from breastfeeding
 - Of 100 infants born to women with HIV, 60 will not be infected
 - 40 will acquire HIV: 8 in utero, 16 during Labour and Delivery, 8 during early breastfeeding, 8 during late breastfeeding
 - With PMTCT, good prenatal care decreases the risk of transmission in utero
 - ART reduces the risk during L&D
 - Safer infant feeding eliminates or reduces the risk postpartum
- Interrupting HIV transmission during Breastfeeding is challenging for mother and Health Care Worker (HCW):
 - For HCW, we do not know if the baby is already infected, either in utero or at L&D
 - For mother, choosing not to breastfeed may be inadvertent disclosure, or cause illness in the infant

Slide 6

Infant Feeding—WHO Consensus Statement 2006

- Most appropriate option determined by mother's individual circumstances
 - Health status
 - Local situation
- Must also take into consideration:
 - Health services available to mother
 - Counselling services available
 - Support likely to be available to the mother

Module 5 Infant Feeding

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- WHO Infant Feeding Consensus statement is found in Appendix 5-B.

Source: WHO HIV and Infant Feeding Technical Consultation Held on Behalf of the Interagency Task Team (IATT) on Prevention of HIV Infections in Pregnant Women, Mothers and their Infants; Geneva, October 25-27, 2006 (Consensus Statement).

Slide 7

Infant Feeding—WHO Consensus Statement 2006 (2)

- Recommend exclusive breastfeeding for HIV infected women for the first 6 months UNLESS replacement feeding is:
 - Acceptable
 - Feasible
 - Affordable
 - Sustainable
 - Safe

Module 5 Infant Feeding

Slide 8

Infant Feeding—WHO Consensus Statement 2006 (3)

- If replacement feeding is acceptable, feasible, affordable, sustainable and safe, it is recommended that ALL breastfeeding be avoided.

Module 5 Infant Feeding

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Breast Milk Substitute: Is It “SAF-AS” Breastfeeding?

- Safe
- Affordable
- Feasible
- Acceptable
- Sustainable

Module 5 Infant Feeding

- **Safe:** Replacement foods are correctly and hygienically stored, prepared, and fed in nutritionally adequate quantities; infants are fed with clean hands using clean utensils, preferably by cup
- **Affordable:** The mother and family, with available community and/or health system support, can pay for the costs of the replacement feeds—including all ingredients, fuel and clean water—without compromising the family's health and nutrition spending
- **Feasible:** The mother (or other family member) has adequate time, knowledge, skills, and other resources to prepare feeds and to feed the infant as well as the support to cope with family, community, and social pressures
- **Acceptable:** The mother perceives no significant barrier(s) to choosing a feeding option for cultural or social reasons or for fear of stigma and discrimination
- **Sustainable:** The mother has access to a continuous and uninterrupted supply of all ingredients and products needed to implement the feeding option safely for as long as the infant needs it

Breast Milk Substitutes: Is It **Safe**?

- Is there a source of potable water?
- Are there supplies for preparing BMS?
- Can supplies be kept clean?
- Does mother know how to prepare formula or breast milk substitute?
- Does mother have alternative milk supply for older children?

Module 5 Infant Feeding

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BMS: Is it *Affordable*?

- Is there a source of income available for buying formula/BMS?
- Is formula/BMS feeding provided to infants of HIV-infected mothers who cannot afford breastmilk substitutes and choose not to breastfeed?

Module 5 Infant Feeding

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- The infant requires about 150ml of milk/kg per day
- Programs may look to NGOs to establish safer infant feeding schemes for women/families who wish to replacement feed but cannot afford the supplies
- Care needs to be taken to assure that milk is used for infant only and not shared with other family members

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BMS: Is it *Feasible*?

- Has mother identified the extra supplies she will need?
- Has mother demonstrated an ability to prepare formula?
- Does mother have the extra time formula preparation will take?
- Is mother able to explain what to do with unfinished feedings?
- Is mother able to demonstrate cup feeding?

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- Information on infant feeding should take place at ANC once mother's positive status is known and she has received counselling.

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BMS: Is it *Acceptable*?

- Has mother considered the family's response to formula feeding the infant?
- Has mother discussed an appropriate "explanation" for her choice?
- Is there support for her to replacement feed?
- Does she have a source of additional information and guidance with feeding challenges which may emerge?

Module 5 Infant Feeding

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- In some communities breastfeeding is so much the norm and expected that if a woman doesn't breastfeed, people suspect that she might be infected with HIV
- It is important to help your client understand that there are many medical reasons why some mothers can't breastfeed
- It doesn't mean that she is HIV-positive

Slide 14

BMS: Is it *Sustainable*?

- Has mother been provided with a supply of formula/breastmilk substitutes on her last antenatal visit or prior to discharge from hospital?
- Has a plan for obtaining formula/BMS been identified (where, when, how)?
- Is there a "back-up" plan if mother is unable to obtain supplies?
- As child grows, is there support and information for changing feeding patterns? (amount, frequency)
- Are all of the previous interventions (SAF-AS) sustainable for 6 months?

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Not SAF-AS? Exclusive BF!

- Teach good positioning and attachment to prevent breast problems
- Review signs and symptoms of breast problems which need attention
- Treat breast problems, pathologies quickly increase risk
- Emphasize safer sex to prevent super-infection while lactating

Module 5 Infant Feeding

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- Teach good positioning and attachment to prevent breast problems – observe mother and baby
- Review signs and symptom of breast problems which need attention (that can increase the risk of HIV-transmission)
 - Mastitis
 - Cracked/bleeding nipples)

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Promoting Exclusive Breastfeeding

To Maximize safe, effective breastfeeding:

- Put baby to breast within ½ hour of birth
- Review circumstances which may indicate an actual or potential feeding problem
- Teach mother ways to minimize HIV transmission in the event of breast infection or cracked nipples
- Emphasize EXCLUSIVE breast feeding!!

Module 5 Infant Feeding

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Exclusive Breastfeeding: Minimize Risk to Baby

- Use only breast milk for the first 6 months
- Prevent breast problems
- Safer sex while breastfeeding
- Seek medical care for any illness

Module 5: Infant Feeding

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- Use only breast milk for the first 6 months
 - No water, tea, or gruel
 - Prevents GI irritation and risk of HIV transmission
 - Wean as soon as feasible
- Prevent breast problems
 - Increased risk of transmission with mastitis, abscesses, and bleeding, cracked nipples
 - If breast problems occur, ensure mother knows how to express and discard her milk from the affected breast
- Safer sex while breastfeeding
 - “Super-infection” with another strain of HIV can increase mother’s viral load and increase risk of HIV transmission to baby

Slide 18

Preparing Baby Formula

- Wash hands
- Use clean water or get water from a well or spring
- Boil water
- Use a clean cup



Module 5: Infant Feeding

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- Instructions for clean water:
 - Cap of bleach to 1 gallon of water where no potable water is available
- Water still needs to be boiled even if potable water

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Preparing Baby Formula (2)

	Mix 2 oz of water with 1 scoop of formula
	Mix 4oz of water with 2 scoops of formula
	Mix 6oz of water with 3 scoops of formula

Module 5: Infant Feeding

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Preparing Baby Formula (3)

Shake container to mix formula

Module 5: Infant Feeding

- Proper formula mixing is VERY important.
- Advise clients NOT to add extra water to conserve powder. This will dilute the formula and babies will not get the nutrients they need
- Do not mix formula with other foods such as cereal as it can irritate the infant's gut.

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How to Give the Baby Formula?

- Should be fed in Semi-reclining position, NOT laying flat
- Start with 1-2 ounces at a feeding during first week on demand
- Increase to 3-4 ounces about 6-8 times per day
- Gradually increase as baby grows
- Should be consuming about 6-8 ounces at each feeding by 3rd or 4th month of age

Module 5: Infant Feeding

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- In the hospital, newborns are usually fed shortly after delivery, then ideally on demand thereafter
- During the first week after birth, babies take 1 or 2 ounces at a time, gradually increasing to 3 or 4 ounces about 6 to 8 times a day by the second week
- Parents should not urge newborns to finish every cup but, rather, allow them to take as much as they want whenever they are hungry
- As infants grow, they drink larger amounts, consuming up to 6 to 8 ounces at a time by the third or fourth month
- The proper position for babies who are cup-feeding is semi-reclining or sitting up
- Babies should not cup-feed lying flat on their backs because milk may flow into the nose or the eustachian tube
- Older infants who are able to hold their own cup should not be put to sleep holding the cup because the continuous exposure to milk or juice can damage their teeth and lead to cavities

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How to Give the Baby Formula? (2)

If the baby does not drink all the milk



**YOU MUST THROW AWAY THE MILK
AFTER 2 HOURS**

- Do **NOT** add cereal, sugar, honey or karo syrup to the formula

Module 5: Infant Feeding

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- Only give the baby fresh milk
- Throw leftover milk away

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Washing the Cup



Module 5: Infant Feeding

- Wash cup with soap and boil in water
- Turn down on clean surface, cover with clean cloth

- One of the advantages of cup feeding is the need to only wash the cup. There are no bottle nipples to clean

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Baby Formula Preparation

Role Play



Module 5: Infant Feeding

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Infant Feeding Recommendations

- Bahamian Guidelines
- WHO Guidelines
- WHO International Code of Marketing of BM Substitutes
- FAQs

- In the Bahamas, HIV+ women are advised not to breastfeed.

Module 5: Infant Feeding



Handout 5.1

The Baby-Friendly Hospital Initiative

Ten steps to successful breastfeeding

Step 1: Have a written breastfeeding policy that is routinely communicated to all health care staff.

Why have a policy?

- It requires a course of action and provides guidance.
- It helps establish consistent care for mothers and babies.

How should it be presented?

- It should be written in the most commonly used language.
- It should be available to all staff caring for mothers and babies.
- It should be displayed in areas where mothers and babies are cared for.

Step 2: Train all health care staff in the skills necessary to implement this policy.

Areas of knowledge to emphasize:

- Explain the advantages of breastfeeding.
- Explain the risks of artificial or mixed feeding.
- Explain the mechanisms of lactation and suckling.
- Show how to help mothers initiate and sustain breastfeeding.
- Demonstrate how to breastfeed.
- Explain how to resolve breastfeeding difficulties.
- Describe hospital breastfeeding policies and practices.

Step 3: Inform all pregnant women about the benefits and management of breastfeeding.

What should prenatal education include?

- It should emphasize the importance of exclusive breastfeeding.
- It should explain the risks of artificial feeding and use of bottles and pacifiers, soothers, teats, nipples.
- It should **not** include group education on formula preparation.

Step 4: Help mothers initiate breastfeeding within half an hour of birth.

Why should we initiate early feeding for the newborn?

- It increases the overall duration of breastfeeding.
- It allows skin-to-skin contact for warmth and bonding of the baby with the mother.
- It provides colostrum for the baby's first immunization.
- It takes advantage of the first hour of alertness.
- The baby learns to suckle more effectively.

The Baby-Friendly Hospital Initiative *(continued)*

Step 5: Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.

Supply and demand

- Milk removal stimulates increased production. The more a child breastfeeds, the more milk is produced.
- The amount of breastmilk removed at each feed determines the rate at which milk will be produced in the next few hours.
- Milk removal must be continued during separation to maintain supply.

Step 6: Give newborn infants no food or drink other than breastmilk unless medically indicated.

What is the impact of giving the infant other foods and liquids?

- It decreases the frequency or efficiency of suckling.
- It decreases the amount of milk removed from the breast.
- It delays milk production or reduces the milk supply from the breast.
- Some infants have difficulty attaching to the breast if they receive formula by bottle.

Medically indicated exceptions for breastfeeding are instances in which the infant may require other fluids or food in addition to, or in place of, breastmilk. This includes when a mother is HIV-positive and decides not to breastfeed. The feeding programme of these babies should be determined by qualified professionals on an individual basis.

Step 7: Practice rooming in – that is, allow mothers and infants to remain together 24 hours a day. This allows unlimited contact between mother and baby.

Why should babies room in?

- It reduces costs.
- It requires minimum equipment.
- It requires no additional personnel.
- It reduces infection.
- It helps establish and maintain breastfeeding.
- It facilitates the bonding process.

Step 8: Encourage breastfeeding on demand.

What is breastfeeding on-demand?

- Breastfeeding on-demand means breastfeeding whenever the baby wants, with no restrictions on the length or frequency of breastfeeds.

Why on-demand breastfeeding?

- It minimizes weight loss in the first few days of life.
- Breastmilk flow is established sooner.
- The volume of milk intake by day 3 is larger.
- It lowers the incidence of jaundice in the newborn.

The Baby-Friendly Hospital Initiative *(continued)*

Step 9: Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants

Step 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Why is breastfeeding support important?

- The key to best breastfeeding practices is continued day-to-day support for the breastfeeding mother within her home and community.

What do we mean by breastfeeding support? Examples:

- Early postnatal or clinical check-up
- Home visits by community health workers
- Telephone calls
- Peer counselling programmes
- Mother support groups—help set up new groups and establish a working relationship with existing groups
- Family support systems

Frequently Asked Questions about the integration of PMTCT into the Baby Friendly Hospital Initiative

Does the hospital breastfeeding policy need to change?

Hospital policies do not need to change although additional points can be added:

- It is important that pregnant women are tested for HIV so that they can make informed decisions about infant-feeding.
- Mothers infected with HIV will be supported in their infant-feeding decision.
- Most women are not HIV-infected and breastfeeding should continue to be promoted protected and supported for these women.
- It will remain important to ensure that the hospital does not receive free supplies of formula from manufacturers, give mothers free samples, or allow any promotion of formula, even if some mothers are giving replacement feeds.

Do health care workers need additional training in how to assist women who are HIV-infected to decide how to feed their infant?

- HCWs will need additional training in breastfeeding counselling, to support all women who choose that option.
- HCW should also receive training about how HIV is transmitted and the risks associated with breastfeeding and not breastfeeding.
- Stigmatising and discriminatory attitudes of HCW toward PLWHA may need to be addressed with an emphasis on the mother as the ultimate infant-feeding decision-maker.
- HCWs will need information on the safe preparation and use of replacement feeds and the skill to teach this to mothers and other caregivers.

The Baby-Friendly Hospital Initiative *(continued)*

Should mothers who are HIV-positive have early skin-to-skin contact if they are not breastfeeding?

- Yes, cuddling the baby cannot transmit HIV.
- Mothers who have chosen not to breastfeed still need encouragement to hold, cuddle and have physical contact with their babies from birth onwards. This helps a mother to feel close and affectionate toward her baby.
- Mothers who are HIV-positive and who have decided to breastfeed should be assisted to put the baby to the breast soon as possible after delivery.

Regarding step five, should health care workers show HIV-infected mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants?

- First ascertain the mother's infant-feeding choice. If the mother has decided to breastfeed, she needs assistance and support to establish breastfeeding, to use good breastfeeding techniques in order to prevent nipple damage and mastitis, and to breastfeed exclusively.
- Mothers who choose not to breastfeed need to discuss what alternative milk they will use and how they will prepare it and give it to the baby. Instruction should be given privately and confidentially to avoid stigmatising the mother.
- Mothers who have decided not to breastfeed may need help with breast care while waiting for their milk production to cease.

How does step six, “give newborn infants no food or drink other than breastmilk, unless medically indicated” apply to a mother who is HIV-positive?

- When a mother has been counselled, tested and found to be HIV-infected and has decided not to breastfeed, it is medically indicated to give the infant replacement feedings in place of breastmilk
- If a mother chooses to breastfeed she needs help to do so exclusively.

How does step seven, rooming-in, apply to an HIV-positive mother?

- All healthy babies benefit from being near their mother. Mothers who are HIV-infected do not need to be separated from their babies.
- Mothers who are not breastfeeding need to have plenty of physical contact with their infant, which reinforces the bond between mother and child.
- Mothers who are not breastfeeding should practice preparing replacement feeds and cup feeding while their infant is in hospital. The HCW should assist the mother in the consistent and accurate preparation of feeds.

The Baby-Friendly Hospital Initiative *(continued)*

How does step eight, “encourage breastfeeding on demand” apply to HIV-infected women?

- All babies differ in the timing and amount of feedings. Mothers should be taught to recognize the visual and audible clues that indicate the infant is hungry and to feed on the infant's demand.

Does step nine “give infants no artificial teats or pacifiers” still apply?

- Teats, bottles and pacifiers (dummies) can carry infection and are not needed, even for the non-breastfeeding infant.
- Cup feeding is recommended for infants who are replacement fed.
- If an infant receives a nipple other than its mothers, a condition known as nipple confusion can result. The infant uses an entirely different technique to suck on an artificial nipple than for breastfeeding
- For soothing, infants can be encouraged to suck on the mother's clean finger, if not breastfeeding.

Step ten, “foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital or clinic”, how does this step apply?

- Many mothers need support regardless of their feeding method. Mothers with HIV who are not breastfeeding in a community where most mothers breastfeed may need extra support from a group concerned particularly with HIV.

Adapted from: Ministry of Health, The United Republic of Tanzania. 2004. PMTCT Manual.



Handout 5.2

Recommendations Regarding Infant Feeding: Caribbean Regional Guidelines

The following specific interventions are recommended to minimize the risk of HIV transmission via breastfeeding:

- Mothers should be counselled about the risks of HIV transmission through breastfeeding and the benefits associated with breastmilk substitutes.
- Mothers should be counselled regarding the increased risk of HIV transmission if breastfeeding and breastmilk substitutes are combined.
- Replacement feeding should be provided to infants of HIV-infected mothers who cannot afford breastmilk substitutes and choose not to breastfeed. The infant requires about 150ml of milk/kg per day.
- A source of potable water should be ensured.
- The mother should be provided with a supply of breastmilk substitutes on her last antenatal visit or prior to discharge from hospital.
- Infants should be referred to a nutrition clinic for follow-up of growth.
- The mother should be taught hygienic preparation of replacement feeds prior to and after delivery.
- The mother should be taught how to cup-feed her infant.
- If the mother chooses to breastfeed, she should be taught good breastfeeding techniques to help prevent and treat breast problems that can increase the risk of HIV-transmission.

Breastfeeding women with indications for ART for their own health should receive and continue standard ART during and after lactation. Thus, if the mother was already on HAART at the time she became pregnant, or if she initiated HAART during pregnancy for her own health needs, then HAART should be continued.

Where feasible and acceptable alternatives exist, efforts should be made to discourage HIV-infected mothers from breastfeeding in order to interrupt this potential route of HIV transmission to the infant. However, for many women in resource-limited countries, breastmilk alternatives are not acceptable, feasible, affordable, sustainable, or safe.

If an infant is breastfed, exclusive breastfeeding is recommended, with weaning as soon as feasible (e.g., at age **three to six months**). Exclusive breastfeeding means giving the infant only breastmilk and no water, other liquids, or solid foods except prescribed medicines.

While the use of expressed and heat-treated breastmilk has been suggested, data are limited on the efficacy of heat treatment in reducing HIV in breastmilk and the effect of such heat treatment on constituents of breastmilk (including immune constituents) that are important for the infant's health. Thus, it is recommended that this method of exclusive breastfeeding (e.g., with heat-treated breastmilk) be studied under controlled circumstances until more data are available.



Handout 5.3

Infant Feeding Guidelines (WHO)

WHO Recommendations for Infant Feeding by HIV-infected Mothers

The current WHO recommendations on infant feeding by HIV-infected mothers (2003):

- **When replacement feeding is acceptable, feasible, affordable, sustainable and safe, (please see “Definitions” below) avoidance of all breastfeeding by HIV-infected mothers is recommended.** Otherwise, exclusive breastfeeding is recommended during the first months of life.
- Programmes should make replacement feeding safer for HIV-infected mothers and families.
- To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible or between 4 to 6 months of age, taking into account local circumstances, the individual woman’s situation and the risks of replacement feeding (including infections other than HIV and malnutrition).
- Rapid weaning is suggested recognising that this is difficult and that the mother and infant will require support
- When HIV-infected mothers choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance and support for at least the first 2 years of the child’s life to ensure adequate replacement feeding.

Breast milk remains the most nutritious food for infants, but in view of HIV/AIDS, modified infant feeding is an intervention to reduce mother-to-child transmission of HIV.

WHO infant feeding recommendations reflect a commitment to improve the nutritional status, growth and development, health and survival of infants and young children. In summary:

- Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health.
- Thereafter, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond.

Infant feeding in the context of HIV infection: Most PMTCT policy recommends that safer infant feeding options be discussed with pregnant women living with HIV. Counselling on infant feeding provides necessary information regarding feeding options so that the mother can make the best choice for herself and her family. This is an ongoing process, which begins in the antepartum period.

Definitions

Acceptable: The mother perceives no significant barrier(s) to choosing a feeding option for cultural or social reasons or for fear of stigma and discrimination.

Feasible: The mother (or other family member) has adequate time, knowledge, skills, and other resources to prepare feeds and to feed the infant as well as the support to cope with family, community, and social pressures.

Affordable: The mother and family, with available community and/or health system support, can pay for the costs of the replacement feeds—including all ingredients, fuel and clean water—without compromising the family's health and nutrition spending.

Sustainable: The mother has access to a continuous and uninterrupted supply of all ingredients and products needed to implement the feeding option safely for as long as the infant needs it.

Safe: Replacement foods are correctly and hygienically stored, prepared, and fed in nutritionally adequate quantities; infants are fed with clean hands using clean utensils, preferably by cups.

Guidance support for the implementation of these feeding recommendations:

- All HIV-infected mothers should receive feeding counselling, which includes provision of general information about the risks and benefits of various infant feeding options, and specific guidance in selecting the option most likely to be suitable for their situation. Whatever a mother decides, she should be supported in her choice.
- Assessments should be conducted locally to identify the range of feeding options that are acceptable, feasible, affordable, sustainable and safe (See Glossary for definitions of these terms) in a particular context.
- Information and education on mother-to-child transmission of HIV should be urgently directed to the general public, affected communities and families.
- Adequate numbers of people who can counsel HIV-infected women on infant feeding should be trained, deployed, supervised and supported. Such support should include updated training as new information and recommendations emerge.

WHO recommendations for infant feeding for HIV-negative mothers and mothers of unknown HIV status

Exclusive breastfeeding for six months is recommended for all HIV-negative mothers and mothers of unknown HIV status because of the health, nutrition, and psychosocial benefits for mothers and infants. These women should also be given support to help them breastfeed according to the recommendations, assist with the introduction of complementary/replacement foods after 6 months and be informed of the risk of becoming HIV-infected late in pregnancy or during breastfeeding. Women of unknown HIV status should be encouraged to test for HIV. Where possible, women should be assessed individually and ongoing support developed based on their personal needs and level of understanding.



Handout 5.4

International Code of Marketing of Breastmilk Substitutes

Summary of International Code

The International Code of Marketing of Breastmilk Substitutes helps provide safe and adequate nutrition for children by:

- Protecting and promoting breastfeeding.
- Supporting proper and informed use of breastmilk substitutes when necessary.
- Promoting acceptable marketing and distributing practices and controlling marketing practices so they do not inappropriately promote products for artificial feeding.

The code applies to artificial milk for babies and to other products used to feed babies, especially when they are meant for use in a feeding bottle. The code also applies to feeding bottles and teats.

Provisions of the Code

The Code forbids virtually all forms of advertisements and marketing methods for breast milk substitutes, especially against advertisements claiming health benefits from the substitutes. The Code also outlines the ways in which companies can communicate with mothers and health workers about their baby milk products.

- The Code forbids direct contacts between commercial representatives and medical personnel or mothers or pregnant women.
- Baby food companies may not distribute free samples of substitute milk in hospitals and other places providing public health services.
- Advertisements for baby foods must not target infants younger than six months or distribution of dummies or bottles for babies
- Manufacturers of breast milk substitutes may not distribute promotional gifts to health workers.
- Images of mothers and children on the packets or labels are forbidden.
- The information required by the Code to be printed on labels must be printed in simple and easy to understand terms in the language of the area where the product is sold. Certain wordings, such as 'motherly', cannot be used. The labels must state that breastfeeding is the best way of feeding babies and that a substitute should only be used after consultation with health professionals.
- All products should be of a high quality and take account of the climatic and storage conditions of the country where they are used.

Adapted from the Kenya National PMTCT Training Curriculum, 2005.

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Counselling About Safer Infant Feeding: The 5 “A’s”

1. Assess
2. Advise
3. Agree
4. Assist
5. Arrange

Adapted from WHO IMAI participants manual/Assessment to therapy

Module 5: Infant Feeding

1. **Assess:** “Tell me what you are thinking about feeding your baby?”
2. **Advise:** “I have some information about HIV transmission with breastfeeding. May I share that with you?”
3. **Agree:** “Replacement feeding can be as SAF-AS breastfeeding for this family.”
4. **Assist:** “Are there any potential barriers to implementing formula feeding/BMS?”
5. **Arrange:** “Today I will teach you how to safely prepare formula for your baby. On Thursday, you will go to the NGO to pick up your first month’s supply of formula....”

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Infant-Feeding Counselling for Women Who Are HIV-Positive



Module 5: Infant Feeding

Source: “Module 4: Infant Feeding in the Context of HIV Infection,” PMTCT Generic Training Package, WHO/CDC, FXB – November 2004

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Infant-Feeding Counselling and Support

Infant-Feeding Counselling Steps

- STEP 1: Explain risks of MTCT
- STEP 2: Discuss the national recommendations promoting replacement feeding when it is Safe-Acceptable-Feasible-Affordable-Sustainable (SAFAS)

Adapted from WHO generic PMTCT curriculum

Module 5: Infant Feeding

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Infant-Feeding Counselling and Support (2)

- STEP 3: Explore mother's home and family situation
- STEP 4: Help mother choose appropriate option
 - Gently advocate for replacement feeding if determined that it is S-A-F-A-S

Module 5 Infant Feeding

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Infant-Feeding Counselling and Support (3)

- STEP 5: Demonstrate how to practice chosen feeding option
 - Replacement feeding
 - Exclusive breastfeeding
 - Other breastmilk options
- STEP 6: Provide follow-up counselling and support

Module 5 Infant Feeding

- Make sure to provide literature or a take-home flyer
- Mothers should be encouraged to hold baby up right to minimize the risk of vomiting. This would encourage burping and both mother and child will benefit from the close contact.

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Infant Feeding Counselling Visits

- At least one during the antenatal period
- Immediately after birth
- Within 7 days of birth to monitor post partum and infant-feeding progress
- Monthly follow-up sessions
- Additional sessions may be required during high risk time periods

Module 5 Infant Feeding

- Looking at the baby is the easiest way to assess growth
 - If not growing, discern if feeding correctly – maybe not mixing correctly or diluting to save money

Role Of The Healthcare Provider

- Validate
 - Choice mother/family makes is the best choice for them
 - Mother/family has a chance to "practice" explanation of her feeding choice before discharge

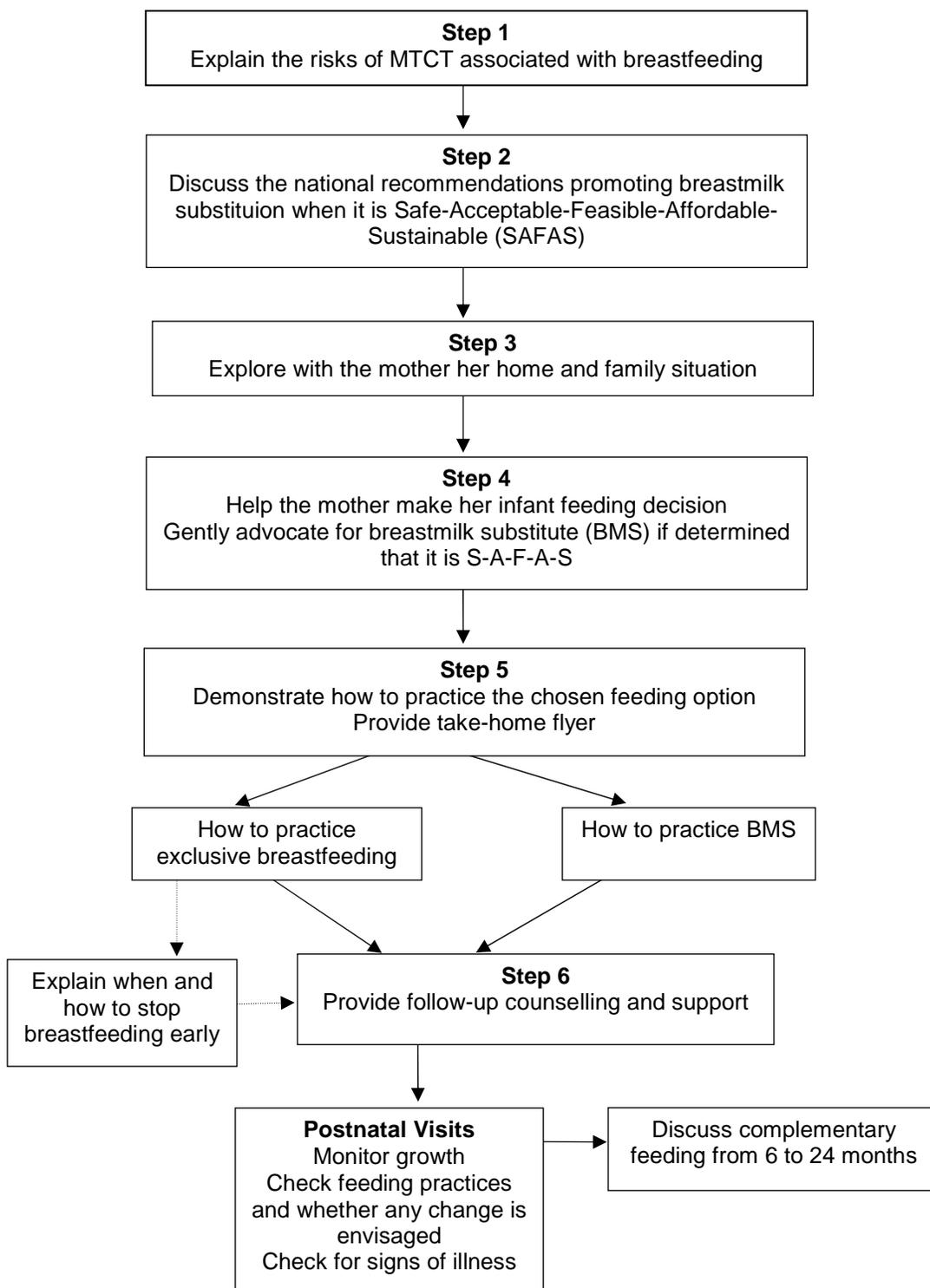


Module 5: Infant Feeding



Handout 5.5

Infant-Feeding Counselling for Women with HIV-infection



Role Plays: Bernice and Albert

Module 5 (Infant Feeding)



Handout 5.6

Module 2: Introduction / HIV and Pregnancy

Bernice is 25 years old and a secretary for a medical office. She meets a man, Albert, whom she likes very much. Albert is handsome, funny and five years older. He has a job which takes him travelling to the family islands sometimes. Albert is unaware of his HIV status. Albert and Bernice become a couple and are having unprotected sex. A month after the relationship starts Bernice misses work due to the flu. She has fever, swollen glands and complains of joint pain. Since Bernice works in a medical office, she went for an HIV test which was negative.

Bernice suspects she is pregnant a year after meeting Albert. She shows up at the antenatal clinic at 10 weeks gestation and receives group counselling and testing on HIV and safe motherhood and consents to a test. At the subsequent appointment, she is informed of her HIV positive status, post-test counselled and encouraged to bring her partner in for testing. Bernice is shocked because she feels fine. At her 3rd visit, Bernice is 15 weeks gestation and comes in alone. She is provided with information and provided with ANC care.

Module 4: Adherence to Care and Treatment

Bernice returns to the ANC clinic. She has not told anyone about her HIV status, as she is afraid of what will happen to her job and in her family. She is committed to making sure the baby is healthy. Bernice will be offered Duovir and Nevirapine for PMTCT per the national guidelines. As she is now 28 weeks pregnant, it is time for her to start on antiretrovirals.

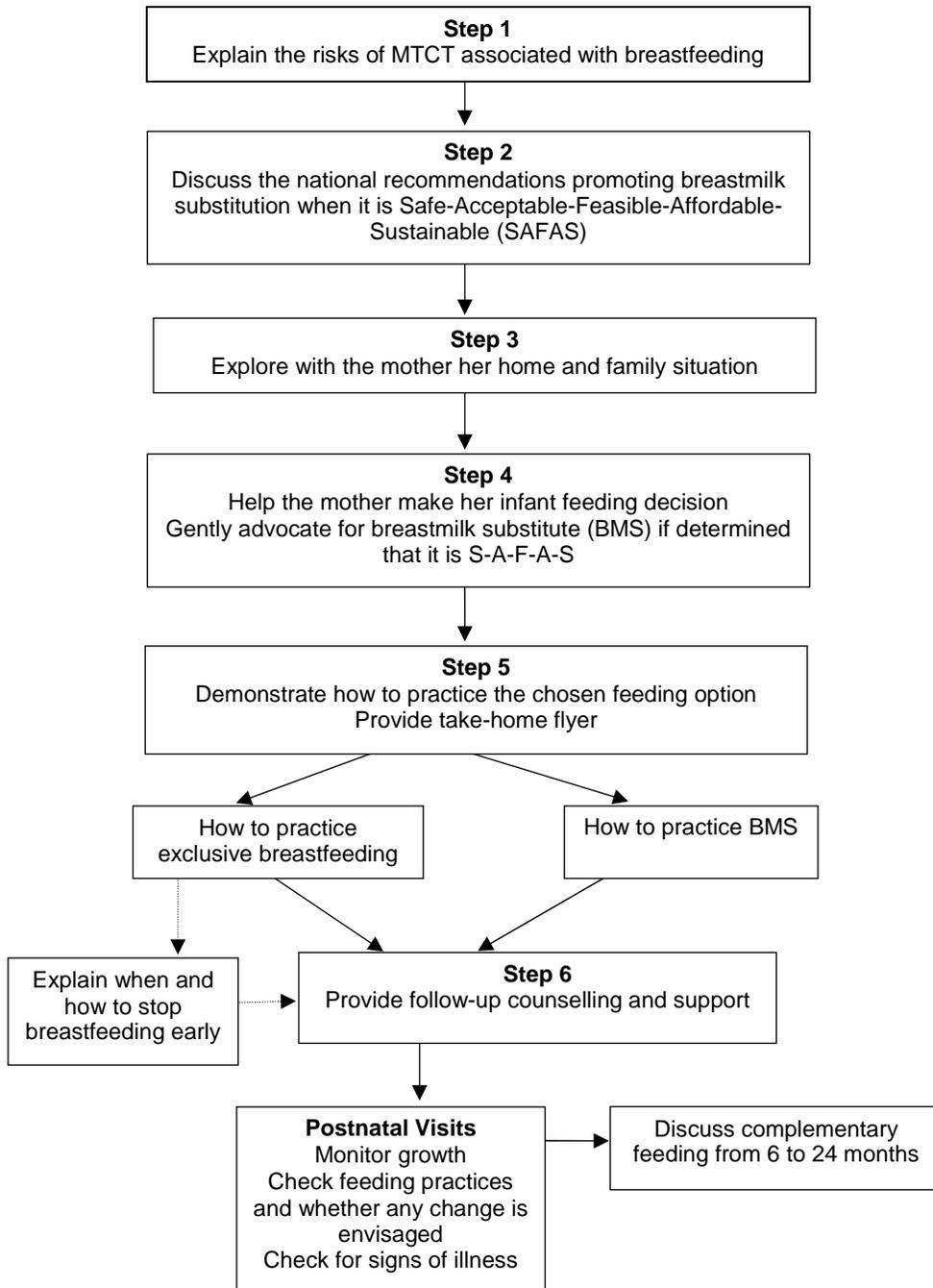
Module 5: Infant Feeding Role Plays	
Introduction: Bernice has arrived for her third ANC visit. She is now 32 weeks and has been taking Duovir and Nevirapine for 4 weeks with few complaints other than an occasional headache. Her 2 previous visits focused on diagnosis, initiating therapy, and sharing information regarding pregnancy and HIV. Bernice is aware of the recommendation not to breast feed, but this is your first opportunity to determine whether that is possible for Bernice. Role play the process for helping Bernice decide on an infant feeding choice.	
Instructions	<ul style="list-style-type: none"> ▪ Break into groups of 3 to carry out the role play ▪ One person will act as the HCW, one will be Bernice, and the third person will act as facilitator, assisting the HCW with possible suggestions as the role play is acted out, and facilitating a de-brief after the role play ▪ Refer to Handout 5.7 for the flow chart, and Handout 5.8 as a guide for conducting infant feeding counselling during an antenatal session ▪ You can refer to other Handouts in your Handbook for additional information about safer infant feeding (Handouts include feeding with

Module 5: Infant Feeding Role Plays	
	a cup, counsellor checklists, advantages and disadvantages of breast feeding and formula feeding, HIV and family living)
HCW	<ul style="list-style-type: none"> ▪ Bernice has arrived for her third ANC visit ▪ She is now 32 weeks and has been taking ARVs for 4 weeks with few complaints other than an occasional headache ▪ Her 2 previous visits focused on diagnosis, initiating therapy, and sharing information regarding pregnancy and HIV ▪ Bernice is aware of the recommendation not to breast feed, but this is your first opportunity to determine whether that is possible for Bernice ▪ Using the 6 step flow sheet as a guide (Handout 5.7), role play the process for helping Bernice decide on an infant feeding choice
Bernice	<ul style="list-style-type: none"> ▪ You and Albert tested HIV positive during this pregnancy, and have told no one about your status ▪ You are living with Albert's parents (Lucia and Peter), and have been able to take your AZT during this pregnancy by putting the pills into the multivitamin bottle ▪ You are concerned that Albert's parents might be suspicious if you decide not to breastfeed
Facilitator	<ul style="list-style-type: none"> ▪ Pay attention to what the HCW is saying and if she is having difficulty, assist with information ▪ After they have completed the role play, debrief with Bernice and HCW: <ul style="list-style-type: none"> ▪ What went well? ▪ What felt good for Bernice? For the HCW? ▪ What was challenging for each of them?



Handout 5.7

Infant-Feeding Counselling for Women with HIV-infection





Handout 5.8

INFANT FEEDING COUNSELLING FOR HIV-INFECTED WOMEN: ANTENATAL SESSIONS

Counsellor checklist

During first antenatal infant feeding counselling session

Assess: Risks of MTCT

- “How were you planning to feed your baby?”
- “What is your understanding of how a baby can get HIV from its mother?”
- “How do you think you might react if your baby does have HIV infection?” “How will your partner react?”
- “Which other members of your family may be involved in the infant feeding decision?”
- “What experiences do you have with this feeding method (previous children or familiar with experiences of other women)?”

Advise: Explain advantages and disadvantages of different feeding options

- Summarize national guidance for HIV-positive women promoting BMS
- Summarize information on MTC HIV transmission through BF.

Explore home and family situation. Is BMS “SAF-AS”?

- Determine if home and family situation can support BMS that is “S-A-F-A-S”
- Assist her to choose the most feasible option
- Review how to make her choice as safe as possible

Assist mother to choose her best feeding option

- If formula/BMS is the best choice, say, “Tell me how you will prepare each feed step-by-step.” “Which of the necessary supplies do you have?” “How will you wash the equipment?”

	<ul style="list-style-type: none"> • If BF is the best choice, ask... “For how long do you expect to breastfeed?” “When do you expect to add other foods/liquids?” “Show me how you expect to attach your baby to the breast.” <p>Arrange for demonstration and practice for chosen feeding</p> <ul style="list-style-type: none"> • Develop a plan for assuring that her choice is able to be carried out. • Ask, “What questions do you have?”
<p>Follow-up Antenatal sessions</p>	<ul style="list-style-type: none"> • Discuss any of the above areas that were not fully addressed in the first session • Review the plan to assure she has adequate support for implementing her feeding choice • Demonstrate how to implement the chosen feeding method. If appropriate, provide her with written instructions • Have mother do return demonstration • “What additional questions do you have?”



Handout 5.9

What Families Need to Know About Feeding Baby with A Cup

What you do...	Why you do it...
<p>1. Get Ready</p> <ul style="list-style-type: none"> • Wash hands with soap and water • Hold the baby close and comfortable • Pour small amount of prepared milk/formula in baby's cup 	<ul style="list-style-type: none"> • Any form of dirt or germs may give your baby diarrhoea • Close touching fosters bonding • Helps prevent spilling and contamination if baby doesn't finish the whole feeding.
<p>2. Feed the baby</p> <ul style="list-style-type: none"> • Put the cup to baby's lips. Don't tip the cup too much. • Let the baby lap or suck the milk at his/her own rate • Keep the cup to baby's lips until s/he is ready to drink again • Encourage baby to continue feeding as long as possible or until feed is finished. • Hold baby upright to minimize the risk of vomiting 	<ul style="list-style-type: none"> • Too much formula may make the baby choke • Every baby is different and may take a little more or less at different feedings • To avoid choking, do not force feed the baby • Encourages burping and close contact between mother and child
<p>3. Clean the utensils</p> <ul style="list-style-type: none"> • Wash used utensils with soap and clean water immediately after feeding. • Look to see that there is no milk in the clean utensils. • Kill all germs by boiling utensils for 10 minutes or soaking in household bleach. • Cover utensils and store in a dry place. 	<ul style="list-style-type: none"> • Milk/formula is sweet and germs grow quickly. • Contaminated utensils may make your baby sick. Follow directions for disinfecting bleach.
<p>Be prepared</p> <ol style="list-style-type: none"> 1. Use a reliable family planning method to prevent getting pregnant too soon 2. Know how to give replacement fluids if baby develops diarrhea 3. If you have a problem, consult your nurse/counsellor for help! 	



Handout 5.10

INFANT FEEDING COUNSELLING FOR HIV-INFECTED WOMEN: POSTNATAL SESSIONS

Counsellor checklist

If the woman will use Replacement feeds

- Summarize instruction on adequate breastmilk substitution
- Identify whether she has access to and can afford to buy a reliable supply of breastmilk substitute (BMS), the necessary utensils to prepare and serve the feeds, and supplies to clean them (soap for washing), fuel for boiling water
- Assess her understanding of the steps in hygienically preparing the BMS, including the need to boil water, the importance of measuring all ingredients carefully and cleaning equipment between preparations
- Observe her feeding infant (with a cup)
- Review principles of safe milk storage (length of time, temperature, conditions)
- Support her in developing strategies to resist pressure for mixed feeding
- Review how much milk the infant should be fed
- Provide information on:
 - ❑ Family planning and safer sex
 - ❑ The prevention, treatment and dietary management of diarrhoea and other illnesses that may interfere with feeding
 - ❑ The changes in nutritional needs as the infant gets older and the accompanying changes in frequency of feeding
 - ❑ Complementary foods and feeding practices after 6 months
- Inform her of the need for additional nutrients, such as multivitamin supplements
- Unless contraindicated, an iron fortified formula is desirable. It should be emphasized that iron does not cause constipation.

	<ul style="list-style-type: none"> ▪ Assist with developing strategies to respond to family/friends about not breastfeeding; if necessary support her in creating an excuse
<p>If the woman will breastfeed:</p>	<ul style="list-style-type: none"> ▪ Demonstrate techniques for proper infant positioning and attachment to the breast ▪ Encourage on-demand breastfeeding and prepare the mother for the expected frequency of breastfeeding ▪ Suggest strategies for increasing milk supply and for maintaining exclusive breastfeeding ▪ Support her in developing strategies for resisting pressure for mixed feeding (breastfeeding with other liquids or foods such as herbal teas, water, porridge, etc) ▪ Provide information on: <ul style="list-style-type: none"> ❑ The prevention, identification and management of cracked nipples, mastitis, and other breast conditions ❑ The additional nutritional requirements for breastfeeding women ❑ Family planning and safer sex ❑ The prevention, treatment and dietary management of diarrhoea and other illnesses that may interfere with feeding ❑ The changes in nutritional needs as the infant gets older and the accompanying changes in frequency of breastfeeding ❑ Complementary foods and feeding practices after 6 months ▪ Offer strategies to stop breastfeeding early and to provide the baby with nutritionally adequate weaning foods
<p>All postnatal infant feeding discussions should include</p>	<ul style="list-style-type: none"> ▪ How the mother thinks the infant feeding is progressing ▪ Identification and solutions for any concerns or problems she is having with her feeding choice ▪ The reactions of family/friends to her infant feeding choice ▪ Assessment of the safety of infant feeding practices; review steps to make choice safer

ADVANTAGES AND DISADVANTAGES OF BREASTFEEDING

Advantages

- The perfect food for babies: it provides all the nutrition and water they need
- It is always available and does not need any special preparation
- Protects infants from diseases, particularly diarrhoea and pneumonia
- Exclusive breastfeeding may also reduce the risk of HIV transmission (in comparison to mixing breastfeeding with other foods or liquids, which may damage the lining of the infant intestine and possibly increasing the risk of HIV infection)
- Reduces mother's risk of postpartum haemorrhage, breast and ovarian cancers
- Delays ovulation, reducing the likelihood of pregnancy
- People may be less likely to become suspicious about this feeding practice

Disadvantages

- Infant continues to be exposed to HIV as long as the HIV-infected mother breastfeeds
- Exclusive breastfeeding is not the norm in most cultures; family, friends, and neighbours may pressure mothers to give water, other liquids, or foods to the baby
- Feeding on demand: at least 8–10 times per day, may be difficult for women who work outside of the home
- Mothers require an additional 500–750 kcal/day to support exclusive breastfeeding in the first 6 months

ADVANTAGES AND DISADVANTAGES OF COMMERCIAL INFANT FORMULA

Advantages

- No transmission of HIV
- Has added vitamins
- Has the nutrition that baby needs for first 6 months when used correctly
- May protect mother from demands of breastfeeding and help preserve her health
- May involve other family members in infant feeding and promote bonding

Disadvantages

- May be unacceptable in mother's community
- May inadvertently disclose HIV status
- Expensive
- Time consuming
- Requires access to safe water, supplies, fuel
- Requires training and practice to mix formula correctly
- Risk of diarrhoea or other infections if prepared incorrectly

ADVANTAGES AND DISADVANTAGES OF HOME-PREPARED FORMULA

Advantages

- No transmission of HIV
- May protect mother from demands of breastfeeding
- May involve other family members in infant feeding and promote bonding

Disadvantages

- May be unacceptable in mother's community
- May inadvertently disclose HIV status
- Expensive
- Time consuming
- Requires access to safe water, supplies, fuel
- Requires training and practice to mix formula correctly
- Risk of diarrhoea or other infections if prepared incorrectly
- Baby may be at risk for respiratory infections/conditions
- Baby may have allergies



Handout 5.11

HIV and Family Living: What's Best for You

Feeding Options

Most babies born to women with HIV do not have the virus. However, HIV **can** be passed to the baby while pregnant, during delivery and while breast-feeding.

- When you learn that you have HIV, deciding how to feed your baby can be difficult. No choice is right for everyone!
- Each family must consider what is best for them.
- Whatever you choose, know that you are doing the best you can for your baby.



Replacement Feeding

- No chance of passing HIV to baby
- No breast milk at all
- Commercial or home-prepared formula
- Hygiene is very important

Exclusive Breast-feeding for 6 months

- Reduces the chance you will pass HIV to the baby
- Ensure good position and attachment
- Seek medical care quickly if problems occur
- Practice safer sex while nursing

Stop Breastfeeding Early

Reduces the risk of passing HIV to baby

- Give breastmilk only for a few months
- Immediately switch to replacement feeds
- Practice safer sex while nursing

Important Things to Consider:

Health Effects

- Weigh the benefits of breast-feeding, (nutritious, protective, available, free) with the risk of passing HIV to baby
- **Don't** give other foods or liquids to baby less than 6 months of age while breastfeeding as mixed feeds increases the risk of HIV and other illness

Cost



- Commercial formula is expensive
- Home-prepared cow's milk with sugar and vitamins is less expensive but still costly

Hygiene

- Replacement feeds must be prepared carefully to avoid germs
- Water should be boiled and utensils cleaned with soap and water
- Replacement feeds are safest when prepared right before feeding the baby
- Consider if you have access to clean water, utensils for preparing and feeding baby, stove or cooking fuel to boil water and a place to safely store milk

Time

- Replacement feeding and heat treating breast milk, you need time to: wash your hands, boil water or breast milk, and feed baby with cup, keep cooking utensils clean, and purchase ingredients
- If you work outside the home and take your baby, will you have time to do this? Do you have time and light at night to prepare the feeds? Does someone else care for the baby who can prepare the feeds safely?

Other People's Responses

Many people expect a woman to breastfeed. Consider what you may say to others if you choose not to breastfeed. Will you experience pressure from family or friends to explain or to change your mind and breastfeed?

Does your husband or family know you have HIV? Will they support your decision?

Last, but not Least

Talk to a health worker about your decision! They can

- Help you weigh the risks and benefits of each option
- Teach you to prepare replacement feeds safely
- Teach you ways to breast feed more safely
- Advise you about additional foods necessary for your child's health when your baby is 6 months old
- Whichever feeding option you choose, the health care worker will give you the knowledge and skills to prepare and feed you baby safely



Key Points

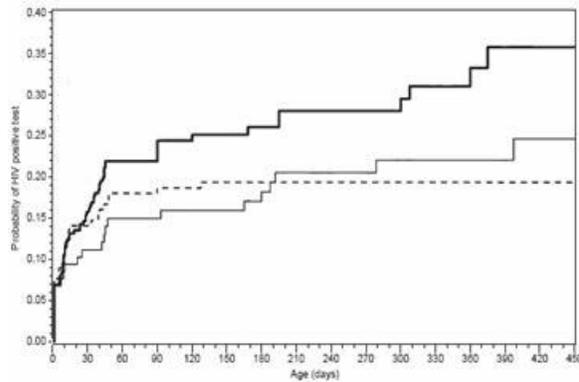
- Breastfeeding poses a significant risk for HIV transmission to infants
- Mothers who are HIV-positive should avoid breastfeeding when breastmilk substitute is Safe, Acceptable, Feasible, Affordable, and Sustainable (S-A-F-A-S)
- Counselling, education, and support are key to establishing and maintaining safer infant-feeding practices

Appendix 5-A

Slide A1

Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa

Anna Coutsooudis^a, Kubendran Pillay^a, Louise Kuhn^b, Elizabeth Spooner^a, Wei-Yann Tsai^c and Hoosen M. Coovadia^a, for the South African Vitamin A Study Group*



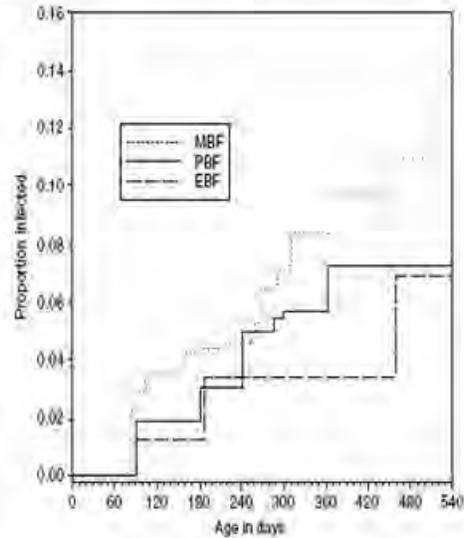
---- no BF
..... EBF
———— MBF

1. Cumulative probability of detecting HIV infection over time among 157 children who were never breastfed (----), 118 unive breastfeeders (.....), and 276 mixed breastfeeders (————).

Exclusive Breastfeeding

ZVITAMBO Study, AIDS 2005;19:699-708

- 2,060 infants LPT (6 wk to 18 mo)
- Practices: EBF 7%. PBF 24%. MBF 69%
- Mixed BF 2.6-fold increased HIV-1 risk
- 2/3 LPT >6 mo



Early exclusive breastfeeding reduces the risk of postnatal HIV-1 transmission and increases HIV-free survival

Peter J. Iloff^a, Ellen G. Piwoz^b, Naume V. Tavengwa^a, Clare D. Zunguza^c, Edmore T. Marinda^a, Kusum J. Nathoo^d, Lawrence H. Moulton^e, Brian J. Ward^f, the ZVITAMBO study group and Jean H. Humphrey^{a,e}

	EBF	PBF	MBF
	156	490	1,414
6 months	1.3%	3.4%	6.9%
12 months	3.0%	7.3%	8.6%
18 months	4.4%	8.4%	13.9%

Appendix 5-B

WHO HIV and Infant Feeding Technical Consultation Held on behalf of the Inter-agency Task Team (IATT) on Prevention of HIV Infections in Pregnant Women, Mothers and their Infants Geneva, October 25-27, 2006

CONSENSUS STATEMENT

Researchers, programme implementers, infant feeding experts and representatives of the IATT,¹ UN agencies, the WHO Regional Office for Africa and six WHO headquarters departments² gathered in Geneva in order to review the substantial body of new evidence and experience regarding HIV and infant feeding that has been accumulating since a previous technical consultation in October 2000³, and since the Glion⁴ and Abuja⁵ calls to action on the prevention of mother to child transmission of HIV. The aim was to establish whether it is possible to clarify and refine the existing UN guidance⁶, which was based on the recommendations from the previous meeting.

After three days of technical and programmatic presentations and intensive discussion, the group endorsed the general principles underpinning the October 2000 recommendations and, based on the new evidence and experience presented, reached consensus regarding a range of issues and their implications. This statement presents a preliminary summary pending publication of the full report.

New evidence on HIV transmission through breastfeeding:

- Exclusive breastfeeding for up to six months was associated with a three to four fold decreased risk of transmission of HIV compared to non-exclusive breastfeeding⁷ in three large cohort studies conducted in Côte d'Ivoire, South Africa and Zimbabwe.

¹Academy for Educational Development, Catholic Medical Mission Board, Columbia University, Elizabeth Glaser Pediatric AIDS Foundation, UNAIDS, UNFPA, UNICEF, US Agency for International Development and the US Centers for Disease Control.

²Child and Adolescent Health and Development, Nutrition for Health and Development, HIV/AIDS, Reproductive Health Research, Making Pregnancy Safer and Food Safety, Zoonoses and Foodborne Diseases.

³WHO. New data on the prevention of mother-to-child transmission of HIV and their policy implications. Conclusions and recommendations. WHO technical consultation on behalf of the UNFPA/UNICEF/WHO/UNAIDS Inter-agency Task Team on mother-to-child transmission of HIV. Geneva, 11-13 October 2000. Geneva, WHO 2001, WHO/RHR/01 .28.

⁴UNFPA and WHO. The Glion Call to Action on Family Planning and HIV/AIDS in Women and Children, 3-5 May 2004.

⁵Call to Action: Towards an HIV-free and AIDS-free Generation. Prevention of mother-to-child transmission high-level global partners forum, Abuja, Nigeria, December 3, 2005.

⁶For current guidance, please see documents and tools at http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm; and Guidelines for the Safe Preparation, Storage and Handling of Powdered Infant Formula.

⁷In Côte d'Ivoire, non-exclusive breastfeeding included any other liquids or foods; in South Africa, it included non-human milks or other liquids, with or without solids; in Zimbabwe, it included feeding non-breast milk foods and liquids.

- Low maternal CD4+ count, high viral load in breast milk and plasma, maternal seroconversion during breastfeeding and breastfeeding duration were confirmed as important risk factors for postnatal HIV transmission and child mortality.
- There are indications that maternal HAART for treatment-eligible women may reduce postnatal HIV transmission, based on programme data from Botswana, Mozambique and Uganda; follow-up trial data on the safety and efficacy of this approach, and on infant prophylaxis trials, are awaited.

New evidence on morbidity and mortality

- In settings where antiretroviral prophylaxis and free infant formula were provided, the combined risk of HIV infection and death by 18 months of age was similar in infants who were replacement fed from birth and infants breastfed for 3 to 6 months (Botswana and Côte d'Ivoire).
- Early cessation of breastfeeding (before 6 months) was associated with an increased risk of infant morbidity (especially diarrhoea) and mortality in HIV-exposed children⁸ in completed (Malawi) and ongoing studies (Kenya, Uganda and Zambia).
- Early breastfeeding cessation at 4 months was associated with reduced HIV transmission but also with increased child mortality from 4 to 24 months in preliminary data presented from a randomized trial in Zambia.
- Breastfeeding of HIV-infected infants beyond 6 months was associated with improved survival compared to stopping breastfeeding in preliminary data presented from Botswana and Zambia.

Improving infant feeding practices

- Improved adherence and longer duration of exclusive breastfeeding up to 6 months were achieved in HIV-infected and HIV-uninfected mothers when they were provided with consistent messages and frequent, high quality counselling in South Africa, Zambia and Zimbabwe.

New programme data

- UN HIV and infant feeding guidance is available and increasingly used in policy-making in countries, but challenges in implementation remain.
- Coverage and quality of the full range⁹ of interventions to prevent mother-to-child transmission of HIV, including those related to infant feeding counselling and support, is disturbingly low.
- Weak and poorly organized health services affect the quality of infant feeding counselling and support. Inaccurate, insufficient, or non-existent infant feeding counselling has led to inappropriate feeding choices by both

HIV-infected and HIV-uninfected women.

- Scaling-up quality infant feeding counselling and support and related interventions needs sustained and strong commitment and support from international agencies and donors working in concert with Ministries of Health.
- The sharp increase in deaths from diarrhoea and malnutrition in non-breastfed infants and young children during a recent diarrhoeal disease outbreak in one country emphasizes the vulnerability of replacement-fed infants and young children, and the need for adequate follow-up for all infants.
- Increasing access to early infant diagnosis in the first months of life and to paediatric ARV treatment provides new opportunities for postnatal infant feeding assessment, counselling, and follow-up nutritional support.
- Multidisciplinary research, from basic science through clinical trial and operational research, is still needed on identified priority issues, including ways of making infant feeding options safer for HIV-exposed infants.

Recommendations:

The following recommendations for policy-makers and programme managers are intended to supplement, clarify and update existing UN guidance and do

9 The full range of interventions includes: primary prevention of HIV infection in women; prevention of unintended pregnancies in women living with HIV; prevention of transmission from women living with HIV to their infants; and provision of care, treatment and support for women living with HIV and their families. not replace it. Based on this consultation, a technical update of the relevant UN guidance will be forthcoming.

- The most appropriate infant feeding option for an HIV-infected mother should continue to depend on her individual circumstances, including her health status and the local situation, but should take greater consideration of the health services available and the counselling and support she is likely to receive.
- Exclusive breastfeeding is recommended for HIV-infected women for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants before that time.
- When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected women is recommended.
- At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet

without breast milk can be provided.

- Whatever the feeding decision, health services should follow-up all HI V-exposed infants, and continue to offer infant feeding counselling and support, particularly at key points when feeding decisions may be reconsidered, such as the time of early infant diagnosis and at six months of age.
- Breastfeeding mothers of infants and young children who are known to be HI V-infected should be strongly encouraged to continue breastfeeding.
- Governments and other stakeholders should re-vitalize breastfeeding protection, promotion and support in the general population. They should also actively support HI V-infected mothers who choose to exclusively breastfeed, and take measures to make replacement feeding safer for HI V-infected women who choose that option.
- National programmes should provide all HI V-exposed infants and their mothers with a full package of child survival and reproductive health interventions¹⁰ with effective linkages to HIV prevention, treatment and care services. In addition, health services should make special efforts to support primary prevention for women who test negative in antenatal and delivery settings, with particular attention to the breastfeeding period.
- Governments should ensure that the package of interventions referenced above, as well as the conditions described in current guidance¹¹, are available before any distribution of free commercial infant formula is considered.
- Governments and donors should greatly increase their commitment and resources for implementation of the Global Strategy for Infant and Young Child Feeding and the UN HIV and Infant Feeding Framework for Priority Action in order to effectively prevent postnatal HIV infections, improve HIV-free survival and achieve relevant UNGASS goals.

¹⁰See: WHO. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants in resource-limited settings. Geneva, 2006; WHO. The World Health Report: Make every mother and child count. Geneva, 2005.

¹¹ See http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm.

Module 6 HIV Counselling and Testing in PMTCT



Total Module Time: 170 minutes (2 hours, 50 minutes)

Objectives: By the end of this session, participants will be able to:

- Discuss the integration of HIV testing and counselling into PMTCT settings
- Discuss the three guiding principles for testing and counselling in PMTCT setting
- Explain the difference between opt-out and opt-in approaches to HIV testing
- Discuss disclosure process for women who are HIV positive
- Describe several ways to deliver pre-test information and counselling
- Provide pre-test information targeted to PMTCT
- Provide an overview of HIV testing of women with unknown status in labour and delivery settings

Beginning the Module

Slide 1

HIV Counselling and Testing for PMTCT

Module 6: HIV Counselling and Testing

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Slide 2

Learning Objectives

- Discuss the integration of HIV testing and counselling (C & T) into PMTCT settings
- Discuss the three guiding principles for C & T in PMTCT settings
- Explain the difference between opt-out and opt-in approaches to HIV testing
- Discuss disclosure process for women who are HIV Positive
- Provide an overview of HIV testing of women with unknown status in labour and delivery settings

Module 6: HIV Counselling and Testing

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What is Counselling and Testing?

- HIV Counselling is:
 - The confidential dialogue between an individual or a couple and an HCW
 - Tailored to the risk behaviour, circumstances, and special needs of the client
- HIV Testing is:
 - The process that determines whether a person is infected with HIV
- HIV Counselling and Testing (C & T) is:
 - An intervention that is integrated into settings where women of childbearing age receive services

Module 6: HIV Counselling and Testing

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- **In the context of PMTCT, HIV C & T** is a flexible intervention integrated into ANC, L and D wards, family planning, reproductive health clinics & settings offering postpartum care
- **HIV Counselling and Testing**
 - Specific PMTCT interventions depend on whether a woman knows her HIV status
- In this module, the term *counselling* refers to discussions between healthcare workers and clients specific to HIV testing
- **PMTCT Counsellors** may be healthcare workers such as nurses, midwives, doctors, and social workers. Together, testing and counselling can improve a person's understanding of HIV/AIDS and help the person make informed choices for the future

Advantages of C & T for PMTCT

Provides clients an opportunity to learn status

- **Women who are HIV-Negative:**
 - Information & support
- **Women HIV-Positive:**
 - Make informed decisions
 - Receive appropriate/timely interventions
 - Discuss partner testing and prevention
 - Learn about needs of HIV-exposed children

Module 6: HIV Counselling and Testing

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- **For pregnant women who are HIV-Negative, they are provided with information and support to:**
 - Remain uninfected
 - Exclusively breastfeed
- **For pregnant women who are HIV-positive, counselling gives an opportunity to:**
 - Receive appropriate and timely interventions to reduce MTCT including:
 - ARV treatment and/or prophylaxis
 - Information on safer delivery practices including delivery in a health facility
 - Counselling and support for safer infant feeding
 - Discuss the importance of partner testing and prevention
 - Discordance
 - Disclosure and partner referral
 - Prevention of sexual transmission of HIV
 - Receive information on available treatment, care, nutrition, family planning & support services
 - Learn about importance of continuous healthcare
 - Learn about the needs of HIV-exposed children:
 - Infant testing
 - Cotrimoxazole prophylaxis for the infant
 - Referral of older children for HIV testing

Guiding Principles for C & T in PMTCT

The Guiding Principles for Testing and
Counselling in PMTCT Settings are:

- Confidentiality
- Informed Consent
- Post-test support and services

Guiding Principles for C & T in PMTCT: **Confidentiality**

- All client information is kept private
- Information is shared only on a “need to know” basis
- All medical records and registers are kept in secure place

Module 6: HIV Counselling and Testing

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- Maintaining confidentiality is an important responsibility of all healthcare workers and is essential to establishing and maintaining client trust
- Information that is shared between healthcare workers and clients must be kept private
- Clients should be informed that personal and medical information, including HIV test results, may only be disclosed to other healthcare providers in order to ensure that the client receives the appropriate medical care
- Healthcare workers should emphasize, however, that only those healthcare workers who are directly involved in the client's care will have access to the medical records—and only on a “need-to-know” basis
- Anyone not directly involved in a client’s care, for example, a receptionist at an ANC clinic, should not have access to client medical records because they do not need to know a women’s HIV status in order to perform their job
- **All medical records and registers, whether or not they include HIV-related information, should be kept confidential and stored in a safe, secure place**

Guiding Principles for C & T in PMTCT: **Informed Consent**

- Clarifies the purpose, advantages, and disadvantages of testing
- Ensures understanding of the testing and counselling process
- Respects the client's testing decision

Module 6: HIV Counselling and Testing

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- Informed consent, the second of the guiding principles of testing and counselling, is the process during which clients receive clear and accurate information about HIV testing in order to make an informed decision about whether to accept or decline testing
- One of the important objectives of PMTCT is to make HIV testing a routine or normal part of ANC
 - Consequently, within the context of PMTCT, if verbal consent is given then a written consent is not required
 - However if a woman chooses not to be tested then she will need to sign a refusal form.
- It is the responsibility of the healthcare worker obtaining informed consent to make certain that the following elements of informed consent are addressed:
 - Ensure an understanding of the purpose and benefits of testing, counselling, and PMTCT services
 - Ensure an understanding of the testing and counselling process
 - Respect the client's testing decision

Guiding Principles for C & T in PMTCT: Post-test Support and Services

- Always give results in person
- Provide appropriate post-test information
- Offer counselling or referral

Module 6: HIV Counselling and Testing

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- The result of HIV testing should always be offered in person as part of an individual (or couple) post-test counselling session
- Along with the result, appropriate post-test information, counselling, and referral should also be offered
- HIV test results and post-test counselling must be given to all women
- HIV-negative women need test results and counselling which includes prevention messages, including information about safer sex practices, and information and support to exclusively breastfeed
- Healthcare workers should ensure privacy when providing HIV test results
 - Whenever possible, test results should be provided in a private area or room
- Healthcare workers should reassure the client that the post-test conversation and the test results will be kept confidential
- During the post-test counselling session, healthcare workers should inform the client that follow-up treatment, care, contact tracing and support are available, including support for disclosure when needed

Approaches to HIV Testing in PMTCT

- HIV testing strategies and protocols differ depending on the setting in which testing and counselling occurs
- There are two approaches to HIV testing in the ANC, labour and delivery settings and postnatal PMTCT settings
- The protocols for HIV testing at Voluntary Counselling and Testing centres differ from the diagnostic testing protocols in hospital settings, which are also different from the HIV testing protocols in PMTCT settings
- Both approaches include the provision of basic information to the client about HIV and the risks and benefits of testing
 - The approaches differ in how clients *decide* to be tested for HIV and how they *agree* to be tested

OPT-OUT and OPT-IN Approaches to HIV Testing in PMTCT

Opt-In

- Explicit request to be tested
- Written or verbal informed consent

Opt-Out

- Testing routinely offered
- Clients not explicitly asked to be tested
- Client may refuse

Module 6: HIV Counselling and Testing

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- **Opt-out Approach**
- In the opt-out approach all women receive HIV testing and counselling unless they specifically decline to be tested or “opt-out”
 - HIV testing is offered as a routine part of standard care much like syphilis screening
 - The client is given information about the HIV test and an opportunity to decline the test. This information may be provided individually, as in pre-test counselling, or in a group
 - The opt-out approach emphasizes that HIV testing is an expected part of ANC
 - However, testing is still voluntary under the opt-out approach—the client has a right to decline testing
- **Opt-in Approach**
- In the opt-in approach, the client also receives information about HIV testing
- After receiving the information, the client is given the choice of refusing or consenting to an HIV test
- This option is presented in a neutral, supportive manner
- Only women who specifically request to be tested or “opt-in” are tested, and their informed consent—written or verbal—must be clearly given or stated
- The opt-in approach requires an active step by the individual client to agree to be tested

Preferred Strategy: Opt-Out

Opt-Out approach

- Normalizes HIV testing by integrating it into ANC care
- Increases the number of women who receive testing and PMTCT interventions
- May increase the uptake of PMTCT services including testing

Module 6: HIV Counselling and Testing

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- **Preferred ANC testing strategy: Opt-out**
- Opt-out testing helps normalize HIV testing and makes the test a routine ANC component
- It is likely to increase the number of women who test for HIV
- The choice of testing strategies should be made at a national, regional, district, or local level
- PMTCT programme staff must adhere to the guiding principles of counselling and testing (informed consent, confidentiality and the provision of post-test services)
- All pregnant women attending Antenatal Programs at the Community Clinics Department of Public Health are offered voluntary counselling and testing for HIV and informed signed consent



Handout 6.1

- **Bahamas Policy Statement for Counselling and Testing in PMTCT**

Confidentiality Role Play



Handout 6.2

Confidentiality role-play script

Introduction: Mary is returning to the ANC clinic for a follow-up visit after receiving a positive HIV test result. Today, she is 4 months pregnant. The healthcare worker, Mrs. Johnson, is very busy this morning and is expecting the rest of the day to be at least as busy. She has asked the receptionist to organising the HIV reports. While organising the reports, the receptionist recognizes Mary's name and notices that Mary is HIV-positive.

When Mary arrives for her appointment, she notices that some of the healthcare workers are looking at her and whispering. When Mrs. Johnson calls Mary for her appointment, they are forced to sit in a corner of the waiting room because all of the client rooms are occupied.

Mrs. Johnson	<ul style="list-style-type: none"> Hello, Mary. I am glad to see you here on time for your follow-up appointment. Have a seat.
Mary	<ul style="list-style-type: none"> Hello, Mrs. Johnson. I have been so sad and nervous about my recent positive HIV test. What does this mean for me and my family? <i>Mary looks around and is very uncomfortable because she thinks other clients can hear her.</i>
Mrs. Johnson	<ul style="list-style-type: none"> I wish we had a private office to sit in Mary, but space is so limited here. I am certain that no one will hear us talking back here.
Mary	<ul style="list-style-type: none"> I just want you to know, Mrs. Johnson, that if my husband finds out, he will be extremely angry. Please tell me what to do.
Mrs. Johnson	<ul style="list-style-type: none"> I'm sorry, Mary. I hear you saying that disclosing your HIV status to your husband will be a very difficult thing to do. <i>She pauses, giving Mary a chance to hear what she has just said.</i> I know this is very difficult for you, but I am here to help you through this. Let us talk about your concerns around telling your husband.
Mary	<ul style="list-style-type: none"> Oh, Mrs. Johnson, what will I do? My husband and I were so excited about this pregnancy. Before we were married, I had another boyfriend, and I didn't always use protection. <i>Mary starts to cry. All of the clinic staff is now watching Mary.</i>
Mrs. Johnson	<ul style="list-style-type: none"> You must be feeling very overwhelmed right now, Mary. Please know that everything you tell me will be held in strict confidence, including your test results. Let's now discuss some of the concerns you have about disclosing to your husband. Will that be ok?



Handout 6.3

SKILLS AND TECHNIQUE CHECKLIST		
As you observe your colleagues role-play, indicate the counselling skills and techniques they use by placing a check in the appropriate box.		
Skills & Techniques	Specific Strategies, Statements, Behaviours	(✓)
Active listening attending skills	▪ Greets the client; shakes their hand if appropriate	
	▪ Leans forward when talking	
	▪ Makes eye contact	
	▪ Shows interest in the client	
	▪ Other (Specify):	
Paraphrasing	▪ Body language indicates attentiveness to speaker (looks at client, facial expression indicates interest)	
	▪ Uses encouraging language such as “yes,” “okay,” etc	
	▪ Restates what the client has said using different words	
	▪ Paraphrases in a manner that indicate the client/s have been understood	
	▪ Other (Specify)	
Reflecting Feelings	▪ Reflects emotional responses back to the client using different words	
	▪ Comments on client’s challenges while also indicating client’s strengths	
	▪ Other (Specify)	
Questioning	▪ Asked questions that identify, clarify and break problems down into more manageable components	
	▪ Uses open-ended questions to get more in-depth information from the client	
	▪ Style of questioning reflects interest, care, and concern rather than interrogation	
	▪ Other (Specify)	
Clarifying	▪ Checks understanding of what the client is saying	

	<ul style="list-style-type: none"> ▪ Uses phrases such as: “Are you saying that...?” Correct me if I am wrong...” 	
	<ul style="list-style-type: none"> ▪ Other (Specify): 	
Summarising	<ul style="list-style-type: none"> ▪ Takes time to summarize information the client shares 	
	<ul style="list-style-type: none"> ▪ Check with client to be sure they understand the important concerns and issues 	
	<ul style="list-style-type: none"> ▪ Other (Specify): 	

Counselling Skills

Importance of Good Counselling Skills

A good counsellor:

- Plays a vital role in identifying women who are HIV-positive
- Helps clients identify and take steps to reduce risky behaviour
- Needs to be able to offer testing and counselling to male partners
- Offers all clients the right to decline HIV testing

Role Of The Healthcare Worker

The role of a HCW is to support and assist the clients decision-making process by:

- Listening to the client
- Understanding the choices that need to be made
- Helping the client explore her/his circumstances and options
- Helping the client develop self-confidence, enabling her to carry out the decision made

Role Of The Healthcare Worker (2)

- The HCW is NOT responsible for solving all of the client's worries or concerns
- The HCW is NOT responsible for the client's decisions

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Some Common Counselling Mistakes

- Controlling the discussion
- Judging the client
- Preaching to a client
- Labelling a client
- Reassuring a client without even knowing his or her health status

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- The principles of counselling are easy to learn but difficult to apply
- Some common counselling mistakes include:
 - Controlling the discussion - instead of encouraging the client's open expression of feelings and needs
 - Judging the client—making statements that show that the client does not meet the counsellor's standards
 - Preaching to a client—telling clients how they should behave or lead their lives, for example, saying: “you never should have trusted that guy, now you have created a big problem for yourself.”
 - Labelling a client - instead of finding out their individual motivations, fears or anxieties
 - Reassuring a client without even knowing his or her health status—for example, telling a client, “you have nothing to worry about.”

Some Common Counselling Mistakes (2)

- Not accepting the client's feelings
- Advising prematurely
- Interrogating
- Encouraging dependence
- Persuading or coaxing

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- Not accepting the client's feelings—saying “you shouldn't be upset about that.”
- Advising - before the client has collected enough information or taken enough time to arrive at a personal solution
- Interrogating—asking accusatory questions
 - Questions that start with “why...?” can sound accusatory
- Encouraging dependence—increasing the client's need for the counsellor's presence and guidance
- Persuading or coaxing—trying to get the client to accept new behaviour by flattery or fakery. “I know you are a smart girl and you will just break up with your boyfriend, like I have told you.”



Handout 6.4

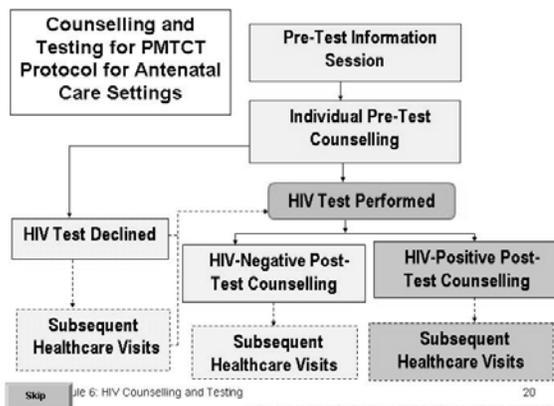
Common Counselling Mistakes

The principles of counselling are easy to learn but difficult to apply. Some common counselling mistakes include:

- 1) Controlling the discussion, instead of encouraging the client's open expression of feelings and needs.
- 2) Judging the client—making statements that show that the client does not meet the counsellor's standards.
- 3) Preaching to a client—telling clients how they should behave or lead their lives, for example, saying: "you never should have trusted that guy, now you have created a big problem for yourself."
- 4) Labelling a client instead of finding out their individual motivations, fears or anxieties.
- 5) Reassuring a client without even knowing his or her health status—for example, telling a client, "you have nothing to worry about."
- 6) Not accepting the client's feelings—saying "you shouldn't be upset about that."
- 7) Advising, before the client has collected enough information or taken enough time to arrive at a personal solution.
- 8) Interrogating—asking accusatory questions. Questions that start with "why...?" can sound accusatory.
- 9) Encouraging dependence—increasing the client's need for the counsellor's presence and guidance.
- 10) Persuading or coaxing—trying to get the client to accept new behaviour by flattery

Objectives of Pre-Test Information and Counselling

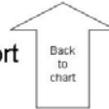
- To describe several ways to deliver pre-test information and counselling
- To provide pre-test information targeted to PMTCT
- To provide an overview of HIV testing of women with unknown status in L & D settings



Slide 21

Pre-Test Information Session

- Basics of HIV transmission, risk and MTCT
- Benefits of HIV testing
- HIV testing process
- Discordance and partner HIV testing
- Risk reduction
- Antenatal care, PMTCT and support services



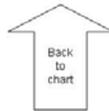
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Individual Pre-Test Counselling

- Assess, reinforce client understanding of pre-test information
- Identify, discuss client's questions and concerns
- Provide risk assessment, risk reduction counselling
- Develop risk reduction plan
- Routinely offer HIV test



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HIV Test Declined

- Offer individual counselling
- Address barriers to testing
- Discuss:
 - Safer sex and risk reduction
 - Exclusive breastfeeding
 - Antenatal care, postpartum care and safer delivery
 - Infant care
- Re-offer HIV test or develop plan to return for HIV test
- Provide referrals, take-home information



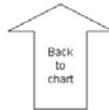
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HIV Test Declined Subsequent Healthcare Visits

- Review HIV-test declined messages, provide referrals
- Re-offer HIV test



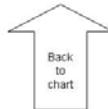
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HIV-Negative Post-Test Counselling

- Provide HIV test result
- Assess understanding of meaning of result
- Identify, address client questions
- Discuss:
 - Partner HIV testing and disclosure
 - Safer sex and risk reduction
 - Exclusive breastfeeding
 - Antenatal care, postnatal care and safer delivery
 - Infant care
- Provide take-home information
- Refer to the appropriate agency(ies)
- HIV test result indeterminate: counsel as above AND explain need for repeat testing, schedule repeat test



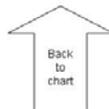
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HIV-Negative Subsequent Healthcare Visits

- Review post-test counselling messages, provide referrals
- Discuss risk reduction plan
- Refer to the appropriate agency(ies)

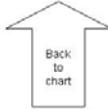


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HIV-Positive Post-Test Counselling

- Provide HIV test result and support
- Assess understanding of meaning of result
- Identify, address client questions
- Discuss:
 - ARV prophylaxis and/or treatment
 - Infant-feeding options
 - Treatment and support services for client and family
 - Partner HIV testing and disclosure
 - Safer sex and risk reduction
 - Antenatal care, postnatal care and safer delivery
 - Infant care and diagnosis
- Refer to the appropriate agency(ies)
- Provide take-home information

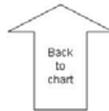


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HIV-Positive Subsequent Healthcare Visits

- Review post-test counselling messages
- Refer to the appropriate agency(ies)



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Models of Delivery for Pre-test Sessions

- Group information
- Individual
- Couple counselling

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- **Delivery of pre-test information**
- The model of delivery selected for the pre-test session depends on many factors, including the number of clients, staff availability, PMTCT setting, and facility and national policy
- All models should:
 - Optimize the staff available
 - Integrate HIV testing and counselling into clinic routine without disrupting client flow
 - Maximize the number of women tested for HIV and counselled on PMTCT services during their first visit
- **Group pre-test information session**
- Group information sessions for testing and counselling are efficient because they optimize human resources, allow for interaction among participants and can be easily integrated into the clinic flow. Group information sessions enable healthcare workers to provide the basic testing and counselling messages to many women at one time. Group information sessions are recommended for ANC settings but can be used in post-delivery settings as well; however, group sessions are not practical or recommended for the labour and delivery (L&D) setting.
- Key considerations for providing information to groups include:
 - Adjusting the information covered to fit the group's level of knowledge
 - Emphasising behaviour change, including safer sex practices
 - Setting aside time for questions and answers
 - Having enough knowledge and skills to comfortably answer questions
 - Referring for individual counselling, when requested
 - Healthcare workers should support and encourage women to be tested at their first ANC visit because many women begin care late in pregnancy or are seen only once in their pregnancy. The decision to be tested may need support from family members and involve a return visit with family decision-makers. Healthcare workers should welcome family members, especially those involved in decision-making, and provide the same HIV pre-test information given to the client.

Group Information Pre-Test Sessions

- **Key Considerations:**
 - Adjusting the information covered to fit the group's level of knowledge
 - Emphasising behaviour change, including safer sex practices
 - Setting aside time for questions and answers
 - Having enough knowledge and skills to comfortably answer questions
 - Referring for individual counselling, when requested

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- Group information sessions for counselling and testing are efficient because they:
 - Optimize human resources
 - Allow for interaction among participants
 - Can be easily integrated into the clinic flow
- Group information sessions enable healthcare workers to provide the basic testing and counselling messages to many women at one time
- Group information sessions are recommended for ANC settings but can be used in post-delivery settings as well; however, group sessions are not practical or recommended for the labour and delivery (L&D) setting

Individual Pre-Test Sessions

- Explore the individual client's personal HIV risk behaviours and concerns
- Should be made available to anyone who requests it and to those who initially decline the offer of testing
- Time for a one-to-one discussion between a counsellor and client individualized to the client's situation

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- **Individual pre-test information session**
- Individual pre-test counselling is a one-to-one session during which the healthcare worker offers the same messages delivered during a group pre-test session

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Individual Pre-Test Sessions (2)

- For the client who initially declines testing, the individual session provides an opportunity for the HCW to:
 - Explore with the client her reasons for not wanting HIV testing
 - Address the barriers
 - Review the benefits for the client and her baby of learning her HIV status
- The counselling supports the client in making an informed decision about whether or not to test

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Individual Pre-Test Sessions (3)

- Ideally, should be available in all PMTCT settings
- Individual counselling may be incorporated into routine ANC visits to any woman who attends the group pre-test session and requests individual counselling
- Healthcare workers may refer clients to individual pre-test counselling to clarify information provided in group sessions

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- Ideally, individual pre-test counselling should be available in all PMTCT settings

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Components of Individual Pre-Test Counselling Session

- Assess, reinforce client understanding of pre-test information
- Identify, discuss client's questions and concerns
- When testing and counselling is part of ANC services:
 - Each client must be reassured that declining an HIV test will not affect her access to ANC or related services
 - HCW should emphasize that if the client changes her mind and wants to be tested, an HIV test can be provided during a later visit

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Couples Pre-Test Counselling: Engaging Male Partners

Provides an opportunity to:

- Stress the man's responsibility
- Reduce the chances that the woman will be blamed
- Encourage couples to practice safer sex
- Gain the male partner's support
- Support adherence to PMTCT interventions
- Refer the couple
- Identify discordant couples
- Support women and men who test HIV-negative to stay negative

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- Healthcare workers should encourage clients to invite male partners to participate in HIV testing and counselling services
- Engaging male partners provides an opportunity to:
 - Stress the man's responsibility for protecting the health of his wife or partner and their family
 - Reduce the chances that the woman will be blamed for bringing HIV infection into the family
 - Encourage couples to practice safer sex by using condoms and limiting the number of other sexual partners
 - Gain the male partner's support for PMTCT interventions
 - Support adherence to PMTCT interventions, since HIV-positive pregnant women who are tested with their partners are more likely to adhere to PMTCT interventions
 - Refer the couple (if the male partner is HIV-positive) together for treatment, care, prevention and support services
 - Identify discordant couples and support the HIV-negative partner to stay negative through risk-reduction. The HIV-negative partner in a discordant couple is at extremely high risk of acquiring HIV infection
 - Support women and men who test HIV-negative to stay negative through risk-reduction

Couple Pre-test Counselling: Discordance in Couples

- One partner is HIV-positive and the other is HIV-negative
- HCWs should emphasize to HIV-negative pregnant women the heightened risk of MTCT if they are newly infected

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- Discordance in couples
 - This situation can occur for many reasons
 - A client often believes that her test results reflect her partner's status but this is not always the case
 - There are many factors involved in the transmission of the HIV that may account for the discordance
- In counselling HIV-negative pregnant women, healthcare workers should emphasize the heightened risk of MTCT if they become newly infected with HIV during pregnancy
- It is important to communicate that the chances of MTCT are much higher because there is an especially high amount of HIV in the body with a new infection

Advantages of Couple Pre-test Counselling

- Partners hear information and messages together
- Environment is safe
- Counsellor has the opportunity to ease tension and diffuse blame
- Post-test counselling messages reflect the test results of both the man and the woman

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- In couple counselling, partners receive HIV counselling together
- The healthcare worker provides the same messages as in a group pre-test session, but specifically addresses the couple's concerns
- The advantages of couple counselling and testing include:
 - Partners hear information and messages together, enhancing the likelihood of a shared understanding
 - Environment is safe for couples to discuss concerns

Advantages of Couple Pre-test Counselling (2)

- Neither partner needs to disclose results or persuade the other to be tested
- Couple counselling facilitates the communication and cooperation required for risk reduction such as condom use
- Prevention, care and treatment decisions can be made together
- Couple counselling is appropriate in all PMTCT settings
 - If it is not available on-site, it should be available by referral

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- Prevention, care and treatment decisions can be made together, including decisions about PMTCT interventions such as infant feeding
- Where possible, couple counselling should be available in maternity and post-delivery wards
- Healthcare workers may need to be innovative, particularly if the woman was tested during labour, to develop ways to test and counsel the male partner

Couples Pre-Test Counselling: Responsibilities of HCW

- Encourage clients to involve their partners in ANC services
- Assist client with disclosing results to partner
- Provide information
- Refer for treatment, care and support

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- Healthcare workers can encourage clients to involve their partners in ANC services and get tested for HIV, whether the client is HIV-negative or HIV-positive
- Skill-building, problem-solving, and practising what the client will say to her partner may help a client “disclose” (tell) her results to her partner and suggest the partner be tested
- Information about agency hours, location, and services may be given
- If either the client or her partner has a positive HIV test result, refer the couple for treatment, care, and social support

Couples Pre-Test Counselling: Considerations

- Establish a relationship with each partner
- Assure them of confidentiality
- Assess each person's understanding of HIV/AIDS
- Do not allow one person to dominate the conversation
- Explain the testing process

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Couple Post-Test Counselling

- Ask whether the couple would prefer to receive the results separately or together
- Mention the possibility of discordant results
- Provide information on available PMTCT interventions
- Confirm the benefits of knowing one's HIV status
- Ask who else might be affected by the test results
- Confirm the couple's willingness to be tested
- Be prepared to provide referrals to the couple

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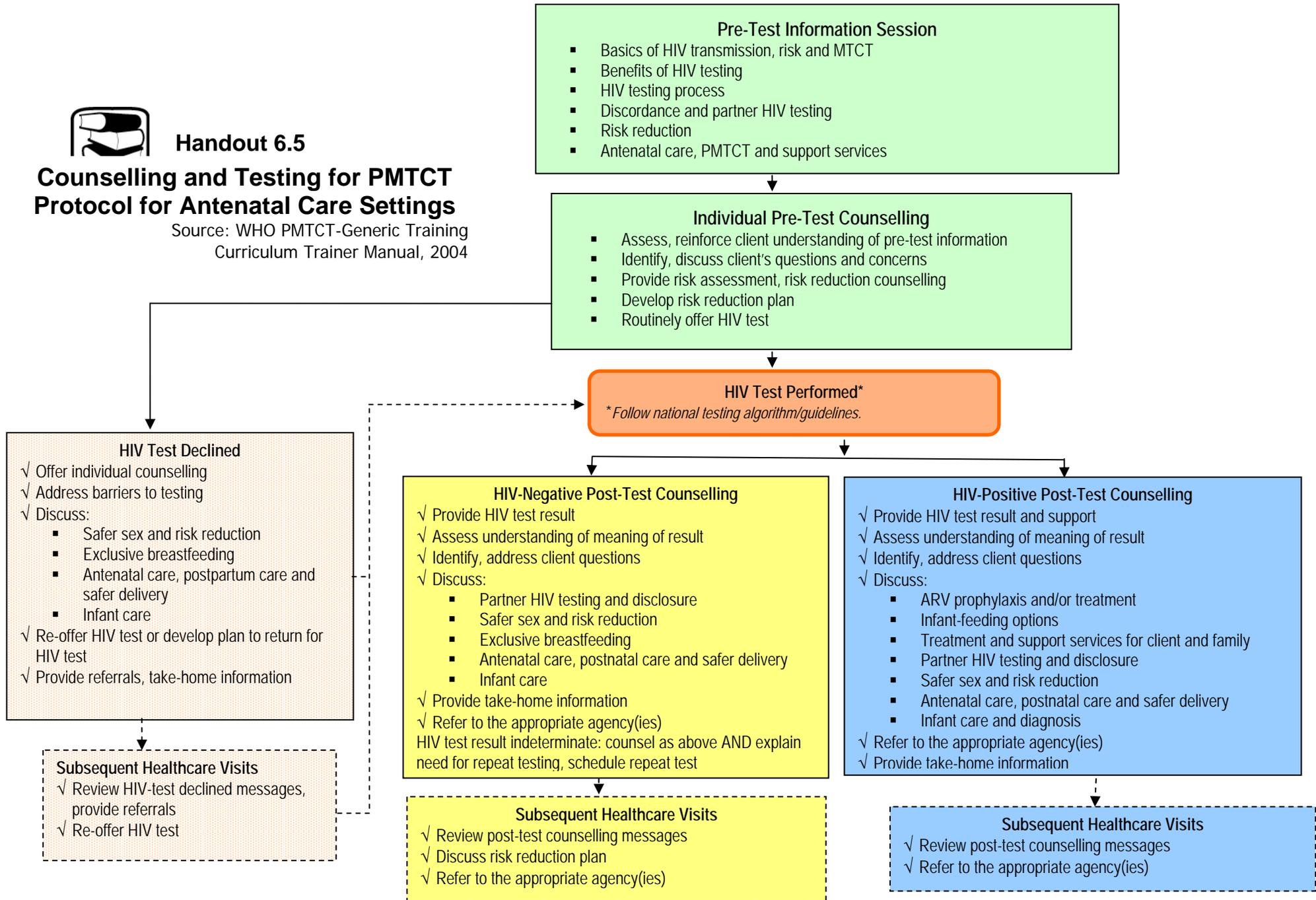
- Ask whether the couple would prefer to receive the results separately or together
- Most experts recommend receiving results together as a condition for couple counselling
- Mention the possibility of discordant results, and prepare them for this possibility
- Provide information on available PMTCT interventions: ARV prophylaxis, safer infant-feeding practices
- Confirm the benefits of knowing one's HIV status; discuss concerns or the possible risk of such knowledge
- Be prepared to refer the couple for further counselling if indicated
- Be prepared to refer the couple for HIV care and treatment, when appropriate



Handout 6.5

Counselling and Testing for PMTCT Protocol for Antenatal Care Settings

Source: WHO PMTCT-Generic Training Curriculum Trainer Manual, 2004



**Trigger Scenarios
“Giving Results to Sero-
Discordant Couples”**



Handout 6.6

Trigger Tape Exercise: Giving Results to Sero-Discordant Couple

Introduction to Exercise

Trigger Tape Context

This tape depicts a counsellor providing HIV test results to Maria and Thomas, a couple who recently decided to be tested because Maria is pregnant. You will see Maria and Thomas receiving their test results first individually and then you will see them receiving their results as a couple. Having you see two different ways of giving test results to couples will lead us to a rich discussion on the advantages and disadvantages of counselling couples individually and together.

In the first scenario or vignette, you will see the counsellor briefly talking with Maria and Thomas about the procedures for giving them their test results individually. The next two scenarios you will see the counsellor giving Maria and Thomas their test results individually. The final scenario depicts a different way of providing results to couples and shows Maria and Thomas receiving their results together.

Keep in mind that before they received their results they were counselled by the same health care professional on what HIV is and the procedures and options for receiving their results. They received this counselling prior to arriving at the clinic on the day they receive their test results.

Scenario #1: Preparing Maria and Thomas to Receive their Results Individually

Questions for Discussion

1. How did the counsellor help prepare Maria and Thomas to receive their results?
2. Why is it important to prepare individuals and couples to receive their results?
3. The same counsellor also spoke with Maria and Thomas previously about HIV and the options for receiving their results. Why is that information important to share with a couple before giving them their results on a **different** day?

Scenario #2: Maria Receives her Positive Test Results (4 minutes, 40 seconds)

Questions for Discussion

1. How did Maria respond to her positive results?
2. What did the counsellor do well? What would you recommend she do differently?
3. How did the counsellor use the Inform-Support-Plan approach?

Scenario #3: Thomas Receives his Negative Test Results (1 minutes, 45 seconds)

Questions for Discussion

1. How did Thomas respond to his negative results?
2. What did the counsellor do well? What would you recommend she do differently?
3. How did she explain the “window period” to Thomas? Why might this be a difficult concept to understand?
4. How did she help Thomas understand that he must use condoms when having intercourse with Maria until he is tested again?
5. At the end, Thomas asked “If I’m negative, then wouldn’t she be too? If you were the healthcare professional, how would you reply to Thomas?”
6. How did the counsellor use the Inform-Support-Plan approach?

Scenario #4: Thomas and Maria Receiving their Results Together (2 minutes)

Questions for Discussion

1. How did the healthcare professional help Thomas and Maria understand their results, especially the differences in their results?
2. What did the counsellor do well? What would you recommend she do differently?
3. Describe what the healthcare professional said to help Maria and Thomas plan ahead and manage their new challenging situation they are facing.

Summary

- What are the advantages and disadvantages to counselling couples together? Individually?
- What are the particularly challenging issues a healthcare professional faces when counselling couples together who are sero-discordant?
- Is there a “best” approach to use when a couple’s results are sero-discordant?

Advantages and Challenges of Counselling Couples Together

Advantages of Counselling Couples Together

- Provides opportunity to counsel the male partner, whereas he may not come for counselling on his own.
- Can emphasize the importance of safe sex with both the male and female partner present, and possibly get agreement on how to proceed safely when engaged in sexual relations. Also offers opportunity to discuss family planning with both partners.
- Reduces the opportunity for “blaming” the woman by providing an opportunity for the HCP to negotiate the situation and discuss potentially volatile feelings.
- A partner may assume that if they are negative, their partner is as well. Remember that even though he was counselled about the possibility of sero-discordance, Thomas assumed if he was negative, Maria must also be. This assumption can be strong and lead to partners entering a couple’s counselling session with “blinders” and unprepared to hear their partner’s possible positive status.
- Identifies discordant couples so that other steps may be taken.
- In the case of discordant couples, the infected partner can be referred for care and treatment.

Challenges of Counselling Couples Together

- Partners may not feel comfortable discussing their status with their partner present. This discomfort could lead to less disclosure and discussion about planning for the future.
- In the cases of sero-discordant couples, one partner may be in danger of violence from the other if positive test results are revealed. An HCP must determine whether it is in the best interests of the couple, especially the positive partner, to counsel them separately.

Whether they hear their results together or alone, couples need to be adequately prepared to receive their results. If they will receive their results together with an HCP, the HCP needs to be prepared to work through their results with them, especially if the results are discordant. The couple needs to understand that one of them may be positive and the other negative, and why this may be the case. If they

are counselled separately, a couple should decide if they are going to share their results with each other and how they are going to do this. They should know that an HCP is available to help them manage this process. They should also understand that the HCP will not tell individual partners the status of the other unless explicit permission has been given to do so.

Summary of Considerations in Counselling Couples

- Establish a relationship with each partner.
- Assure them of confidentiality and support.
- Assess each person's understanding of HIV/AIDS.
- Avoid allowing one person to dominate the conversation.
- Explain the testing process.
- Discuss post-test counselling:
 1. Ask whether they would prefer to receive the results separately or together. Most experts recommend receiving results together as a pre-condition for couples counselling.
- Mention the possibility of discordant results (if one partner is infected while the other is not) and prepare them for this possibility.
- Provide information on available PMTCT interventions: ARV prophylaxis, infant-feeding practices.
- Confirm the benefits of knowing one's HIV status; discuss concerns or potential risks of such knowledge.
- Ask who else might be affected by the test results.
- Confirm the couple's willingness to be tested.
- Be prepared to refer the couple for further counselling, if indicated.

Some Final Points

- There is not one approach advocated when counselling couples. Different countries in the Caribbean encourage different approaches.
- There is not one approach advocated for all couples. An HCP must assess what is the best approach based on his or her interactions and assessment of a couple's willingness, purpose for being tested, strength of their relationship, support system, etc.

The Inform-Support-Plan approach can be a helpful way to work with sero-discordant couples or couples in which both partners are positive.

Provider Initiated Counselling and Testing: Labour and Delivery

- 3 Objectives to guide C&T when woman presents in L&D with unknown status
- Process includes:
 - A brief targeted health education on HIV prevention and transmission as well as HIV treatment and care
 - Identified need for confidentiality and verbal consent
 - Deliver HIV results

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Testing and Counselling For Women of Unknown HIV Status At The Time Of Labour And Delivery

Women presents to L & D in early labour

- Provided pre-test information and rapid testing
- Test results provided as soon as they are available

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- In some settings, women who have not been tested during ANC or did not attend ANC may present at the time of labour with unknown HIV status
- The labour and delivery environment presents unique challenges for the healthcare worker and the woman—the L&D setting is typically busy and has very little privacy ; women are often anxious and in pain
 - The healthcare work should make the woman as comfortable as possible and provide counselling in as confidential a manner as the situation permits
- HCW should provide the HIV test results as soon as they are available -whether positive or negative
 - If the woman is HIV-positive, offer emotional support and ARV prophylaxis
- If the healthcare worker is not able to discuss some of the post-test counselling information during labour, it is important to continue the discussion after childbirth, when the woman can better consider the information and ask questions

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 45</p>	<p>Testing and Counselling For Women of Unknown HIV Status At The Time Of Labour And Delivery (2)</p> <p>Woman presents to L & D in advanced labour with time for pre-test session but no time for results</p> <ul style="list-style-type: none"> • Attempt should be made to obtain results before delivery and provide ARV prophylaxis <p><small>Module 6: HIV Counselling and Testing 45</small></p>	<ul style="list-style-type: none"> • Depending on the woman’s comfort level, the healthcare worker may conduct the pre-test session and draw the blood for testing as early as possible during labour • Every attempt should be made to obtain the results before delivery and provide the mother with ARV prophylaxis • If this is not possible, the healthcare worker should obtain the results in time to inform decisions about infant feeding and infant ARV prophylaxis • Infant ARV prophylaxis will still reduce risk of transmission of MTCT if provided within 72 hours of birth
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 46</p>	<p>Testing and Counselling For Women of Unknown HIV Status At The Time Of Labour And Delivery (3)</p> <p>Woman presents to maternity ward late in labour with insufficient time for the pre-test session</p> <ul style="list-style-type: none"> • Counselling and testing should be done after delivery <p><small>Module 6: HIV Counselling and Testing 46</small></p>	<ul style="list-style-type: none"> • If the woman cannot be given pre-test information and tested during labour, the counselling and testing should be done after delivery
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Slide 47</p>	<p>Testing and Counselling For Women of Unknown HIV Status At The Time Of Labour And Delivery (4)</p> <p>Conducting the Pre-test Session in L & D</p> <ul style="list-style-type: none"> • Ensure that the woman is between contractions and comfortable • If no record of an HIV test during this pregnancy, inform woman that she will receive information about HIV testing • Ask her whom, if anyone, she would like present for the session • If she would like to be alone, ask the family to leave the room <p><small>Module 6: HIV Counselling and Testing 47</small></p>	<ul style="list-style-type: none"> • Before beginning the pre-test session, ensure that the woman is between contractions and comfortable <ul style="list-style-type: none"> • Agree on a signal that the woman can use to indicate when a contraction begins and when it ends; wait until the contraction is over before resuming the session • If she would like to be alone, ask the family to leave the room for a few moments and use this time to conduct the pre-test session

Testing and Counselling For Women of Unknown HIV Status At The Time Of Labour And Delivery (5)

Conducting the Pre-test Session in L & D (cont')

- Ask whom she would like to be present when she receives the test results
- Speak in soft tones, but make sure she can hear
- Use a temporary screen or curtain around the bed for privacy, if available
- The session can be conducted in a corridor, waiting area, or any other quiet place where some privacy is possible

Demonstration of a pre-test session in Labour and Delivery

Subsequent ANC Visits

Topics to address:

- Interventions for PMTCT
- Infant-feeding options
- Follow-up care and treatment for women and infant
- Family-planning options

- An important component of the post-test session is the offer of subsequent healthcare visits and referrals for HIV treatment, care, prevention and support services
- All women should be encouraged and assisted to return for subsequent healthcare visits, particularly those who test HIV-positive
- In most countries, pregnant women are encouraged to attend scheduled ANC visits throughout their pregnancy
 - However, in many places, pregnant women attend ANC once, often late in pregnancy, and do not make subsequent visits



Handout 6.7

Script: Pre-Test Session in Labour and Delivery

Greet and introduce yourself to patient.

Hello Ms./Mrs. _____. My name is ____ and I am your Nurse Counsellor, _____.

As part of our policy and Standard of Care, we perform several routine blood tests on women coming to have their babies here. These tests include the test for HIV. All of these tests are done to make sure that you and your baby are doing well, and to make sure there are no complications.

Do you know what HIV is? If NO: HIV is an infection that can lead to a serious illness called AIDS. Not everyone who has HIV looks or feels sick, but if you have it you can pass it to your baby.

A mother with HIV can pass HIV to her baby during pregnancy, labour and delivery and breastfeeding. That is why we always recommend that all pregnant women have an HIV test.

If the test shows that you have HIV, we can give you medicine immediately to lower the chance of passing HIV to your baby. After you give birth, we can give medicine to you and your baby and provide or refer you to where you can get care and treatment services for you and your family.

The results of all of your tests are private and shared only with you and the immediate medical team helping to deliver your baby.

Unless you refuse, we will test you now and give you and your baby the best care based on your test results.

Probe Question: Before we go any further, what concerns or questions do you have about HIV Testing?

Will you consent to have these routine tests performed, including the test for HIV?

Key Points

- Pre-test information, individual pre-test counselling, HIV testing and post-test counselling should be available to all pregnant women
- There are three guiding principles for C & T in PMTCT settings
 - Confidentiality
 - Informed consent
 - Post-test support and services
- There are two approaches to HIV testing during pregnancy: opt-in and opt-out
 - The opt-out approach is recommended for HIV testing and counselling in the ANC setting
 - Opt-out testing helps normalize HIV testing and makes the test a routine ANC component

Module 6: HIV Counselling and Testing

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Key Points (2)

- Partner testing and couple counselling are encouraged
- Post-test counselling is important for all women
 - For women who are HIV-negative, emphasize the prevention of HIV infection.
 - For women infected with HIV, give information on PMTCT and referrals to HIV care, treatment and social services, where available
- Subsequent ANC visits should be encouraged for HIV treatment, care, prevention and support services, particularly those who test HIV-positive

Module 6: HIV Counselling and Testing

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Module 7 HIV Testing



Total Module Time: 60 minutes (1 hour)

Objectives: By the end of this session, participants will be able to:

- Explain the similarities between HIV testing and other routine screening tests conducted in the context of ANC and PMTC
- Identify the different types of antibody and antigen tests for HIV
- Describe the HIV testing processes

Slide 1

HIV Testing

Slide 2

Learning Objectives

- Explain the similarities between HIV testing and other routine screening tests conducted in the context of ANC and PMTCT
- Identify the different types of antibody and antigen tests for HIV
- Describe the HIV testing processes

Module 7- HIV Testing

Large Group Brainstorm

Lab Testing in the Antenatal Clinic



HGB

- Why is Hgb screening routinely conducted during pregnancy?
- How can anemia impact the mother and baby?
- What actions can HCWs take if anemia is detected?

Module 7: HIV Testing

Urinalysis (UA)

- Why is UA routinely carried out during pregnancy? What is the test looking for?
- How can gestational diabetes impact the mother and her baby?
- What actions can HCWs take if gestational diabetes is detected?

Module 7: HIV Testing

Slide 6

VDRL

- Why is VDRL screening routinely conducted during pregnancy?
- How can syphilis impact the mother and baby?
- What actions can HCWs take if the test is positive?

Module 7: HIV Testing

Slide 7

HIV

- Why is HIV screening conducted during pregnancy?
- How can HIV impact the mother and the baby?
- What do we do if the HIV test is positive?

Module 7: HIV Testing

7

Slide 8

Overview of HIV Testing

- Tests detect antibodies or antigens associated with HIV found in:
 - Whole blood
 - Saliva
 - Urine
- Blood sampling most common method
- Results can be combined to confirm results
- High degree of accuracy
 - When administered properly

Module 7: HIV Testing

Slide 9

5 Basic Steps to HIV Testing

1. Specimen is obtained
2. Specimen is processed
3. Test is conducted by a laboratory technologist/technician trained in HIV testing procedures
4. Client is told their result
5. Post-test counselling, support, and appropriate referrals

MODULE 7: HIV Testing

Slide 10

Selection of an HIV Test

- National guidelines/policies
- Availability
 - Laboratory or other trained personnel
 - Supplies
- Evaluation of specific tests in the country
- Cost
 - Supplies
 - Test kits

MODULE 7: HIV Testing

- Several factors influence the selection of an HIV test by individual facilities and national policy makers

Slide 11

Types of HIV Tests

- Two main types of tests
 - Antibody testing
 - Tests for the antibodies or proteins the body makes in response to HIV infection
 - Types:
 - HIV ELISA
 - Rapid HIV tests
 - Antigen testing
 - Tests for the virus itself

MODULE 7: HIV Testing

HIV Tests in the Bahamas

- The tests used in the Bahamas include:
 - Antibody Elisa test
 - Antigen/Antibody combo testing is used only on blood donors
 - Rapid Test is usually only available for testing in special situations

MODULE 7: HIV TESTING

- Rapid test situations include HCW needle stick, rape victims, etc.

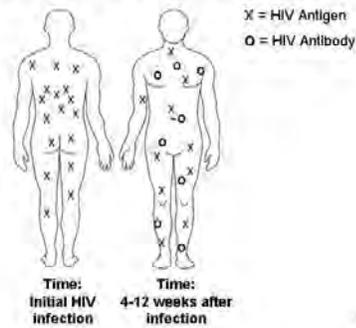
Antibody Tests

- Conducted 3-12 weeks after infection.
- Sensitivity and specificity to HIV 1 and 2
 - False positives: rare
 - All positive tests are confirmed with second test
 - False negative:
 - "Window period"
 - Severe immune deficiency

MODULE 7: HIV TESTING

- Accuracy of rapid tests and ELISA antibody tests are 99.6%
- **Sensitivity** is the probability of getting a positive test result for an individual infected with HIV. If a test has a high sensitivity, there will be few false negatives
- **Specificity** is the probability of getting a negative test result for an individual that is not infected with HIV. A test with high specificity will result in few false positives

Window Period



Module 7: HIV Testing

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- In the first few weeks after infection, there is more and more HIV in the body. This initial infection is when some people have the non-specific flu-like symptoms
- HIV-specific antibodies develop soon after infection. Our latest tests for HIV can typically detect these antibodies about 21 days after infection
- On this second image, blue circles indicate HIV specific antibody. As antibodies develop, the amount of virus will begin to drop because the immune system works to control the infection
- From the time of initial infection until the development of antibody, an ELISA or rapid test will be negative or indeterminate during the Acute HIV (Retroviral) Syndrome. An antibody test may produce a “false negative” result if done within this window period until the antibodies become detectable
- In all other stages of HIV infection, HIV antibody testing is the best method for diagnosing HIV infection in older children and adults

HIV ELISA

- Blood obtained from venipuncture
- Requires special lab equipment, trained technician
- Results may be requested within 24 hours
- Positive results must be confirmed

Module 7: HIV Testing

- Confirmatory tests may be with another ELISA or by a Western blot, another antibody test, and can be done on the initial blood specimen
- The test takes 20-30 minutes

Slide 16

Rapid Tests

- Blood obtained from finger stick
- Minimal training and no special lab facilities
- Results available in 20-30 minutes
- Highly accurate

MODULE 7: HIV Testing

- Note that HIV rapid tests are not readily used in the Bahamas
- The test is available in private practice (cost: approx. \$50)

Slide 17

Antigen Tests

- Identify all or pieces of the antigen
- Tests for VIRUS
 - PCR (polymerase chain reaction) - Can be DNA (qualitative) or RNA (quantitative)
 - Viral culture
- Expensive, results in 2-3 days
- Useful for diagnosing
 - early infection (during the window period)
 - children born to women with HIV (passive transfer of maternal antibody)

MODULE 7: HIV Testing

- DNA PCR only done on infants
- Test is currently too expensive for use with all HIV infected adults

Explanation of HIV Antibody Positive Infants



- Testing for HIV in children is complicated by the passive transfer of maternal antibodies
- All infants receive their mother’s antibody in the last trimester of pregnancy to protect her or him as a newborn. This is true for measles, ricketsia, or any infection mother may have had
- Over time, as the infant’s own immune system matures, baby will lose this antibody as we can see in Baby 1 in this diagram. However, if we are testing for HIV with an antibody test (ELISA or Rapid test), the baby might test positive as a result of her mother’s antibody at 6-12 months. It is not until the baby is 18 months, or 3 months after ending BF, that the antibody test is accurate
- So, as the diagram illustrates - all infants born to women with HIV will have a positive antibody test, but only some of them will have the virus
- An antigen test can detect virus as early as 1 day of birth if the child has enough virus to detect- these are usually the 30% of infants infected in utero
- Infants infected at delivery will test positive to an antigen test by 4-6 weeks as the amount of virus increases rapidly
- If we have antigen testing available, we can diagnose infants much earlier: at 6-24 weeks for non-breast fed infants, or 6-12 weeks after cessation of BF

HIV Testing Process for Pregnant Women

- Voluntary counselling on 1st ANC visit
- Consent acquired
- Blood draw and tested
- Two HIV tests
 - Elisa
 - Rapid test (confirmatory)
- Results in 24-48 hours
- Results transferred, stored and filed
- Client given 1 week return appointment

Module 7: HIV Testing

- All women attending the Public Health clinics are offered Voluntary counseling and Testing on 1st antenatal clinic visit
- On consent they are referred to the lab where a blood sample is drawn for HIV and other routine tests in pregnancy. The specimen is transported to the Princes Margaret Hospital lab where HIV Testing is done in the blood bank
- Two test are done on the same specimen
 - The 1st is an Elisa which look for antibodies to the HIV virus
 - The second is a rapid test, a confirmatory test
- Results are ready 24 –48 hours
 - The hard copy of the results are transferred to the Maternity Ward, where the antenatal records are stored and filed in the client's antenatal records as well as recorded as 076 on the front page of the Perinatal Clinical Record and front of the Perinatal Control Card in the spaces provided
- The client is given a 1 week appointment to return for results and follow up

HIV Testing Process for Pregnant Women (2)

- All positive results
 - Posted into Perinatal Clinical Record
 - Sent to HIV/AIDS Centre
 - HIV/AIDS Centre attempts to locate and refer client
- All indeterminate results test is repeated
- Second indeterminate: blood sample sent to research lab in Canada for Western Blot
- Meanwhile:
 - If woman is 14 weeks or more and unsure of her status, she starts triple therapy

Module 7: HIV Testing

- All positive results for HIV are is posted into the Perinatal Clinical Record and a copy sent to the HIV/AIDS Centre
- Once these results are received at the HIV/AIDS Centre, attempts are made to locate the client and refer for post test counselling to the antenatal clinic or the HIV/AIDS Centre
- If the results are indeterminate the test is repeated. If this second test is indeterminate, a blood sample is drawn and sent to Hospital for Sick Kids Lab, Toronto Canada, for Western Blot
- Meanwhile, if the woman is 14 weeks or more, unsure of her status she starts triple therapy (antenatal regiment) as the Bahamas Protocol

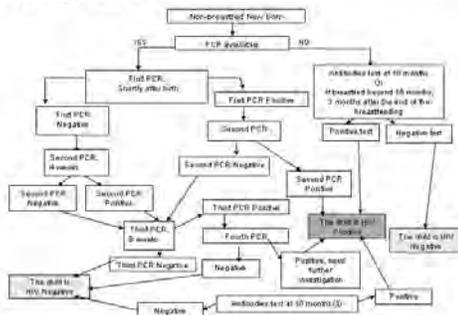
Serology test for HIV and HbsAG

- HIV and HbsAg strip test to be done only after initial testing by the machine shows results such as grayzone or reactive
- Abbot Determine Strip Test is not a stand alone test
 - Results should not be used to determine a persons status when only that test is performed

MODULE 7: HIV Testing

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Bahamas Protocol: Diagnosis of HIV Infection in Exposed Infants



MODULE 7: HIV Testing

HIV ELISA test beyond 18 months: then antibody tests at 18 months after 2 weeks of breastfeeding

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- HIV infection is diagnosed by two positive HIV virologic tests performed on separate blood samples, regardless of age. HIV infection can be reasonably excluded in non-breast fed infants with two or more negative virologic tests performed at age >1 month, with one of those being performed at age > 4 months
- Two or more negative HIV immunoglobulin G (IgG) antibody tests performed at age >6 months with an interval of at least 1 month between the tests also can be used to reasonably exclude HIV infection in HIV exposed children with no clinical or virologic laboratory evidence of HIV infection
(Source: DHHS Pediatric Guidelines for Antiretroviral Therapy, 2004)
 - When the results of two virologic (PCR) HIV tests on the infant do not agree (i.e., one is positive but the other is negative), a third PCR test should be performed. The infant is considered HIV negative at 1 month of age after 2 consecutive negative DNA PCR results, done at monthly intervals
 - An appointment is given to return at 18 months for and ELISA test to confirm the child's own antibodies are HIV negative
 - Also completes a quality of life assessment
 - If the ELISA is negative, the infant is officially discharged from the Paediatric Infectious Disease Clinic



Handout 7.1

Explanation of HIV Antibody Positive Infants

HIV Exposed
Antibody Positive
Not Infected

- HIV Antibody (Mom)
- ✗ HIV (Virus)
- HIV Antibody (Baby)

Antibody Positive
HIV Infected

Birth



4-6 Months



HIV Culture Positive



12 Months



18 Months



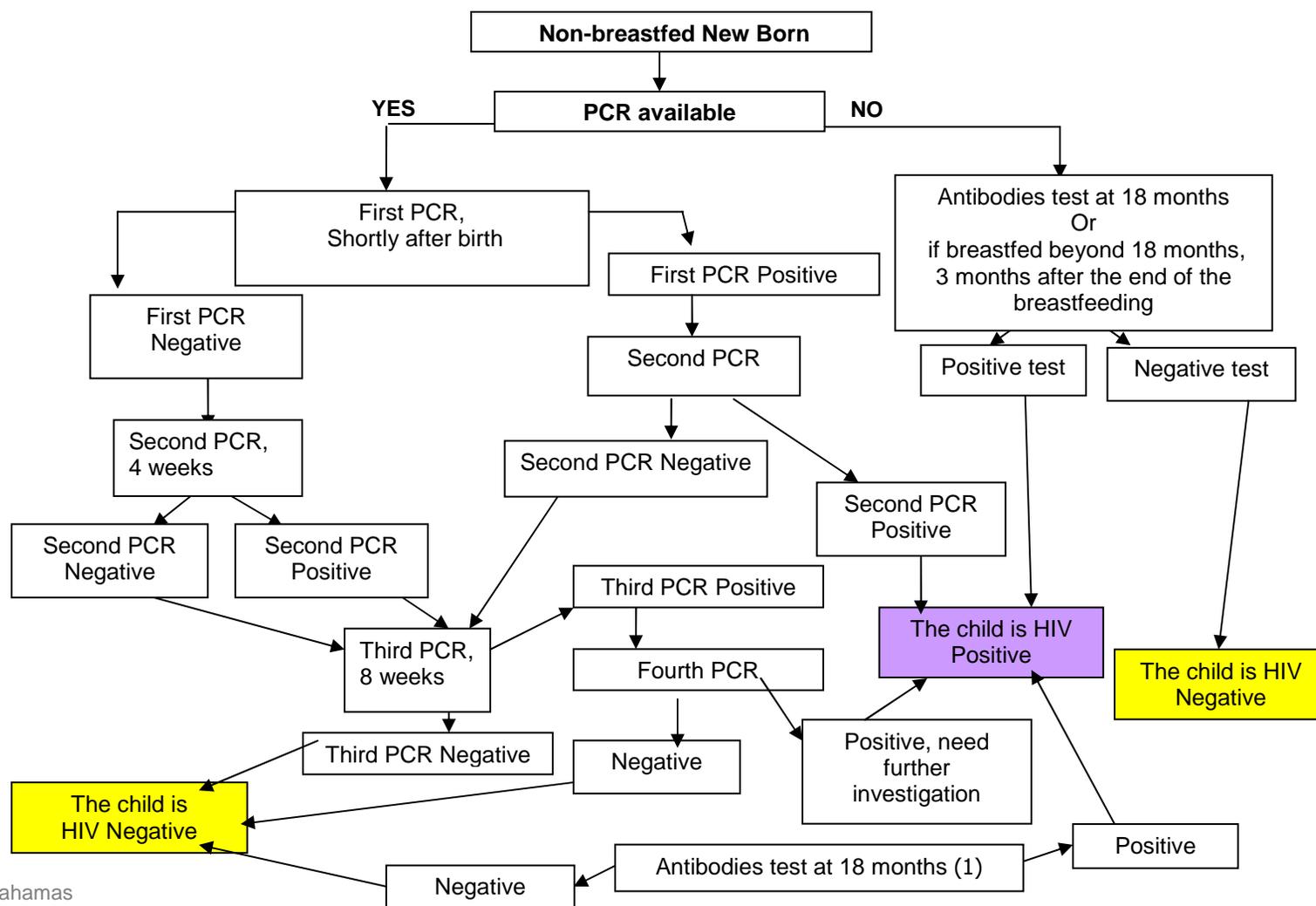
Antibody negative
Sero Reverter
Baby does not and never did
have HIV infection

Antibody Positive
HIV Culture/PCR Positive
HIV Infected. Over time
will develop symptoms of
disease.



Handout 7.2

Diagnosis of HIV Infection in Exposed Infants



•(1) If breastfed beyond 18 months, then antibody tests at 3 months after the end of breastfeeding

Key Points

- Tests detect antibodies or antigens associated with HIV
- Selection of an HIV test depends on National guidelines/policies, availability of supplies and trained personnel, evaluation in the country, and cost
- Antibody tests test for the antibodies to HIV and are conducted 3-12 weeks after infection, post window period
- Antigen tests test for the virus itself and can be conducted earlier, during the window period

Module 8 Stigma and Discrimination Related to PMTCT



Total Module Time: 155 minutes (2 hours, 35 minutes)

Objectives: By the end of this module, participants will be able to:

- Define and identify HIV/AIDS related stigma and discrimination
- Clarify personal values, behaviors and attitudes which may affect care to people living with HIV/AIDS
- Discuss strategies to address stigma and discrimination affecting provision of PMTCT services

**Stigma and Discrimination
Related to PMTCT**

Slide 2

Learning Objectives

- Define and identify HIV/AIDS related stigma and discrimination
- Clarify personal values, behaviours and attitudes which may affect care to people living with HIV/AIDS
- Discuss strategies to address stigma and discrimination affecting provision of PMTCT services

Module 8: Stigma and Discrimination

2

Slide 3

Group Exercise

Experiencing Stigma and
Discrimination

Slide 4

Dot Colour	Type of people
Red	•Family •Good friend •Someone you are delighted to see
Green	•Acquaintance •Colleague
Blue	•Actively avoid

Module 8: Stigma and Discrimination

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Stigma and Discrimination

- Common among chronic and disfiguring diseases
- HIV/AIDS related is often far more severe than other diseases
- Have a negative effect on health outcomes
- Remain major obstacles to HIV prevention and care and treatment

Module 8: Stigma and Discrimination

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Stigma versus Discrimination

- **Stigma** reflects an attitude
- **Discrimination** is an act or behaviour
- Stigma and discrimination are linked
 - Discrimination is a way of expressing stigmatizing thoughts
- **Stigma** refers to **unfavourable attitudes and beliefs** directed toward someone or something
- **Discrimination** is the **treatment** of an individual or group with preference or prejudice

Module 8: Stigma and Discrimination

6

HIV/AIDS-related Stigma and Discrimination

- Affects more than PLWHA
 - Those thought to be infected
 - Family
 - Friends
 - Social groups and communities
 - Behaviours believed to have caused the infection

Module 8: Stigma and Discrimination

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- Stigma is particularly pronounced when the behaviour linked to the origin of a particular disease is perceived to be under the individual's control, such as prostitution or injection drug use.
- People who often are already socially outcast (such as: poor people, indigenous populations, men who have sex with men, injection drug users, and sex workers) frequently bear the heaviest burden of HIV/AIDS-related stigmatization.
 - People who are HIV-infected are often assumed to be members of these groups, whether they are or not.
- HIV/AIDS-related Discrimination examples:
 - A person with HIV is denied services by a healthcare worker
 - The wife and children of a man who recently died of AIDS are rejected from the husband's family home or village after his death
 - A man loses his job because it becomes known that he is HIV-infected
 - A woman finds it difficult to get a job once it is revealed that she is HIV-infected
 - A woman who decides not to breastfeed is assumed to be HIV-infected and is rejected by her community

Three aspects of the HIV epidemic

- Epidemic of HIV infection
- Epidemic of AIDS
- Epidemic of stigma, discrimination, and denial around HIV/AIDS

****Note: This aspect is as central to the global AIDS challenge as the disease itself*

Module 8: Stigma and Discrimination

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- The challenge of stigma has led to characterising the HIV/AIDS epidemic as consisting of three epidemics

HIV/AIDS and Women

- Women more vulnerable to HIV
 - Lack of access to
 - Efficient prevention
 - Healthcare
 - Support
 - Economic and social inequalities between men and women
- MTCT during pregnancy, birth and breastfeeding
- HIV-infected women often subjected to stigma, abandonment, and discrimination

Module 8: Stigma and Discrimination

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Consequences of Stigma in PMTCT and Women

- Discourages access to ANC services
- Prevents access to HIV testing, counselling and PMTCT services
- Discourages disclosure of HIV test results to partner(s)
- Discourages acceptance of PMTCT interventions
- Inhibits use of safer infant-feeding practices
- Confers secondary stigmatization on child

Module 8: Stigma and Discrimination

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- The consequences of stigma and discrimination in women and PMTCT are highlighted in this scenario:
 - The woman in a couple is the first to be tested for HIV
 - Her test is positive
 - She decides to share her status with her partner. Her partner blames her for introducing HIV in the family and is very stigmatizing and discriminatory. Her partner insists that she not tell anyone else and is not allowed to receive care as it may expose it to the rest of the community.
 - The woman later becomes pregnant and refuses any PMTCT services, care or support because she is compelled to keep their HIV status secret.
 - This scenario shows how stigma and discrimination can have severe and far-reaching implications beyond the one infected person but rather across the entire family and community.

Slide 11

Human Rights and HIV-related Stigma and Discrimination

- Freedom from discrimination is a basic human right
- Natural justice should be applied to all people without exception
- Discrimination against PLWHA, actual or presumed, is a violation of human rights

Module 8: Stigma and Discrimination

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Slide 12

PMTCT Programmes and Human Rights

- Women have a right to:
 - Determine the course of their reproductive lives
 - Access HIV/AIDS information and infection prevention
 - Decide to be tested or not
 - Choose to learn the result of an HIV test
 - Make informed decisions about infant feeding
- Children have a right to
 - Survival
 - Development
 - Healthy life
 - Healthcare
 - Access HIV/AIDS information and infection prevention

Module 8: Stigma and Discrimination

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The Face of Stigma: Implementing Interventions

- Attitudes and actions are stigmatizing
- Choice of language may express stigma
- Lack of knowledge and fear foster stigma
- Shame and blame are associated with HIV/AIDS
- Stigma can exist even in caring environments

Module 8: Stigma and Discrimination

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- These points may provide PMTCT programmes with a framework for developing and implementing interventions to address HIV/AIDS-related stigma and discrimination
- **Attitudes and actions**
 - People often unaware of that their attitude and actions are stigmatizing
 - A person can exhibit contradictory or differing beliefs and behaviours
 - Example: A person who is opposed to stigmatization or discrimination may simultaneously believe that PLWHA indulge in immoral behaviours, deserve what they get, or are being punished by God for their sins
- **Choice of language**
 - Language is central to how stigma is expressed
 - Example: the use of insulting references to those with HIV/AIDS (such as: that disease we learned about, walking corpses, those expected to die)
- **Lack of knowledge and fear**
 - Knowledge and fear act together in unexpected ways that allow stigma to grow
 - Lack of knowledge leads to assumptions made about PLWHA
 - Fear of death is so powerful that many will avoid individuals suspected to have HIV
- **Shame and blame**
 - Stigmatization often focuses on the sexual transmission of HIV
 - People assume that individuals who are HIV-infected must have been infected through sexual activities considered socially or religiously unacceptable
 - People who are HIV-infected are often believed to be promiscuous, careless, or unable to control themselves, and therefore responsible for their infection
- **Stigma can exist even in caring environments**
 - Caregivers (including HCWs) who offer love and support may also exhibit stigmatizing and discriminatory behaviour
 - Example: blaming or scolding

Addressing Stigma/Discrimination

Interventions take place at all levels

- National
- Community and social/cultural
- PMTCT site/facility
- Individual

Module 6: Stigma and Discrimination

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- Stigma and discrimination can manifest themselves on many levels: National, Community, PMTCT programme, Individual PMTCT HCWs
- Examples of interventions at each level:
 - National Level: encourage funding for programs, policies, laws to protect persons against discrimination
 - Community: Invite “high profile” personalities to disclose HIV status
 - Program: Include PLWH/A as advisors for implementation of PMTCT programs. Posting a sign that says “Confidentiality is your right and our commitment”
 - Personal: “Agreeing on a standard response when a HCW hears or overhears conversations with peers containing discriminatory comments, such as “I am uncomfortable when I hear that statement. It may be hurtful to our clients” or by posting a sign.

Group Activity

Strategies for Stigma and Discrimination

PLWHA Panel

Panel Discussion

Key Points

- Stigma reflects an attitude
- Discrimination is an act or behaviour
- Stigma and discrimination affect more than PLWHA
- Stigma has many consequences in PMTCT and women including discourages and prevents access to ANC services, HIV testing, counselling and PMTCT services

Module 8: Stigma and Discrimination

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Key Points (2)

- Discrimination against PLWHA, actual or presumed, is a violation of human rights
- Interventions for stigma and discrimination can take place at all levels (national, community and social/cultural, PMTCT site/facility, Individual)

Module 8: Stigma and Discrimination

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APPENDIX 8-A

Summary of the International Guidelines on HIV/AIDS and Human Rights as adopted by the Second International Consultation, July 2002

GUIDELINE 1:

States should establish an effective national framework for their response to HIV/AIDS, which ensures a coordinated, participatory, transparent, and accountable approach, integrating HIV/AIDS policy and programme responsibilities across all branches of government.

GUIDELINE 2:

States should ensure, through political and financial support, that community consultation occurs in all phases of HIV/AIDS policy design, programme implementation, and evaluation and that community organizations are enabled to carry out their activities, including in the field of ethics, law, and human rights, effectively.

GUIDELINE 3:

States should review and reform public health laws to ensure that they adequately address public health issues raised by HIV/AIDS, that their provisions applicable to casually transmitted diseases are not inappropriately applied to HIV/AIDS, and that they are consistent with international human rights obligations.

GUIDELINE 4:

States should review and reform criminal laws and correctional systems to ensure that they are consistent with international human rights obligations and are not misused in the context of HIV/AIDS or targeted against vulnerable groups.

GUIDELINE 5:

States should enact or strengthen anti-discrimination and other protective laws that protect vulnerable groups, people living with HIV/AIDS and people with disabilities from discrimination in both the public and private sectors, ensure privacy and confidentiality and ethics in research involving human subjects, emphasize education and conciliation, and provide for speedy and effective administrative and civil remedies.

GUIDELINE 6:

States should enact legislation to provide for the regulation of HIV-related goods, services, and information, so as to ensure widespread availability of qualitative prevention measures and services, adequate HIV prevention and care information, and safe and effective medication at an affordable price.

GUIDELINE 7:

States should implement and support legal support services that will educate people affected by HIV/AIDS about their rights, provide free legal services to enforce those rights, develop expertise on HIV-related legal issues, and utilize means of protection in addition to the

courts, such as offices of ministries of justice, ombudspersons, health complaint units, and human rights commissions.

GUIDELINE 8:

States, in collaboration with and through the community, should promote a supportive and enabling environment for women, children, and other vulnerable groups by addressing underlying prejudices and inequalities through community dialogue, specially designed social and health services and support to community groups.

GUIDELINE 9:

States should promote the wide and ongoing distribution of creative education, training, and media programmes explicitly designed to change attitudes of discrimination and stigmatisation associated with HIV/AIDS to understanding and acceptance.

GUIDELINE 10:

States should ensure that government and the private sector develop codes of conduct regarding HIV/AIDS issues that translate human rights principles into codes of professional responsibility and practice, with accompanying mechanisms to implement and enforce these codes.

GUIDELINE 11:

States should ensure monitoring and enforcement mechanisms to guarantee the protection of HIV-related human rights, including those of people living with HIV/AIDS, their families, and communities.

GUIDELINE 12:

States should cooperate through all relevant programmes and agencies of the United Nations system, including UNAIDS, to share knowledge and experience concerning HIV-related human rights issues and should ensure effective mechanisms to protect human rights in the context of HIV/AIDS at international level.

Source: WHO PMTCT-Generic Training Curriculum Trainer Manual, 2004

APPENDIX 8-B Alternative Exercise

This exercise is optional and may be used in settings where a PLWHA panel cannot be recruited.

Case study

Two PMTCT nurses, Joan and Yvette, were in the ANC clinic break room. Their conversation started from the usual discussion about family and children into a discussion about Fay, a patient they saw earlier in the day. The two nurses couldn't help but discuss the fact that Fay, who is now 5 months pregnant with her first child, was just diagnosed with HIV. They also speculated whether Fay's husband (who is well-known in the community) is also HIV-infected—and if he is, where he got infected.

The nurses were unaware that the window in the break room was open to the outside courtyard, where Eunice, an afternoon ANC patient, was waiting for her appointment.

Eunice, who was related to Fay by marriage, went straight home after her appointment and told her husband about Fay's HIV diagnosis. The next day Eunice's husband told a friend at work who, a week later, mentioned the story in front of Fay's husband. Fay's husband went home that night, accused Fay of being HIV-infected, and asked her to leave the house.

Questions to consider:

- What about HIV/AIDS-related stigma and discrimination does this case study highlight? (e.g., How was Fay stigmatized? How was Fay discriminated against and by whom?)
- What issues does this raise in terms of PMTCT policies? How can these policies help minimize stigma and discrimination? What can the HCW do? What could PMTCT management have done?
- What policies should be in place?
- What training should be provided to ensure staff adherence to the policies?
- What else needs to happen to ensure that the policies are implemented and enforced?
- What barriers do you foresee?
- What community-based initiatives could be implemented to reduce the kind of stigma and discrimination faced by Fay and her husband (and, indirectly, her child)?
- Are any national policy/legal changes suggested by this case study? If so, what are they, and how would you go about ensuring it happens?

Module 9 Continuum of Care for Women, Children, and Families



Total Module Time: 155 minutes (2 hours 25 minutes)

Objectives: By the end of this session, participants will be able to:

- Explain what is meant by continuum of care for mothers, infants and families
- Discuss the role of healthcare workers for ensuring follow-up care for women, infants and families.
- Understand the importance of immediate post-partum care and follow-up care for mothers and HIV-exposed infants
- Describe the various components of comprehensive HIV care, treatment and support
- Understand the assessment, prophylaxis and treatment measures for HIV-related conditions and opportunistic infections
- Identify the special care needs of infants and children infected with HIV
- Identify symptoms of HIV infection in infants and the HIV/AIDS Staging Systems for children
- Describe the wide range of postnatal support interventions HIV-positive mothers may need, including clinical, mental, palliative care and psychosocial support.

Slide 1

Continuum of Care of Women, Children and Families

Session 9: Continuum of
Care

1

Slide 2

Learning Objectives

- Explain continuum of care for mothers, infants and families
- Discuss the role of healthcare workers in ensuring that women, infants and families receive follow-up care
- Understand the importance of immediate post-partum care and follow-up care for mothers and HIV-exposed infants

Session 9: Continuum of Care

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Slide 3

Learning Objectives (2)

- Understand the assessment, prophylaxis and treatment measures for HIV-related conditions and opportunistic infections
- Identify the special care needs of infants and children infected with HIV
- Identify symptoms of HIV infection in infants and the HIV/AIDS Staging Systems for children

Session 9: Continuum of Care

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Slide 4

Continuum of Care

- PMTCT care extends beyond labour and delivery
- Continuing care means women and their families are linked to essential care, support and treatment services needed to manage and live with HIV
- Continuing Care is about comprehensive care—holistic care

- Continuum of Care is actually holistic care. Not just looking at HIV, but also at mental health, social support systems, spiritual health, economic health
- Many elements of continuing care will be covered in a separate, follow-up training.

Session 3: Continuum of Care

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Slide 5

Strategies for Comprehensive Care, Support and Treatment

Mother and Partner

- Assessment and referral for ARV therapy according to Bahamas national guidelines
- Adherence counselling for ARV therapy
- Screening, prevention and treatment of HIV-related conditions including opportunistic infections
- Nutritional counselling

The provision of care, treatment and support of HIV-infected mothers and their HIV-exposed children supports Element 4 of a comprehensive approach to PMTCT:

- “**Element 4:** Provision of treatment, care and support to women infected with HIV, their infants, and their families”

Session 3: Continuum of Care

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Slide 6

Strategies for Comprehensive Care, Support and Treatment (2)

Mother and Partner

- Psychosocial support
- Palliative care, where indicated.
- Support for safer infant-feeding practices
- Counselling about safer sex and family planning
- Partner notification and contact tracing

Session 3: Continuum of Care

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Slide 7

Strategies for Comprehensive Care, Support and Treatment (3)

Child

- Prevention and treatment of opportunistic infections and other common infections
- Monitoring growth and development and providing immunizations
- Diagnosis of HIV by laboratory tests and/or clinical symptoms
- Assessment and referral for ARV therapy if necessary

Session 9: Continuum of Care

- All HIV positive children are treated with HAART

Slide 8

Strategies for Comprehensive Care, Support and Treatment (4)

Family

- Links and relationships with community services, organizations and agencies to promote continuity of care

Session 9: Continuum of Care

Slide 9

**Continuum of Care:
Role of Healthcare Workers**

- Possess a clear understanding of when to refer pregnant women for ARV therapy
- Be able to recognize common HIV-related conditions and opportunistic infections in pregnancy as well as the most common HIV-related conditions in adults and children
- Be able to recognize and advise clients on the side effects of ARV therapy

Session 9: Continuum of Care

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- The healthcare worker plays a critical role in ensuring that women, children and families receive the care, treatment and support that they need and are not lost to follow-up.
- At all levels of care, healthcare workers have the opportunity to advise, reinforce or promote the strategies for comprehensive care, treatment and support.
- Adherence counselling is a vital role played by healthcare workers in promoting adherence to care and treatment.

Slide 10

**Continuum of Care:
Role of Healthcare Workers (2)**

- Understand the importance of adhering to the ARV therapy regimen and be able to counsel their clients to support adherence
- Establish effective communication and links between maternal and child health services and centres for HIV care, support and treatment

Session 9: Continuum of Care

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Slide 11

Before Leaving the Hospital

Review immediate postpartum care of women who are HIV-infected and newborns who are HIV-exposed

Session 9: Continuum of Care

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Postpartum Care of Women Infected with HIV

- In the postpartum period, a mother with HIV infection should receive care that will:
 - Support her health
 - Prevent complications
 - Improve the family's ability to live positively with HIV infection

Session 9: Continuum of Care

Module 3 provides comprehensive information on immediate postpartum care of mothers and their newborns.

Remember:

- Women who are HIV-infected require additional postpartum monitoring and support.
- Women taking ARVs require nutritional support and guidance.
- Infant-feeding support is required during the first two years of a child's life with special attention given during clinic visits to infant feeding and any time a mother decides to change her feeding practice.
- Early identification and treatment of infections improves the health of the mother.
- Postpartum family planning should include both partners. Family planning is an important element to a comprehensive approach to prevent HIV infection in infants and young children.

Postpartum Care of Women with Unknown HIV Status

- Should receive the same postpartum care as women with HIV infection
- Counsel NOT to breastfeed until status is known
- Encourage to test for HIV
 - If found to be HIV infected, refer mother and infant to HIV/AIDS Centre for further counselling, support, care, and treatment
 - If negative, refer to community maternal and child health clinic for follow-up

Session 9: Continuum of Care

Even in the post-delivery setting there are PMTCT strategies that can significantly reduce transmission of HIV from mother to baby.

- If a woman tests HIV-negative after delivery, provide:
 - Post test counselling
 - Range of education, care and support services available to all mothers post-partum
- If a woman tests HIV-positive after delivery, provide:
 - ARV prophylaxis for the infant as per national guidelines, within the first six hours after birth
 - Safer infant-feeding counselling and support for the mother as per national guidelines
 - Referrals for HIV-related support, care, and treatment

Slide 14

Newborn Care

- Routine assessment for signs and symptoms of HIV infection is essential for HIV-exposed infants
 - Follow Bahamas HIV testing and immunization guidelines
 - PCP prophylaxis recommended according to national guidelines

Session 9: Continuum of Care

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- More detail on PCP prophylaxis is covered later in this module

Slide 15

Follow-Up Care of the Mother with HIV infection

Session 9: Continuum of Care

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- Follow-up care for the mother is important to the health and well-being of the entire family. New mothers will need extra support in caring for a newborn that is HIV exposed.

Follow-Up Care for Mother with HIV

- MUST include an assessment of the mother's treatment needs!
- Women on ARV therapy before pregnancy (regimen I) will continue taking their prescribed drugs, as recommended by the doctor
- Women on prophylaxis (regimen II) will discontinue regimen once the recommended course of treatment is completed
 - Assess for ARV treatment eligibility based on laboratory tests and readiness to take ARV drugs

Session 3: Continuum of Care

- Women whose CD4 count is less than 250 would continue HAART after pregnancy
- Women whose CD4 count is above 250 will be evaluated 4 weeks postpartum for eligibility for treatment
- ARV prophylaxis is provided in the context of ANC and PMTCT programmes, and ARV therapy is usually provided in care and treatment clinics
- ARV prophylaxis does not provide any long term benefit to the health of a mother or her child whereas ongoing ARV therapy can improve the health of both mother and child
- The same ARV drugs are used to prevent MTCT and to treat HIV; the main difference is that they are used for different periods of time and in different combinations
- ARV therapy does not cure HIV infection and must be taken on a continual basis.
- Adherence is particularly difficult with the challenges of post partum stresses and changes in new routines.
 - Many women are more adherent to their babies' medication schedules than to their own.
 - Women may feel guilty, especially if medication administration is difficult.
 - Creative strategies are needed to support women early post partum.

Follow-Up Care for Mother with HIV (2)

- Discuss routine postnatal care and child care
- Support mother's infant feeding choice
- Assess increased risk for infections
 - Chest, Urinary Tract, Puerperal, Episiotomy Wound, or Breast Infections
- Teach universal precautions
 - Care for lochia
 - Emphasize that there is no risk of HIV infection within normal household activities

Session 3: Continuum of Care

- Assessing a mother's treatment needs is just one part of follow-up care. Routine postnatal care can help ensure the health of the mother and the infant. These visits should be used to reinforce safer infant feeding practices, teach universal precautions, assess and promote treatment adherence, and link women, infants and families to other medical, psychosocial and support services within the community.
- During the puerperium the risk for infections is increased due to stress of labour and blood loss during delivery.

Follow-Up Care for Mother with HIV (3)

- If appropriate, develop schedule for ARV prophylaxis or treatment before discharge
 - Identify potential adherence challenges with new infant at home
 - Refer to appropriate agencies
- Identify family planning method
- Link family members living with HIV to treatment, care and support services
 - Referral to infectious disease clinic
 - Cervical smears for mother

Session 3: Continuum of Care

BAHAMAS PROTOCOL Schedule of Post-partum Visits

- Mother and infant are visited by the postnatal home visit team for 10 days post-partum
- Mother is assessed for ARV eligibility
- Attend post-natal follow-up clinic at 4 weeks post-partum at community health clinic
- Routine HIV care should continue

Session 3: Continuum of Care

- Healthcare workers should ensure that mothers who are HIV-infected and have given birth in a healthcare facility return for postpartum appointments and are visited at home.

Timing of follow-up visits

- HIV infection increases an infant's risk of illness and failure to thrive. Because HIV disease can progress extremely rapidly in perinatally-infected infants, close monitoring and regular visits are important. The newborn should be seen in the healthcare facility or at home within two weeks of delivery or sooner to monitor feeding progress. The health care team should also discuss how to monitor health of the child at home.

What is being assessed at the visits?

- Home visit is assessing for complications of the puerperium
- Infectious Disease Clinic assessing for ARV eligibility
- Post-natal clinic visit assessing puerperium condition, pap smear is done, advisement and prescribing of family-planning method

BAHAMAS PROTOCOL: 1st Post-Partum Visit

- Review labour and delivery with client
- Review adherence to care and treatment
- Review pre-ARV CD4 counts and viral load, SMAC 25 and FBC with differential results:
 - CD4 > 350, VL < 50,000, Discontinue prophylaxis ARVs and follow clients according to adult guidelines
 - CD4 < 350 and/or VL > 50,000, Continue ARVs and follow clients using Bahamas adult treatment guidelines

Session 3: Continuum of Care

Follow-up Care: Family Planning

- Family planning options should be routinely discussed throughout antenatal and postnatal care
- The main family planning goals for the woman who is HIV-infected are:
 - Preventing unintended pregnancy
 - Spacing children appropriately, which can help reduce maternal and infant morbidity and mortality

Session 3: Continuum of Care

- Preventing unintended pregnancies among HIV infected women is one of the four main elements for preventing mother-to-child transmission of HIV. Ideally, family planning should involve both the woman and her partner—couples should be provided with information on available family planning options and supported in their choice.
- More information on Family Planning in follow-up care will be addressed in a separate training on Continuum of Care



Handout 9.1

Contraceptive and HIV/AIDS

Method	Provides Protection Against:			WHO Rating	Comments
	Pregnancy	STIs	HIV		
Female Condom	X	X	X	1	Female controlled, expensive
Oral Contraceptives (OCPs)	X			2	Some concern with ART, estrogen interaction
Other Hormonal contraceptives (injectables, patch, implants)	X			2	Some ongoing studies on interaction with ARVs
IUD	X			2	Standard contraindications for women with high risk of gonorrhea or Chlamydia
Male condom	X	X	X	1	Male Controlled, inexpensive
Diaphragm, cervical cap with spermicide	X			3	Non-oxynol 9 may increase risk of HIV transmission
Sterilization—Tubal Ligation (Female); Vasectomy (Male)	X			1	Permanent, Can be expensive
Spermicides	X			4	Non-oxynol 9 may increase risk of HIV transmission

WHO Rating system

1. No restriction for the use of contraceptive
2. Advantages of the method outweigh theoretical or proven risk
3. Theoretical or proven risks outweigh advantages. Safe use requires careful clinical judgment and access to clinical services
4. Represents an unacceptable health risk if the contraceptive is used.

Follow-up Care of the Infant

HIV-Exposed Infant

Session 9 Continuum of Care

- PMTCT interventions reduce, but do not eliminate, the risk of HIV transmission from mother to infant. Regardless of whether PMTCT-related ARV prophylaxis is administered to mother and/or baby, regular follow-up care is critical for an infant born to a mother with HIV/AIDS.
- Infants born to mothers with HIV infection or mothers of unknown status must be identified and provided with ARV prophylaxis as per Bahamas national guidelines. HIV exposed infants must be monitored closely and provided with both special and routine care services.

BAHAMAS PROTOCOL: Follow-up Care of HIV-exposed Infants

- The staff of the HIV/AIDS Centre must be informed of ALL infants delivered to HIV Positive women
- Appointment to the Infectious Disease Paediatric Clinic, for the first Wednesday post-partum, at 9.00 a.m. is given to mother for mother and baby to attend

Session 9 Continuum of Care

- In the Bahamas, mother and infant are visited at home by the Postnatal Home Service Team up to 10 days postpartum. Complications of the Puerperium are assessed for and referral made to the appropriate agencies.
- During the Paediatric Clinic visits physical assessment, growth, development and anthropometrics measurements as well as DNA PCR testing and CBC differential SMAC 25 are carried out at the following ages:
 - Birth
 - 1 month
 - 2 months

BAHAMAS PROTOCOL: Follow-up Care of HIV-exposed Infants (2)

- All babies born to HIV infected women, whether treated with antiretroviral or not, must have blood drawn for HIV 1 DNA PCR and CBC differentials during clinic visits at the following ages:
 - Birth
 - 4-6 weeks
 - 2 months
- At 4-6 weeks postpartum physical examination and laboratory testing CBC with differentials, SMAC 25, CD4 and viral load are done

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- HIV exposed infants are treated with HAART per guidelines and followed up at the Paediatric Infectious Disease Clinic monthly.

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**BAHAMAS PROTOCOL:
Follow-up Care Testing of
HIV-exposed Infants**

- The infant is considered HIV negative at 1-2 months of age after 2 or more consecutive negative DNA PCR results, done at monthly intervals
- An appointment is given to return at 18 months for an ELISA test to confirm the child's own antibodies are HIV negative
 - Also completes a quality of life assessment
- If the ELISA is negative, the infant is officially discharged from the Paediatric Infectious Disease Clinic

Session 9: Continuum of Care

- For countries like the Bahamas with access to virologic testing of HIV, tests like DNA PCR can be used to definitively diagnose HIV in a child less than 18 months of age.
- Antibody tests such as the ELISA can give false positive results because they will be detecting a mother's antibodies to HIV infection and not the child's. A mother's antibodies can remain in the child's body up until 18 months of age. This is why an ELISA test is recommended at 18 months to reconfirm a child's status.

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**BAHAMAS PROTOCOL:
Follow-up Care Testing of
HIV-exposed Infants (2)**

- Infants are diagnosed HIV positive after 2 consecutive positive HIV-1 DNA PCR
- Infants who test HIV-1 DNA PCR POSITIVE at baseline testing, are seen as soon as possible.
- Visit includes:
 - a physical exam
 - repeat HIV-1 DNA PCR (for confirmation)
 - CBC with Differential and SMAC 25
 - CD4 and Viral Load are required in anticipation of HAART initiation

Session 9: Continuum of Care

- The confirmation of an HIV-positive diagnosis in an infant or child is difficult for the parents. Healthcare workers should discuss the diagnosis compassionately and confidentially, and offer information about services available for the child.
- All confirmed HIV positive infants are treated with HAART.

Slide 27

Follow-up Care of the Infant

- *Pneumocystis pneumonia* (PCP) is a leading cause of death in HIV-infected infants
- PCP often affects infants between the ages of 3–6 months old, often before they are tested for HIV or have a confirmed HIV diagnosis

Session 9: Continuum of Care

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Follow-up Care of the Infant

Cotrimoxazole prophylaxis should be started at:

- 6 weeks in all HIV-exposed infants and continued until exclusion of HIV-infection
- If infant is positive for HIV, continue cotrimoxazole prophylaxis

Session 9: Continuum of Care

- Cotrimoxazole prophylaxis should be started at:
- 6 weeks in all HIV exposed infants and continued until exclusion of HIV infection. If infant is positive for HIV continue cotrimoxazole prophylaxis

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PCP Prophylaxis for HIV-exposed Infants

- Drug regimen: TMP-SMX
- For HIV-Exposed infants:
 - Start at 6 weeks of age and continued until HIV infection is ruled out
- For HIV-positive infants:
 - Less than 12 months, regardless of symptoms or CD4+ percentage or count, start!
 - Continue in infants over age 12 months if:
 - Child is symptomatic
 - Child has AIDS
 - Child is asymptomatic but CD4+ <20%
 - Child has had a prior episode of PCP

Session 9: Continuum of Care

- Side effects and adverse events that would warrant stopping cotrimoxazole prophylaxis are similar to adults. See handout for more information.

Slide 30

Baby Care: Discharge Planning

- ARV prophylaxis for HIV exposed infants:
 - Develop a drug schedule in consultation with mother
 - Teach mother to administer medicine(s) before discharge
 - Supply with equipment to administer ARVs
- Provide follow up schedule for infant
- Reassure the mother she can adequately care for her infant.
- Help mother identify a support network

Session 9: Continuum of Care

BAHAMAS PROTOCOL: Well Child Care

- Both negative and positive infants will continue to attend the community health clinics for ongoing maternal and child health services:
 - physical review
 - immunization
 - monitoring of nutritional status
 - growth and development appraisals
 - health promotion, education and parental counselling

Session 1: Continuum of Care

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Well Child Care for HIV- exposed Infant

- Routine well child care
 - Immunizations as per guidelines
 - Assess for signs and symptoms of HIV infection
 - FTT, hepato-splenomegaly, adenopathy, recurrent infections, skin manifestations
- PCP prophylaxis with TMP-SMX (Cotrimoxazole, Septra, Bactrim) as per guidelines

Session 2: Continuum of Care

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Care Guidelines for HIV Exposed Infant

Age	Immunisation	Additional lab tests	Comments/participatory guidance
Birth-	Hep B #1	1st HIV DNA PCR test. As appropriate: VDRL CBC with diff	<p>Consider before injection: Review ARV administration x 1 week, water feeding (BME with cup of exclusive BF) before discharge.</p> <p>Assure: follow up appointment for baby.</p>
4-6 weeks		2nd HIV DNA PCR test CBC with diff	<p>Start PCP prophylaxis with Cotrimoxazole 5mg/kg/day. See Handout 9.6</p>
2 months	Hep B#2 DPT 1 PCV 1 Hib 1	3rd HIV DNA PCR test. As appropriate: VDRL CBC with diff	<p>DNA PCR + (PRESUMED) (HIV) (PTE). Repeat to confirm. Stage disease and refer for care. DNA PCR neg. Monitor and repeat at 4-6 months of age. Uninfected: If no additional risk from BF, stop cotrimoxazole and discharge to primary care. Head circumference and physical exam to isolate growth parameters. At all visits, be alert to GDS that may increase suspicion of HIV: slow growth and development, FTT, Hepatomegaly, diffuse adenopathy, loss of milestones, recurrent fev, adenoid infections. Infants with AIDS defining clinical conditions at any point need referral for care. Start vitamin supplementation.</p>
18 mos		HIV antibody test for exposed DNA PCR negative child, maternal serostatus babies	<p>Positive: immunize. Refer for care.</p> <p>Negative: not indicated. Routine well child care.</p>

Care of the Infant

SIGNS OR CONDITIONS SUGGESTIVE OF HIV INFECTION IN CHILDREN	
<p>Common in HIV-infected children and Common in ill, uninfected children</p>	<ul style="list-style-type: none"> • Chronic, recurrent otitis with ear discharge • Persistent or recurrent diarrhea • Failure to thrive
<p>Common in HIV-infected children, but uncommon in HIV-uninfected children</p>	<ul style="list-style-type: none"> • Severe bacterial infections, particularly if recurrent • Persistent or recurrent oral thrush • Chronic parotitis • Generalized persistent non-inguinal lymphadenopathy • Hepatosplenomegaly • Persistent and/or recurrent fever • Neurologic dysfunction • Herpes zoster (shingles), single ophthalmic • Persistent generalized dermatitis unresponsive to treatment
<p>Very specific to HIV infection:</p>	<ul style="list-style-type: none"> • Pneumocystis carinii pneumonia • Oropharyngeal candidiasis • Lymphoid interstitial pneumonitis • Herpes zoster (shingles) with multi-dermatomal involvement • Kaposi's sarcoma • Loss of developmental milestones

Screening, Prevention & Treatment of HIV-Related Conditions

- All healthcare workers caring for mothers with HIV need to be able to recognize the early signs and symptoms of HIV-related conditions and opportunistic infections even if they will not be treating them
- Healthcare workers need to know what questions to ask mothers about possible symptoms experienced by their partners and families members

Session 9: Continuum of Care



Handout 9.2

RECOMMENDATIONS FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP) PROPHYLAXIS IN HIV-EXPOSED INFANTS	
Category	Recommendation
HIV exposed infants:	<ul style="list-style-type: none"> • HIV-exposed infants starting at 6 weeks of age and continued until HIV infection is ruled out.
HIV infected infants	<ul style="list-style-type: none"> • HIV-infected infants under age 12 months regardless of symptoms or CD4+ percentage or count. • HIV-infected infants over age 12 months: <ol style="list-style-type: none"> 1. Child is symptomatic 2. Child has AIDS 3. Child is asymptomatic but CD4+ <20% 4. Child has had a prior episode of PCP.
Drug regimen: TMP-SMX (Co-Trimoxazole, Bactim, Septra)	<ul style="list-style-type: none"> • TMP-SMX, 5mg/kg/day of the TMP component administered orally in divided doses twice daily and administered seven days per week; OR • TMP-SMX, 5mg/kg/day of the TMP component administered orally divided twice daily and administered three times per week on alternate days (e.g. Monday-Wednesday-Friday); OR • TMP-SMX, 5mg/kg/day of the TMP component administered orally in divided doses twice daily and administered three times per week on consecutive days (e.g. Monday-Tuesday-Wednesday); OR • TMP-SMX, 5mg/kg/day of the TMP component administered orally as a single daily dose and administered three times per week on consecutive days (e.g. Monday-Tuesday-Wednesday)
Adverse events that would require discontinuation of prophylaxis	<ul style="list-style-type: none"> • Severe cutaneous reaction such as fixed drug reaction or Stevens-Johnson Syndrome, • Renal and/or hepatic insufficiency <p>Severe haematologic toxicity.</p>



Handout 9.3

SIGNS OR CONDITIONS SUGGESTIVE OF HIV INFECTION IN CHILDREN

<p>Common in HIV-infected children and</p> <p>Common in ill, uninfected children</p>	<ul style="list-style-type: none">• Chronic, recurrent otitis with ear discharge• Persistent or recurrent diarrhoea• Failure to thrive
<p>Common in HIV-infected children,</p> <p>but</p> <p>Uncommon in uninfected children:</p>	<ul style="list-style-type: none">• Severe bacterial infections, particularly if recurrent• Persistent or recurrent oral thrush• Chronic parotitis• Generalized persistent non-inguinal lymphadenopathy• Hepatosplenomegaly• Persistent and/or recurrent fever• Neurologic dysfunction• Herpes zoster (shingles), single dermatome• Persistent generalized dermatitis unresponsive to treatment
<p>Very specific to HIV infection:</p>	<ul style="list-style-type: none">• <i>Pneumocystis carinii pneumonia</i>• Oesophageal candidiasis• Lymphoid interstitial pneumonitis• Herpes zoster (shingles) with multi-dermatomal involvement.• Kaposi's sarcoma• Loss of developmental milestones



Handout 9.4

Care Guidelines for an HIV-Exposed Infant

Age	Immunization	Additional lab tests	Comments/anticipatory guidance
Birth		1 st HIV DNA PCR test CBC with diff	Review: ARV administration, safer feeding practices (BMS with cup) before discharge Assure: follow up appointment for baby
4 weeks		2 nd HIV DNA PCR test CBC with diff, AST,ALT	Ensure adherence counselling to ARV
6 weeks			Discontinue ARV prophylaxis, start PCP prophylaxis with cotrimoxazole
2 months	1 st Hep B, DPT, IPV, & HIB	3 rd HIV DNA PCR test CBC with diff AST, ALT	DNA PCR (confirmed positive) PRESUMED INFECTED. DNA PCR (confirmed negative) <ul style="list-style-type: none">• perform an ELISA and test at 18 months• complete physical exam• discharge to primary care DNA PCR (confirmed negative) infant are referred for follow up according to National Guidelines, e.g. Immunization, basic coverage, developmental milestones achieved
18 months		HIV Antibody test for exposed DNA PCR negative child.	Quality of Life Assessment conducted at 18 months.

Children with HIV exposed to measles should receive serum immune globulin within 4 days of exposure if possible.

Recognizing Opportunistic Infections

GROUP DISCUSSION
Refer to Handout 9.5

Session 9: Opportunistic Infections

Recognizing Opportunistic Infections

- As immune function weakens, a person infected with HIV may develop HIV-related conditions and opportunistic infections including:
 - Tuberculosis (TB)
 - Pneumocystis pneumonia (PCP)
 - Candidiasis
 - Herpes zoster
 - Kaposi's sarcoma
 - Diarrhoea
 - Cryptococcal meningitis

Session 9: Opportunistic Infections

Role of the Healthcare Worker

- Should understand when and how to refer pregnant women for ARV treatment
- Be able to recognize common HIV-related conditions in pregnancy, and common HIV-related conditions in adults and children
- Establish effective communication and links between PMTCT programmes and centres for HIV support, care and treatment
- Advocate for change within PMTCT programmes to better meet the needs of families

Session 9: Opportunistic Infections

Role of the Healthcare Worker (2)

- Healthcare workers should be aware that worsening of symptoms or occurrence of some opportunistic infections and symptoms during the first three months after starting ARV therapy may be caused by **Immune Reconstitution Inflammatory Syndrome (IRIS)** rather than clinical treatment failure.

Immune Reconstitution Inflammatory Syndrome (IRIS)

- An inflammatory response to a previously undetected infection that becomes reactivated when a client is started on ARV therapy. IRIS is rare but usually occurs a few weeks after starting ARV therapy in a client who was severely ill when started on treatment. IRIS does *not* mean that a client has failed treatment. The infection, usually an OI, should be treated according to national guidelines and the ARV therapy should be continued.



Handout 9.5

Clinical signs and symptoms of common opportunistic infections	
Tuberculosis	<ul style="list-style-type: none">▪ Persistent (more than 2 weeks), productive cough (especially blood streaked); weight loss, night sweats, and fever. <p>Note: TB is among the most common opportunistic infections. It is common to see TB in mothers attending ANC clinics. A person infected with HIV is 10 times more likely to develop TB than a person who is HIV-negative</p>
PCP	<ul style="list-style-type: none">▪ Severe shortness of breath, non-productive cough, fever, chills, fatigue
Candidiasis	<ul style="list-style-type: none">▪ Oral (thrush)—creamy white patches on a red base on posterior pharynx▪ Oesophageal—difficulty swallowing or painful swallowing found in advanced stages of HIV/AIDS
Herpes zoster	<ul style="list-style-type: none">▪ Starts with acute sensitivity in a band-like region of the skin on one side of the trunk, head or neck, one arm or thigh followed by bumpy reddish rash in the same band-like pattern. Rash progresses and can be painful with a burning or itching sensation. The rash appears as vesiculated blisters on a red base.
Toxoplasmosis	<ul style="list-style-type: none">▪ Dull, constant headache, fever, visual changes or other focal neurologic symptoms (numbness, weakness, gait disturbances) confusion, or disorientation. Seizures may occur. Caregivers may report subtle alterations in mental status or mood
Kaposi's sarcoma	<ul style="list-style-type: none">▪ Pink-to-purple spots or nodules on the skin surface or in the mouth
Cryptococcal meningitis	<ul style="list-style-type: none">▪ Presents as severe headache with fever. Patient may report fatigue or memory problems and may also complain of nausea or blurred vision. Family members may report personality changes▪

Recognizing Opportunistic Infections

SMALL GROUP ACTIVITY Common HIV-related Conditions in Women: Clinical Scenarios

Continuum of Care

all

Exercise 9.2 Common HIV-related conditions in women: clinical scenarios

1. Mary was diagnosed with HIV last year. She comes to the clinic very infrequently and takes no medications. Mary states she feels “great” most of the time. Her last visit was four months ago. Today she has arrived feeling short of breath. She says that work has been busy and she has been feeling more and more tired. She reports having had a dry cough for three weeks now and that during the last few days, she suspected that she had a fever. She denies exposure to anyone with tuberculosis.
2. Amanda, who is infected with HIV, is noticeably ill in the waiting room of your antenatal clinic. She is coughing and appears very thin. You immediately bring her to an exam room with an open window. Upon examination, you hear congestion in her lungs. She has lost 3kg since her last visit 3 months ago. She says that she coughs constantly, and that sometimes she coughs up “material” that is dark reddish brown.
3. June, who is in her second trimester of pregnancy, has arrived at the local health clinic with complaints of mild vaginal irritation and odor. On examination, she has a thin adherent milky discharge around her vagina and no lower abdominal pain or tenderness on palpation. She has had these symptoms for more about one month. She reports using condoms every time she has sex because she is HIV-positive. She reports douching after vaginal intercourse.
4. Joan arrives for her antenatal appointment. She is 3 months pregnant. On questioning, she says she only has sex with her husband, who works in a diamond mine. He is only home once a year. They do not use protection because they are both already infected with HIV and they wanted to become pregnant. The last time they had sex, Joan says the intercourse was painful. On speculum exam, you observe a red cervix with a yellowish to green discharge from the os. She does not report any lower abdominal pain.



Handout 9.6

Exercise 9.2 Common HIV-related conditions in women:

Clinical scenarios:

1. Mary was diagnosed with HIV last year. She comes to the clinic very infrequently and takes no medications. Mary states she feels “great” most of the time. Her last visit was four months ago. Today she has arrived feeling short of breath. She says that work has been busy and she has been feeling more and more tired. She reports having had a dry cough for three weeks now and that during the last few days, she suspected that she had a fever. She denies exposure to anyone with tuberculosis.
2. Amanda, who is infected with HIV, is noticeably ill in the waiting room of your antenatal clinic. She is coughing and appears very thin. You immediately bring her to an exam room with an open window. Upon examination, you hear congestion in her lungs. She has lost 3kg since her last visit 3 months ago. She says that she coughs constantly, and that sometimes she coughs up “material” that is dark reddish brown.
3. June, who is in her second trimester of pregnancy, has arrived at the local health clinic with complaints of mild vaginal irritation and odor. On examination, she has a thin adherent milky discharge around her vagina and no lower abdominal pain or tenderness on palpation. She has had these symptoms for more about one month. She reports using condoms every time she has sex because she is HIV-positive. She reports douching after vaginal intercourse.
4. Joan arrives for her antenatal appointment. She is 3 months pregnant. On questioning, she says she only has sex with her husband, who works in a diamond mine. He is only home once a year. They do not use protection because they are both already infected with HIV and they wanted to become pregnant. The last time they had sex, Joan says the intercourse was painful. On speculum exam, you observe a red cervix with a yellowish to green discharge from the os. She does not report any lower abdominal pain

Comprehensive Management of HIV Infection in Infants and Children

Session 2 | Continuum of Care

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Recognizing HIV Infection in Infants and Children

- The identification and follow-up of infants born to HIV-infected mothers are a critical first step toward diagnosing HIV infection in children
- All infants who are known or suspected to be exposed to HIV should be monitored closely

Session 2 | Continuum of Care

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HIV Infection in Infants and Children

- The immune system of a young child is immature. If an infant has been recently infected with HIV during labour and delivery, the infant's viral load is usually very high. The combination of an immature immune system with a high viral load can be very dangerous for HIV-infected children.
- Some HIV-infected children will already be critically ill when they present for care in the MCH setting. These children may be diagnosed with HIV based on clinical assessment or HIV testing. Antibody tests, such as rapid tests or ELISA, are difficult to interpret when the child is less than 18 months old. Antibody tests can give false positive results because they will be detecting a mother's antibodies to HIV infection and not the child's. A mother's antibodies can remain in the child's body up until 18 months of age. For countries with access to virologic testing of HIV, tests like PCR, can be used to definitively diagnose HIV in a child less than 18 months of age.

Slide 43

Recognizing HIV Infection in Infants and Children (2)

- Early recognition of HIV-related conditions in children may help avoid serious outcomes
- Recognizing symptoms of HIV can help mothers access early treatment for their infants
- Growth failure is one of the key presentations of HIV infection in children
- If one child in a family shows signs and symptoms of HIV infection, all siblings need to be evaluated

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Risk factors for and symptoms of HIV infection in infants/children

- Healthcare workers should teach mothers and other caregivers to:
 - Identify risk factors for HIV infection
 - Recognize early signs and symptoms of HIV-related conditions
 - Seek early care for the child

- Healthcare workers should review a mother’s medical history to identify risk factors that may raise a suspicion that a child has been exposed to HIV. Risk factors in a mother’s medical history include:
 - Unknown HIV status
 - Overt signs and symptoms of HIV infection
 - Presence of an STI

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Slide 45

Risk factors for and symptoms of HIV infection in infants/children (2)

Mother’s History	Infant/child
Unknown HIV status	Born prematurely
Overt signs and symptoms of advanced HIV/AIDS	Low birth weight
	HIV-infected sibling
Significant history of sexually-transmitted infections (STIs)	Oral thrush and oral ulcers
Multiple sex partners with unknown HIV status	Breastfed

Session 9: Continuum of Care

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Common Signs and Symptoms of HIV infection in Children

- Low weight and/or growth failure
- Pneumonia, including PCP
- Oral candidiasis (thrush) after 6 weeks of age
- Lymphadenopathy
- Parotid gland swelling
- Recurrent ear infections
- Persistent diarrhoea
- TB

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- Interventions to relieve symptoms, such as oral rehydration for acute diarrhoea, nutritional interventions to promote weight gain, cotrimoxazole prophylaxis and screening for TB, are important strategies for improving the health of infants who are suspected to be HIV-infected.

Common signs and symptoms of HIV infection in Children (2)

GROUP DISCUSSION
Refer to Handout 9.7

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Growth Failure

- Poor growth is reported in as many of 50% of HIV-infected children
- Growth failure and malnutrition observed in children who are HIV-infected is due to several factors:
 - Decreased intake due to oral thrush or painful swallowing, or to nausea associated with ARV medications
 - Increased metabolic activity in a child fighting HIV infection and other common illnesses of childhood
 - Decreased absorption of nutrients due to side effects and toxicities of ARV medications

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- Growth failure is a persistent and unexplained decline in weight and the speed of growth despite adequate nutrition. Nutritional status also has a direct effect on the survival of the HIV-infected child.
- Infants who fail to grow require special attention. At every visit, weigh the child and compare to their growth chart. If the child is not growing well, assess feeding and for medical causes.

Care of the HIV Infected Infant

- All children with confirmed or presumptive HIV infection should be referred to the HIV/AIDS Centre
- Healthcare workers in MCH must monitor HIV-infected infants and children for symptoms opportunistic infections

Session 9: Continuum of Care

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Care of the HIV Infected Infant (2)

- There is very strong evidence of the clinical benefit of ARV therapy in infants and children
- The goals of ARV therapy are the similar to those of adults:
 - To promote or restore normal growth and development
 - To improve a child's quality of life
 - To prolong their survival

Session 9: Continuum of Care

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- ARVs, like all drugs, work differently in children. Children have different body composition, renal excretion, liver metabolism, and gastrointestinal function. These differences mean that the dosing of ARVs for children is more complex and will change as they grow. Dose adjustments must be made to avoid under-dosing and the development of resistance

WHO Staging System for HIV Infection in Children

- Clinical Stage I:
 - Asymptomatic
 - Generalized lymphadenopathy
- Clinical Stage II:
 - Unexplained chronic diarrhoea
 - Severe persistent or recurrent candidiasis outside the neonatal period
 - Weight loss or failure to thrive
 - Persistent fever
 - Recurrent severe bacterial infections
- Clinical Stage III:
 - Progressive encephalopathy
 - Malignancy
 - Recurrent septicaemia or meningitis

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Refer to Handout 9.8: WHO recommended clinical criteria for starting ARV therapy in infants and children.

Slide 52

Summary of Care for Children Infected with HIV

- Each health visit should include:
- Counselling the mother and other caregivers on infant feeding, nutrition, and ARV therapy
- Cotrimoxazole prophylaxis in accordance with Bahamas guidelines
- Assessment and appropriate management for common illnesses of childhood
- For HIV-exposed infants, provide HIV testing as indicated in national testing algorithms.

Session 3: Continuum of Care

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Slide 53

Summary of Care for Children Infected with HIV (2)

- Promote health and prevent illness
 - Assess and support the mother’s infant-feeding choice
 - At every visit, weigh the child and compare to their growth chart
 - If the child is not growing well, assess feeding and for medical causes
 - Immunize according to Bahamas national guidelines
 - Provide health education specific to infants age and mother and infant needs

Session 3: Continuum of Care

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- Healthcare workers should assess feeding practices and diet for infants older than 6 months and provide appropriate counselling that considers locally available food, family circumstances, and feeding customs

Slide 54

Mothers and their Children

- Because the health of mother and child are so closely related, assessment of maternal health and nutrition should happen at the same time as assessment of the infant. Appropriate referrals for maternal health care should be made during infant checkups.

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Handout 9.7

Clinical conditions or signs of HIV infection in a child who is HIV-exposed	
Specificity for HIV infection	Signs and conditions
Common in children who are HIV-infected; also seen in ill, children without HIV	<ul style="list-style-type: none">▪ Chronic, recurrent otitis media with discharge▪ Persistent or recurrent diarrhoea▪ Failure to thrive▪ Tuberculosis
Common in children who are HIV-infected; uncommon in children without HIV	<ul style="list-style-type: none">▪ Severe bacterial infections, particularly if recurrent▪ Persistent or recurrent oral thrush▪ Chronic parotiditis (often painless)▪ Generalized persistent noninguinal lymphadenopathy in two or more sites▪ Hepatosplenomegaly▪ Persistent or recurrent fever▪ Neurologic dysfunction▪ Herpes zoster (shingles) (single dermatome)▪ Persistent generalized dermatitis unresponsive to treatment
Only seen in children with HIV infection	<ul style="list-style-type: none">▪ <i>Pneumocystis</i> pneumonia (PCP)▪ Oesophageal candidiasis▪ Lymphoid interstitial pneumonitis (LIP)▪ Herpes zoster (shingles) with multidermatomal involvement▪ Kaposi's sarcoma



Handout 9.8

Summary of WHO recommended criteria for starting ARV therapy in infants and children:	
	WHO Clinical Stage 4 Treat all (regardless of laboratory values like %CD4)
	WHO Clinical Stage 3 Treat all However, in children with TB, lymphoid interstitial pneumonitis, or oral hairy leukoplakia or thrombocytopenia, use CD4 count to guide decision.
	WHO Clinical Stage 3 For children >18 months ¹ treatment should be guided by laboratory values
	WHO Clinical Stage 2 treatment should be guided by laboratory values
	WHO Clinical Stage 1 treatment should be guided by laboratory values

Key Points

- MCH workers have a vital role in ensuring that PMTCT programmes involve strategies to provide treatment, care, and support of mothers infected with HIV, their infants, and their families
- Post-partum care for HIV-positive mothers should include physical assessment, family planning, support for infant feeding choice, psychosocial support, and referral for HIV/AIDS treatment
- Assessment, prophylaxis and treatment of HIV-related conditions and opportunistic infections in HIV-infected women and families are important aspects of comprehensive care in the postpartum period

Section 9: Continuum of Care

- ARV drugs do not cure HIV. ARVs decrease HIV replication, restore the immune system and slow disease progression.
- ARV drugs must be taken every day at the same time; complete adherence is necessary for the medications to work effectively.

Key Points (2)

- Health Care Workers should educate clients to recognize early signs and symptoms of HIV disease
- Specific postpartum care strategies exist for HIV-exposed infants
- PMTCT is an entry point into prevention to care continuum. Links to other HIV/AIDS services and programs should be developed and strengthened.
- Referral networks can assist in a comprehensive care system

Section 9: Continuum of Care

Appendix 9-A

Monitoring Growth, Nutrition, and Development of HIV-exposed Infants and Children

Role of the healthcare worker in growth, nutritional, and developmental monitoring

- Weigh and measure child and plot results on a national growth curve and/or WHO Growth Curves.
- Measure head circumference for children 2 years and under.
- Provide health education on the importance of growth monitoring and good nutrition.
- Ask about the mother's resources and constraints.
 - "How does your family support itself?"
 - "Do you have enough money to buy food for your family?"
- Ask mother about her child's eating habits.
 - What did your child eat/drink today?
 - How about yesterday?
- Counsel and educate mother about the child's nutritional needs.
- If child is stunted or wasted, explore with the mother possible causes of growth failure. Discuss management or refer appropriately.
- Educate mother on hygienic food preparation.
- Discuss the child's developmental needs: enquire about age-appropriate play and specific development milestones
- If you suspect a problem, refer for developmental testing according to national policy and availability.

1. Growth monitoring

Growth monitoring is regular growth surveillance. Growth surveillance is monitored by regular anthropometric monitoring. Anthropometric measures for children include the measurement of weight and height. Children under two years of age should also have their head circumference measured and monitored. Anthropometrics are interpreted by using age and gender specific growth standards. Growth monitoring standards include growth curves that have been developed nationally or globally. WHO has created comprehensive growth standards that are available at <http://www.who.int/childgrowth/en/>. It is important to train all HCWs working with children, particularly those who may be infected or exposed to HIV, about the proper use and interpretation of tools to measure growth.

Growth Indicators

- Weight-for-age is a measure of weight according to age. This measure is mainly used during clinic visits, since it is a good way of assessing the nutritional evolution of a child over time.
- Weight-for-length/height is a measure of weight according to the length or height. This is a useful measure of acute malnutrition.
- Height-for-age is a measure of height according to age. This is useful for detecting chronic malnutrition and helps identify stunted children.
- Head circumference is the measured distance around the widest part of the skull. This is a useful measure of brain growth during the first 2 years.

Defining indicators of growth status

Underweight

Weight-for-age is below the median minus 2 standard deviations or less than the 3rd percentile of the expected weight-for-age.

Stunting

Length/Height-for-age is below the median minus 2 standard deviations or less than the 3rd percentile of the expected length/height-for-age.

Wasting

Weight -for-length/height is below the median minus 2 standard deviations or less than the 3rd percentile of the expected weight for length/height.

Severe wasting

Weight-for-length/height is below the median minus 3 standard deviations

Overweight

Weight-for-length/height is above the median plus 2 standard deviations or greater than the 97th percentile of the expected weight-for-length/height.

2. Importance of nutritional assessment and support

In infants and children with HIV infection, malnutrition further impairs immune function. Therefore, an early nutritional assessment should be a fundamental part of the care of infants and children who are HIV-exposed or HIV-infected. A nutritional assessment provides the opportunity to intervene and prevent growth failure and wasting, while maximizing infant and child growth and development.

- If the infant or child's HIV status is unknown, conducting a nutritional assessment is important as a diagnostic tool.
- HIV places increased metabolic demands upon a growing child. If a child is experiencing growth failure it is recommended that caloric intake be increased using locally available and affordable foods.
- ARV drugs may have side effects that affect food intake and nutrition.

3. Assessment of infant and child development

Infants and children who are infected with HIV should have serial standardized assessments of their neurological and developmental status. The type of assessment performed will be determined by what scale or test is in use in country. Development can also be preliminarily assessed by healthcare workers using behavioural observation of the child and interaction with parents as well as asking about or observing developmental milestones. Developmental abnormalities are common and can appear as developmental delays as well as cognitive deficits, behavioural or psychiatric problems, or poor school performance in older children.

Monitoring Growth, Nutrition, and Development of HIV-exposed infants and children (Continued)

Selected developmental milestones by age

Age	Milestones and Assessments
Week 1	<ul style="list-style-type: none"> • Baby responds to sound by blinking or crying • Fixates on human face • Follows with eyes • Responds to parents' voice • Moves all extremities
1 month	<ul style="list-style-type: none"> • Lifts head momentarily when prone • Can sleep 3-4 hours • When crying can be consoled by speak or being held
2 months	<ul style="list-style-type: none"> • Baby coos and vocalizes • Attentive to voice, visual stimuli • Smiles responsively • Lifts head, neck and upper chest with support on forearms
4 months	<ul style="list-style-type: none"> • Babbles, smiles, laughs, and squeals • Holds head upright • Rolls over • Opens hands • Grasps rattle • Self-comforts
6 months	<ul style="list-style-type: none"> • Says "dada" or "baba" • No head lag when pulling to sit • Bears weight when placed • Starts to self-feed • Interest in toys
9 months	<ul style="list-style-type: none"> • Responds to own name • Understands a few words • Creeps and crawls • Pokes with index finger • Plays peek-a-boo • May show anxiety with strangers
1 year	<ul style="list-style-type: none"> • Pulls to stand • May take steps alone • Pincer grasp • Says 1-3 words • Waves "bye-bye" • Imitates vocalization
15 months	<ul style="list-style-type: none"> • Says 3-10 words • Points to body parts • Understands simple commands • Feeds self with fingers • Listens to story • Communicates wants by pointing or grunting
18 months	<ul style="list-style-type: none"> • Walks quickly or runs stiffly • Throws ball • Says 15-20 words • Talks using 2-word phrases • Uses spoon and cup

	<ul style="list-style-type: none"> • Looks at pictures and names objects • Shows affection • Follows simple direction
2 years	<ul style="list-style-type: none"> • Goes up and down stairs • Kicks ball • Says at least 20 words • Makes horizontal and circular strokes with crayon • Imitates adults
3 years	<ul style="list-style-type: none"> • Jumps in place • Knows name, age, gender • Has self-care skills • Shows early imaginative behaviour
4 years	<ul style="list-style-type: none"> • Sings songs • Draws person with 3 parts • Talks about daily activities and experiences • Hops and jumps on one foot
5 years	<ul style="list-style-type: none"> • Dresses self without help • Can count on fingers • Recognizes letters and can draw some • Plays make believe
6 – 7 years	<p>Assess school performance</p> <ul style="list-style-type: none"> • When he/she plays with other children, can they keep up? • Is he/she able to follow rules at school? • What does teacher say about progress? • Any trouble completing homework?
8 years	<p>Assess school performance</p> <ul style="list-style-type: none"> • Is he/she reading and doing maths at grade level? • Is he/she proud of achievements? • Does child talk about what happens in school?
9-10 years	<p>Assess school performance and social development</p> <ul style="list-style-type: none"> • Does child have interests or talents that they would like to develop? • Reading and doing maths at grade level? • Where and how is homework done? • Is child comfortable when healthcare worker speaks to them alone?
Early adolescence	<p>Assess social and emotional development</p> <ul style="list-style-type: none"> • What do you do for fun? • Who is your best friend? • What do you do when you are feeling down or depressed? <p>Assess relationships and sexuality</p> <ul style="list-style-type: none"> • Have you started dating anyone? • What questions do you have about sex? • Have you ever had sex? <p>Assess family functioning</p> <ul style="list-style-type: none"> • How do you get along with your family? • What would you change about your family if you could

Adapted from: Adapted from: World Health Organization. Child Growth Standards 2006. Available at: <http://www.who.int/hiv/pub/guidelines/en/> and National Center for Education in Maternal and Child Health. (2002) *Bright Futures, Guidelines for Health Supervision of Infants, Children, and Adolescents* (2nd ed. rev.) *Pocket Guide*, available at: <http://www.brightfutures.org/pocket/index.html>

Module 10 Healthcare Worker Safety



Total Module Time: 150 minutes (2 hours, 30 minutes)

Objectives: By the end of this session, participants will be able to:

- Describe strategies for preventing HIV transmission in the healthcare setting
- Define Universal Precautions (UP) in the context of PMTCT
- Use guidelines to identify HIV exposures requiring Post-Exposure Prophylaxis (PEP)
- Identify measures to minimize stress and support healthcare workers and caregivers

Healthcare Worker Safety

Learning Objectives

- Describe strategies for preventing HIV transmission in the healthcare setting
- Define Universal Precautions (UP) in the context of PMTCT
- Use guidelines to identify HIV exposures requiring Post-Exposure Prophylaxis (PEP)
- Identify measures to minimize stress and support healthcare workers and caregivers

Module 1.0: HCW Safety

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HIV Infection

- Bloodborne pathogens are carried in the blood.
 - Viruses
 - Bacteria
 - Other disease-causing microorganisms
- In the healthcare setting, blood may be transmitted:
 - Patient to HCW
 - HCW to patient
 - Patient to patient
- Transmission can occur through contact with blood or body fluids, either by
 - Direct contact with an open wound
 - Needle-stick injury

Module 1.0: HCW Safety

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- Blood is the primary fluid associated with HIV transmission in the healthcare setting
- Small quantities of blood may be present in other body fluids
- In practice, some of the ways transmission occurs are during
 - Intravenous injections
 - Blood donations
 - Dialysis
 - Transfusions
- Using infection control measures, including adherence to standard precautions and ongoing employee education in infection prevention, can prevent transmission of infectious agents in the healthcare setting

<p>Slide 4</p>	<p>Creating a Safe Work Environment</p> <ul style="list-style-type: none"> • Managing the work environment • Practicing Universal Precautions • Providing ongoing infection prevention education for employees <p><small>Module 1: HCW Safety</small></p>	<ul style="list-style-type: none"> • UP started in 1983, became more organized and outlined in 1987
<p>Slide 5</p>	<p>Managing the Work Environment</p> <ul style="list-style-type: none"> • Policies and safety measures to support the establishment of a facility-wide safe work environment <ul style="list-style-type: none"> - Continually assess risks in the work setting - Standards and protocols of infection control, worker safety, risk reduction and first aid - Appropriate staffing levels - Develop, display and enforce PEP - Staff support to reduce stress and burnout - Adequate supplies - Puncture resistant sharps containers <p><small>Module 1: HCW Safety</small></p>	<ul style="list-style-type: none"> • Proper infection prevention can create a safe working environment that protects HCWs • Adherence to safe work practices can reduce worker stress and fear of HIV transmission in the work place • Supervisors are normally responsible for managing the work environment, but they rely on ongoing feedback from the HCWs to know if there are issues that need to be addressed to assure staff safety
<p>Slide 6</p>	<p>Universal Precautions</p> <ul style="list-style-type: none"> • Handwashing • Use of personal protective equipment • Safe handling and disposal of sharps • Decontamination of patient-centered equipment and linen, environmental control • Apply to all patients, regardless of diagnosis <p><small>Module 1: HCW Safety</small></p>	<ul style="list-style-type: none"> • The level of precaution used depends on the procedure involved – not on the patient’s diagnosis

Hand Washing

- Washing procedure
 - Soap and water
 - Use friction
 - Under running water for at least 15 seconds
- Wash before and after all procedures



Module 1: H/W Safety

- Alcohol-based hand rubs for routine decontamination and hand cleansing
- Sing the “Happy Birthday” song to wash for enough time
- **Wash before:**
- Putting on gloves; examining a patient; performing any procedure that involves contact with blood or body fluids; handling contaminated items such as dressings and used instruments; eating
- **Wash after:**
- Removing gloves; examining a patient; performing any procedure that involves contact with blood or body fluids; handling contaminated items such as dressings and used instruments; making contact with body fluids, mucous membranes, non-intact skin, or wound dressings; handling soiled instruments and other items; using a toilet
 - It may be necessary to wash hands between tasks and procedures on the same patient to prevent cross-contamination of different body sites

Personal Protective Equipment

- Use the following equipment when possible:
 - Gloves
 - Aprons and gowns
 - Eyewear
 - Footwear
- Personal protective equipment safeguards patients and staff



Module 10: HCW Safety

- Gloves
 - Wear gloves that are the correct size
 - Use water-soluble hand lotions to prevent hands from drying, cracking, and chapping. Avoid oil-based hand lotions or creams because they will damage latex rubber surgical and examination gloves
 - Do not wear rings because they may serve as a breeding ground for bacteria, yeast, and other disease-causing microorganisms and they may puncture or tear gloves
 - Keep fingernails short (less than 3 mm [1/8 inch] beyond the fingertip). Long nails may provide a breeding ground for bacteria, yeast, and other disease-causing microorganisms. Long fingernails are also more likely to puncture gloves
 - Store gloves in a place where they are protected from extreme temperatures, which can damage the gloves

Safe Handling and Disposal of Sharps

- Use sterile syringe and needle for each injection and to reconstitute each unit of medication
- Avoid recapping and other handling of needles
- Collect used syringes and needles at the point of use in a sharps container
- Always point the sharp end away from yourself and others

Module 10: HCW Safety

- If single-use syringes and needles are unavailable, use equipment designed for steam sterilization
- If recapping is necessary, use a single-handed scoop technique
 - Place the needle cap on a firm, flat surface
 - With one hand holding the syringe; use the needle to “scoop” up the cap
 - With the cap now covering the needle tip, turn the syringe upright (vertical) so the needle and syringe are pointing toward the ceiling
 - Use the forefinger and thumb on your other hand to grasp the cap just above its open end and push the cap firmly down onto the hub (the place where the needle joins the syringe under the cap)
- Sharps container should be puncture and leak-proof and can be sealed before completely full
- Completely destroy or bury needles and syringes so people cannot use them and groundwater contamination is prevented
- Pass scalpels and other sharps with the sharp end pointing away from staff; or place the sharp on a table or other flat surface (a receiver) where the receiving person can then pick it up
 - Pick up sharps one at a time and do not pass handfuls of sharp instruments or needles

Decontamination

- **Decontamination**
 - Requires a 10-minute soak in a 0.5% chlorine solution.
 - Kills both hepatitis B and HIV
- **Cleaning**
 - Efficient cleaning with soap and hot water is essential prior to disinfection or sterilization
- **Disinfection**
 - A chemical procedure that eliminates most recognized pathogenic microorganisms
 - Does not destroy all microbial forms (e.g., bacterial spores)
- **Sterilization**
 - Destroys all microorganisms

Module 10: HCW Safety

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- Standard precaution measures are difficult to practice when supplies are low and protective equipment is not available
- Use resources cost-effectively by prioritising the purchase and use of supplies, e.g., if gloves are in short supply, use them for childbirth and suturing instead of routine injections or bed-making
- The most important way to *reduce occupational exposure to HIV* is to decrease contact with blood
- Safety procedures should allow HCW to deliver effective patient care without compromising personal safety

Risk Reduction in the Labour and Delivery Settings

- In labour and delivery settings, HCWs should:
 - Provide appropriate and sensitive care to all women regardless of HIV status
 - Work in a manner that ensures safety and reduces the risk of occupational exposure for themselves and their colleagues

Module 10: HCW Safety

11

Case Study

Reducing HIV Transmission Risk
in Labour and Delivery



Handout 10.1

Case Study: Salma

Part A

Salma arrives at the labour and delivery unit of your local hospital. She hands you her patient held record that identifies her as having received care at the neighbouring ANC clinic. This card is coded to let you know that she is HIV-infected. She explains that her contractions are steady now and about four minutes apart. You perform a vaginal examination and estimate that Salma has at least 2 more hours until delivery. You give her nevirapine prophylaxis at this time.

- 1. What are some precautions that you, as a HCW should take when treating Salma?**
- 2. Should healthcare workers use gloves when caring for patients who are HIV-infected?**
- 3. Does your clinical protocol require gloves in this situation?**
- 4. According to Standard Precautions, would the same gloving requirements apply for all labour and delivery patients, regardless of HIV status?**
- 5. In your facility, are gloves and antiseptics for use in the labour ward in good supply?**
- 6. What do we know about the relationship between MTCT and vaginal examinations for pregnant HIV-infected women?**

Part B

Salma is now fully dilated and ready to deliver. As the head is delivered, you use gauze to carefully free the infant's mouth and nostrils of fluids. Then, with one final push, the infant is delivered completely. You hand the newborn to a gloved assistant, who wipes him dry and continues with neonatal care. Then the placenta is delivered.

- 1. List the protective clothing that would be appropriate in a labour and delivery setting.**
- 2. What do you do with any sharps that are used during this delivery?**
- 3. At your facility, what are the policies for disposing of waste materials?**
- 4. What should be done with the placenta and other contaminated materials?**

Part C

Salma was your 30th delivery in the past 24 hours. You need to get home and tend to your family but your replacement has not yet arrived. You speak with your supervisor and she is able to locate someone else to take your place.

- 1. Why is it important that you not stay and continue to work tonight?**
- 2. In your facility, do you have someone who will help you find staffing relief if needed?**

HCW Risk of Infection

- Risk of transmission varies according to injury
- Common cases of HIV exposure:
 - Injury that breaks the skin with instrument used on infected patient
 - Puncture from a needle
 - Cut from a sharp object
 - Contact with mucous membrane or non-intact skin of infected patient
 - Chapped or abraded skin
 - Skin affected by dermatitis

Module 10: HCW Safety

- Risk of infection from exposure to infected fluids other than blood or injuries that do not cause bleeding are believed to be very low
- Injuries that result in spontaneous bleeding, such as a stick from a large-bore hollow needle, carry a higher risk of infection
- Rates of transmission:
 - HIV: 0.39%
 - HBV: 22-33%
 - HCV: 1.8% risk

Increased Risk

- Unsafe handling of sharps
- Universal Precautions are not followed
- Waste management protocols are inadequate or not consistently implemented
- Protective gear is in short supply
- HIV infection rates are high in the patient population

Module 10: HCW Safety

- The risk of occupational exposure to HIV may be increased in these situations

Bahamian Guidelines: Post Exposure Prophylaxis (PEP)

Immediate action procedure:

1. Immediately after exposure
 - Bleed and wash wound
2. Notify supervisor or nurse-in charge of your area
3. Complete employee accident/incident form
4. Call
 - Surveillance Unit immediately
 - AIDS Research

Module 10: HC/W Safety

- PEP protocol details what steps should be taken following occupational exposure to HIV
1. Immediately after exposure
 - Make wound bleed freely
 - Wash skin thoroughly with povidone iodine 10%
 - Flush eye with running water for 10 minutes
 2. Notify supervisor or nurse-in charge of your area
 3. Complete employee accident/incident form
 - Sign the form
 - Obtain signature of the doctor doing the assessment
 - Return form to your supervisor
 4. Call
 - Surveillance Unit immediately with name and age of client
 - Phone: 502-4737
 - PNO's private line 502-4846
 - AIDS Research: 328-3194 or 356-2893

Quick Exposure Assessment

- **Client's status**
 - Is client known to be HIV positive, and/or Hepatitis B positive?
 - Is client's status unknown
- **Baseline blood samples**
 - HIV Rapid test
 - Hepatitis B (antibody and antigen)
 - VDRL (2 red top tubes)
- **Hepatitis Vaccine**

Module 10: HIV Safety

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- Baseline blood samples needed from affected staff and client with consent
- Arrangements would have been made by Surveillance-S.Dean-AIDS Research, Marva Jervis, or Mrs. Moss-Saunders to have the HIV Quick test done at the Blood bank
- Hepatitis
 - If staff has had 3 doses of hepatitis B. Vaccine, or if tested Hepatitis B positive in the past then no test needed
 - If staff did not have all 3 doses of Hepatitis B, obtain next dose as soon as possible (no need to start over)
 - If staff has had no Hepatitis B Vaccine, and the client is Hepatitis B positive, then prophylaxis with Hepatitis B is needed with Immunoglobulin (HBIG), as well as the usual Hepatitis B vaccine
- Accidents occurring during extended hours and on weekends: These persons will need to be assessed immediately at Accident/Emergency
 - The Duty Sister should be contacted
- Reasonable cost associated with travel (air ticket, transportation) could be reimbursed from local Government, DPH or National Insurance

Family Island Incidents

- Needle stick injury is an Industrial Accident
- Staff need to travel to Nassau as soon as possible after injury
 - Preferably the same day
- Reasonable travel cost could be reimbursed

Module 10: HIV Safety

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Serology Schedule for High Risk Exposures

1. Baseline blood work at time of exposure (HIV, Hepatitis B, RPR)
2. Repeat in 3 months
3. Follow-up at 6 months

MOU001101HIV Safety

Prophylaxis Therapy

- Triple therapy is recommended for 4 to 6 weeks
 - Zidovudine (AZT)
 - 200mg po BID
 - Indinavir (Crixivan)
 - 800mg po TID
 - Lamivudine (3TC)
 - 150mg po BD

MOU001101HIV Safety

- The optimum time to begin therapy is within 2 hours post exposure to known HIV positive blood, must be for at least 20 days
 - An assessment of risk and blood results ideally are needed before starting therapy
- Counselling
 - Pre and post-test counselling are both essential and imperative
 - Should be extended to include family members of the affected staff members

Case Studies

Post-Exposure Prophylaxis

Case Study 1

1. *What steps should be taken immediately?*
2. *You are responsible for counselling the nurse about PEP. What is her approximate risk of acquiring HIV from this exposure? What further questions do you have for her?*

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Case Study 1 (continued)

3. *What are your PEP recommendations for the nurse?*
4. *What additional testing and follow-up care should be performed for the exposed nurse? What additional advice and counselling would you offer?*

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Case Study 2

1. *What would you recommend regarding PEP?*
2. *What other concerns would you address?*

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Case Study 3

1. *What is your next step?*
2. *What questions do you have for her?*
3. *How would you counsel her regarding PEP?*



Handout 10.2

PEP Case Studies

Case study instructions

- Read the case up until the questions
- Spend 5-10 minutes per case discussing the appropriate medical interventions in terms of PEP and follow-up by answering the case study questions
- Move onto the next section, read and answer each set of questions until all three cases have been discussed

Case Study 1:

A nurse sustains a percutaneous (needle stick) injury to her index finger. The source patient is a woman who is at the clinic for her second antenatal care visit and is known to be HIV-infected, having tested positive for HIV at her first visit. Her clinical status and CD4 count have not been established.

1. What steps should be taken immediately?

2. You are responsible for counselling the nurse about PEP. What is her approximate risk of acquiring HIV from this exposure? What further questions do you have for her?

On questioning, the nurse reports that she was wearing gloves when her finger was stuck by a 21-gauge phlebotomy needle that had just been used to draw blood from the vein of the source patient.

She does not know if the needle was visibly bloody at the time she was stuck, and she is not sure if it was a 'deep' stick or not, but she says "it made my finger bleed." She does not think she is pregnant. She has never been tested for HIV but has no reason to believe that she might have HIV infection.

3. What are your PEP recommendations for the nurse?

5. What additional testing and follow-up care should be performed for the exposed nurse? What additional advice and counselling would you offer?

Case Study 2:

A colleague comes to the ER reporting a sexual assault including vaginal penetration. She knows the assailant to be HIV infected. Her PE reveals perineal bruising and a shallow vaginal laceration.

1. What would you recommend regarding PEP?

2. What other concerns would you address?

Case Study 3:

A 23 year old dental assistant is splashed in the eye while cleaning the teeth of a 38 year old man whose HIV status is unknown. She immediately reports to Urgent Care, where you are responsible for her care.

1. What is your next step?

2. What questions do you have for her?

She gives you more details about her exposure:

- She was splashed with “more than just a drop or two” of bloody saliva into the eye; she was not wearing protective eyewear at the time.
- The source patient looks healthy and denies risk factors for HIV, but he comes from a region where the seroprevalence of HIV is estimated to be over 2%.
- He is willing to be tested for HIV; however, rapid testing is not available at your facility, and the results of the HIV test will not be known for at least 24 hours.

3. How would you counsel her regarding PEP?

Slide 25

Care and Support for the HCW

- Burnout and stress are common under stressful working conditions
- Working with HIV-infected mothers and infants can create additional emotional stress
- Burnout is preventable
 - Can be dealt with constructively
- Personal and organisational support are very important

Module 10: HCW Safety

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Slide 26

What Are The Signs And Symptoms Of Stress?

Group Brainstorm

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Physical signs	Emotional Signs	Behaviour signs	Cognitive signs
<ul style="list-style-type: none"> •Insomnia •Muscle pain •Digestive problems •High BP •Headaches •Impotence or reduced sex drive •Nausea, dizziness •Dry mouth, sweating 	<ul style="list-style-type: none"> •Depression •Irritability or anger •Feelings of failure • Loss of humor •Feeling isolated •Mood swings •Worries about physical health 	<ul style="list-style-type: none"> •Increased alcohol or other drugs •No time or energy for family/ social activities •Less care about personal appearance •Clumsiness •Eating too much or too little •Increased absence from work •Less motivated 	<ul style="list-style-type: none"> •Forgetfulness •Difficulty concentrating •Declining job performance

Module 10: HCW Safety

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- Signs and Symptoms of stress can fall into many categories

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Stress at Work

- Taking more days off
- Fighting with co-workers
- Working less efficiently
- Low energy, less motivated
- Irritation with patients

Module 10: HCW Safety

- This is a list of problems that result from high levels of stress

Slide 29

Burnout

- Also known as compassion fatigue
- Extended exposure to stress results in burnout
- Emotional exhaustion
 - Feelings of helplessness, depression, anger and impatience
- Depersonalization
 - Loss of interest in job
 - Increasing cynical view of patients and co-workers
- Decreased productivity

Module 10: HCW Safety

- Burnout is common among HCW working under stressful conditions for extended periods of time
- HCW providing ongoing care to pregnant women who are HIV-infected (or status unknown) and their infants are under more stress and as a result are more vulnerable for burnout

Slide 30

Strategies to Lessen Stress and Burnout

Group Brainstorm

Slide 31

Key Points

- Blood is the primary fluid associated with HIV transmission in the healthcare setting
- Using infection control measures, including adherence to standard precautions and ongoing employee education in infection prevention, can prevent transmission of infectious agents in the healthcare setting
- Universal precautions apply to all patients, regardless of diagnosis

Module 10: HCW Safety

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Key Points (2)

- Short-term use of ARV medications, also known as PEP, reduces the risk of HIV infection after occupational exposure
- Burnout can be caused by prolonged job stress
- Burnout can be managed and the effects minimized by individual and organizational supports

Module 10: HCW Safety

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Module 11 PMTCT Programme Monitoring & Evaluation



Total Module Time: 130 minutes (2 hours, 10 minutes)

Objectives: By the end of this session, participants will be able to:

- Explain the purpose of monitoring and evaluation in the context of PMTCT programmes
- Understand the role of healthcare workers in monitoring PMTCT programmes
- Describe how healthcare facility indicators can be used in programme decision making
- Analyze programme data to evaluate programme effectiveness and revise programme services
- Gain familiarity with PMTCT healthcare facility forms and how to correctly complete these forms

Slide 1

Monitoring and Evaluation of PMTCT Programmes

Slide 2

Learning Objectives

- Explain the purpose of monitoring and evaluation in the context of PMTCT programmes
- Understand the role of healthcare workers in monitoring PMTCT programmes
- Describe how healthcare facility indicators can be used in programme decision making

Module 11: Monitoring & Evaluation

Slide 3

Learning Objectives (2)

- Analyze programme data to evaluate programme effectiveness and revise programme services
- Gain familiarity with PMTCT healthcare facility forms and how to correctly complete these forms

Module 11: Monitoring & Evaluation

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Slide 4

What is Monitoring?

- Monitoring is regular tracking of key programme elements
- Involves routine record-keeping and reporting
- Usually is conducted at health facility

Module 11: Monitoring & Evaluation

Slide 5

What is Evaluation?

- Measures changes in a situation resulting from intervention
- Tells us how the programme is working to cause these changes
- May be conducted at local, regional and national level

Module 11: Monitoring & Evaluation

- Evaluation is assessing the change in *indicator* measurements resulting from an intervention or programme
- A formal evaluation of a PMTCT programme will demonstrate to what extent the programme contributed to changes in the indicators
- Formal evaluations should be conducted periodically to examine changes that occur as the PMTCT programme is being implemented
- This will enable programme staff to identify areas of programme strength and weakness

Slide 6

What are Indicators?

- Indicators are summary measures to describe a situation
- Can be at level of health facility, regional, national, or global
- Health facility indicators help set targets and track progress towards PMTCT goals

Module 11: Monitoring & Evaluation

- Indicators are measures used to track changes in a programme over time
- They provide information on the status of programme activities and targets
- Indicators signal the current situation or status of an intervention

Slide 7

Health Facility Indicators

- Help answer questions such as:
 - Does the PMTCT programme...
 - Run the way we planned?
 - Reach the right people?
 - Require improvement?
 - Are the clients...
 - Benefiting from our services?
 - Receiving interventions?

Module 11: Monitoring & Evaluation

- Information collected at healthcare facilities is essential to monitoring and evaluation. Most of the national and global indicators are reported based on healthcare facility indicators
- Health facility indicators:
 - Facilitate tracking of national PMTCT targets
 - Help identify progress, problems, challenges and solutions in the delivery of PMTCT services
 - Inform the setting and revision of national targets
 - *Example of a healthcare facility indicator:* Percentage of women accepting HIV testing

Slide 8

Health Facility Indicators for PMTCT Programmes

- Examples:
 - Percentage of women starting ANC who receive pre-test counselling
 - Percentage of women starting ANC who receive HIV testing
 - Percentage of women who are HIV-infected who receive their test results and post-test counselling
 - Others???

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National Indicators

- Estimated from the information provided at the local level
- Reflect the goals, objectives, and activities of the national HIV/AIDS programme
- Assess the effectiveness of the national response to MTCT

Module 11: Monitoring & Evaluation

- Example of a national indicator: Percentage of pregnant women in the country that accepted HIV testing

Slide 10

Global Indicators

- Based on national indicators
- Reflect, in a few summary numbers, the current worldwide situation regarding PMTCT efforts
- Provide a picture of how countries, on average, are addressing PMTCT
- Help donors understand how to assess the results of past spending and prioritize future funding

Module 11: Monitoring & Evaluation

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Slide 11



Why is M&E Important?

Why is M&E Important?

- Monitoring and evaluating our PMTCT Programme will help to:
 - Assess programme performance
 - Assess progress being made towards projected goals
 - Detect and correct performance problems
 - Make more efficient use of PMTCT programme resources



Module 11: Monitoring & Evaluation

- PMTCT programme M&E will help:
 - Assess whether the programme is meeting its established targets
 - *Example:* If a national PMTCT programme target is for at least 90% of ANC attendees to be tested for HIV, then the following would be need to be monitored to assess if the target has been met: the percentage of ANC attendees tested for HIV
 - Identify and improve problem areas in a PMTCT programme
 - *Example:* If monitoring data shows that 50% of ANC attendees are tested for HIV (far short of the 90% target), then discussion needs to explore barriers and strategies to address barriers to increase HIV testing
 - Improve efficiency of the use of PMTCT programme resources
 - *Example:* Barriers to the uptake of HIV testing might include: lack of staff to provide pre-test information and/or testing, staff providing the pre-test session are inadequately trained; lack of test kits. Identification of the problem is the first step to addressing it



Handout 11.1

Assessment Guide for PMTCT Services: ANC

(*Modified from COPE Self- Assessment Guide)

1. Clients' Right to Information

Women and their partners have a right to accurate, appropriate, understandable, and unambiguous information related to HIV and pregnancy.

Consider:

- Are there trained staff members able to explain the components of PMTCT?
 - Information for pre-test counselling?
 - Testing procedure?
 - Shared confidentiality
 - Post test counselling to inform, support, and plan for each client.
 - Use of NVP for mother and baby?
 - Obstetric practices to minimize HIV exposure to infant?
 - Links to care in the community for psychosocial support, medical care and partner participation.
- Are there any IEC materials for additional information about PMTCT or HIV displayed throughout your facility?
 - Available services
 - Community based organizations
 - Basic HIV/AIDS information
- Is there any information about PMTCT being shared within the community?
 - Schools
 - Marketplaces
 - Community Based Organizations
 - VCT centres
 - Peer support groups
 - Infectious Disease Care/ STI Clinics

2. Clients' Right to Access to Services

This right includes the cost, availability of PMTCT services at times and places convenient to clients, and social barriers, including stigma and discrimination based on HIV status.

- Are all staff, including support staff, aware of the PMTCT programme?
- Do all staff members know when and where the following health services are available?
 - Support for HIV testing
 - Good antenatal care to maximize health of HIV-positive mothers
 - Nevirapine dispensed accurately with clear instruction on use
 - Modified obstetric practices to minimize risk to baby
 - Plan for administering NVP to the baby

- Do staff have an effective referral system for appropriate follow up for HIV infected/affected family?

3. Clients 'Right to Informed Choice

Informed choice refers to the process by which an individual arrives at a decision about health care. It is based upon access to, and full understanding of, all necessary information from the client's perspective. The process should result in a free and informed decision by the individual.

- Does the pre-test counselling review risks of HIV, pregnancy and transmission to baby?
- Is information about the PMTCT programme presented in ways women can understand?
- Is it clear that a woman's choice not to participate in PMTCT won't affect the quality of her care?

4. Clients' Right to Safe Services

Safe services require skilled health workers implement universal precautions and appropriate medical practices

- Do staff members have access to current, written guidelines on infection prevention? Do they follow the guidelines to protect clients and themselves from infections?
- Are there adequate supplies to practice universal precautions?
- Are disposable needles and syringes used whenever possible and discarded after single use? Are reusable sharps properly processed for reuse?
- Do staff have access to soap and water to wash hands before and after each clinical encounter, handling waste, and using the toilet?
- Do staff know procedures to manage complications that arise at this facility?
- Do staff receive adequate supervision and training to perform the services for PMTCT (pre-test counselling, testing, post test counselling, classification of HIV disease, use of ARVs for PMTCT, appropriate obstetrical practices, links to follow-up care)?

5. Clients' Right to Privacy and Confidentiality

Clients have a right to privacy and confidentiality during counselling, physical examinations, delivery of services, and handling of their medical records and other personal information.

PMTCT requires shared confidentiality to assure that women with HIV are appropriately managed and receive the best possible care.

- Do staff, including peer educators and lay counsellors, understand the importance of not discussing clients outside the facility?
- Does the facility provide confidential services, that is, no one is informed of the services accessed by the client at the facility?
- Do staff explain to clients that HIV care requires "shared confidentiality" between health care workers?
- Do staff respect the client's wishes about whether or not to provide information to family members, including spouses or partners?

- Does the site ensure that clients do not have to verbally announce what services they have come for in public areas, such as the waiting room and corridor?
- Are client records kept in a secure room with access strictly limited to authorized staff?
- Does the facility have private space so that counselling sessions cannot be observed or overheard by others?
- When a third party is present during counselling, an examination, or a procedure, do staff explain the person's presence and ask the client's permission?
- Are all laboratory test results kept confidential?
- Are all services offered in a manner that is respectful, confidential, and private?
- In presentations with groups, does the facilitator request that the information shared within the group be kept confidential?

6. Clients' Right to Dignity, Comfort, and Expression of Opinion

All clients have the right to be treated with respect and consideration.

- Are all clients who come to your facility treated with respect and in a manner that you would want to be treated?
- Do clients feel worried and/or nervous when waiting to see a health worker?
- Do all staff treat HIV infected clients with kindness, courtesy, attentiveness, and respect to make them feel like they are in a place where they belong?
- Do HIV-positive clients have an opportunity to suggest what the facility can do to provide better quality services?
- Do staff encourage HIV-positive women to express their concerns?

7. Client's Right to Continuity of Care

All clients have a right to continuity of services, follow-up, and referral. For PMTCT, are clients provided links to the following:

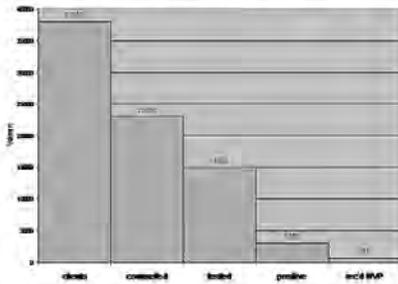
- Women's health care issues
- If and when to return for routine post-partum care
- When and how to contact staff for problems
- Safer sex, contraception and family planning
- HIV Care and support
- Links to IDCC for ongoing clinical care
 - Immune system monitoring
 - OI prophylaxis
 - Access to ARVs when eligible
- Links to supportive care
 - Positive living
 - Ongoing counselling
- Infant Follow-up
- Safer infant feeding support
- Well child/immunization
- Care for HIV exposure
 - Access to PCP prophylaxis
 - Careful monitoring of growth and development

Group Activity

Using PMTCT Data

Monitoring & Evaluation

Indicator of PMTCT/ART Programme in Simple, Timely, and Useful
A Meyer, F. Hensel, L. E. Baggott et al. HIV International AIDS Conference 2006, Abstract 1071 of 1823



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Local PMTCT Data

	Jan - March	April - June	July - Sept.	Oct. - Dec.
Women starting ART	425	409	417	460
Women received RCT	387	391	205	380
HIV test positive	15	14	13	12
Mother took AZT	14	13	13	8
Mother took NVP	10	12	12	7
Baby given NVP	12	13	13	7

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Handout 11.2

Using PMTCT Data

Instructions:

1. Choose a facilitator and recorder/presenter for your group.
2. Complete Case A or Case B as assigned by the trainer.
3. The presenter will summarize your group's finding and present your recommendations ("next steps") to the large group.

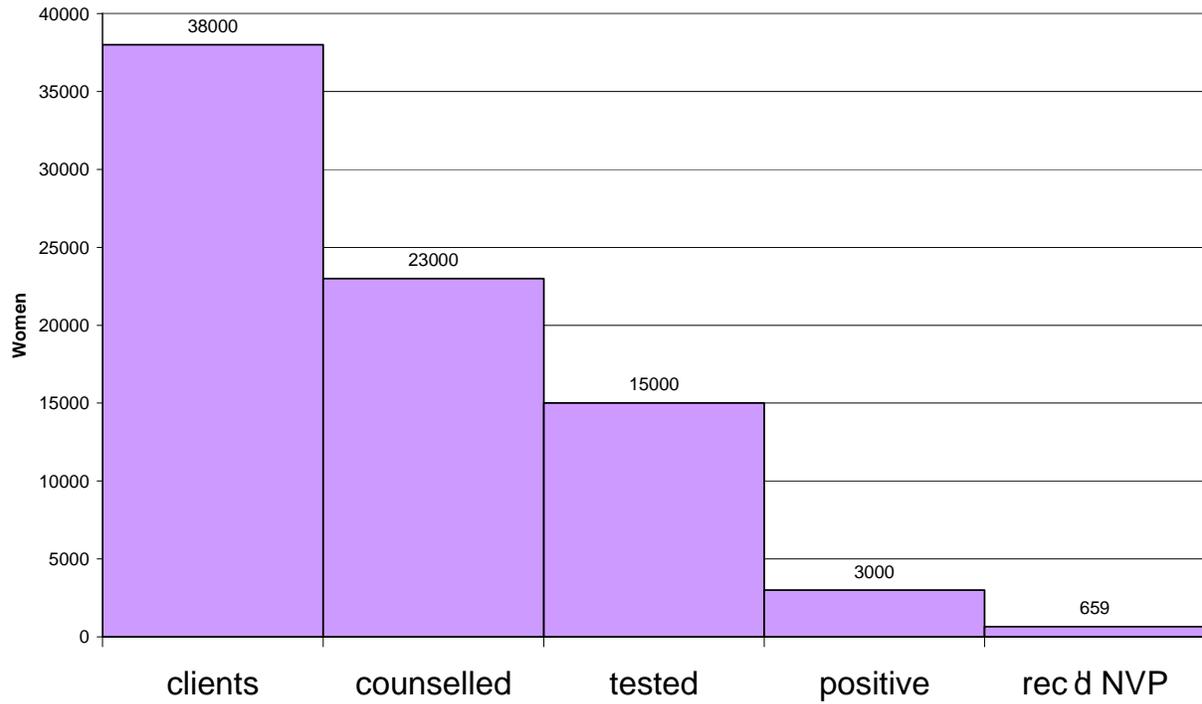
A. International Data

Imagine that you are a Minister of Health and you have received the data below on your PMTCT programme. Review the data and:

1. Identify the key challenges suggested by this data. Which programme areas need attention? How do you know?
2. Develop "next steps" to be taken to improve outcomes

Uptake of PMTCT/MTCT plus Programmes in Kenya, Tanzania, and Uganda

A Mayer, H Gundel, K Mugenyi et al. XV International AIDS Conference 2004, Abstract WePeE6828



B. Local Data

1. Imagine that you are the District Health Officer, and you receive the table below as part of an annual report Review the data and answer the following questions:
 - What data seems inconsistent or troubling?
 - If we only look at number of positive women, are things getting better or worse?
 - Why is the number of people accessing the service important information? What may have happened?
 - Look at the data on infants receiving NVP. What may be happening?
 - What other data would you like to know?
2. What steps would you take to improve outcomes?

Local PMTCT Data

	Jan - March	April - June	July – Sept.	Oct. – Dec.
Women starting ANC	425	409	417	460
Women received RCT	387	391	205	360
HIV test positive	15	14	13	13
Mother took AZT	14	13	13	8
Mother took NVP	10	12	12	7
Baby given NVP	12	13	12	7

Useful Data

- Information from a monitoring system is only as useful as the quality of the information collected in clinic registers or on client forms
- Ensure data is useful!
- HCWs play crucial role in making sure data collected is correct and useful

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- Ensuring usefulness of data for decision-making, effective programme management, and quality healthcare services requires that the data is collected accurately and in a timely manner

Role of the Healthcare Worker in M&E

- Understand the data to be collected
- Record the data every time
- Record all of the data
- Record the data in the same way every time
- Provide feedback

Module 11: Monitoring & Evaluation

- Before you record information, make sure you understand what data are required
- Record data on the appropriate form each time you interact with an HIV-positive client, perform a procedure, prescribe an ARV drug, receive a test result, provide a referral, or engage in any other PMTCT activity
- Make sure you have provided all the information requested on the monitoring form, doing so might even require noting when you did *not* provide a service
- Use the same definitions, same procedure and the same rules, for reporting the same piece of information over time
 - Sometimes, however, doing so will not be possible, particularly when definitions change as the result of research findings or new technologies - when it is not possible to record the data in the same way, make a note that describes the change and the date the change was implemented
- Healthcare workers can contribute to making the overall monitoring process as accurate and reliable as possible by providing feedback about whether:
 - Forms and registers are easy to complete accurately and reliably (i.e., the same every time)
 - Guidelines and protocols for data management are helpful
 - Forms and registers are being used in a standard manner by all healthcare workers

Recordkeeping

- Records at the healthcare facility are the foundation of the M&E system

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- **Mother's Maternal Health Record** typically includes important PMTCT-related information on counselling; HIV, and syphilis test results; treatments given, including immunizations, vitamins, and ARV medications
 - Delivery information is also included as well as follow-up
- **Child's Health Record** typically includes date of birth, birth weight, immunization record, disease history, and a chart for monitoring growth and development from birth through 12 years of age
 - The child health record might also include information about HIV testing, status, or treatment

Registers

- Most useful tool
- Should always be kept in a secure setting to protect the confidentiality of client information
- Bahamas Perinatal Clinical Record
 - Information in the form includes:
 - ANC PMTCT Register
 - ARV Register
 - Labour and Delivery PMTCT Register
 - Laboratory Register
 - Mother/Infant Follow-up Register

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- Registers are one of the most important tools used to effectively record and monitor PMTCT-related services
- **ANC PMTCT Register**
- This register may include basic information on name, age, residence, visit number, gravida (number of pregnancies) and parity (number of deliveries), last menstrual period (LMP), estimated date of delivery (EDD), medications, and results of antenatal laboratory tests, including HIV tests
- **ARV Register**
- This register may include the names of the ARV medications used for prophylaxis or treatment, the unit of issue, stocks and flows of ARVs at the facility, and amount of medications needed and requested
 - In some facilities, the ARV register may include data on prophylaxis or treatment for both the mother and the infant
- **Labour and Delivery PMTCT Register**
- This register may include data related to gestation at birth, duration of labour, mode of delivery, blood loss, and placenta delivery; HIV status of the mother, if known; ARV prophylaxis given; and infant-feeding choice. It also includes infant's Apgar score, weight, and sex
- **Laboratory Register**
- This register may include information on all test results, including HIV testing
- **Mother/Infant Follow-up Register**
- This register may include information on all aspects of follow-up postpartum care and treatment of mothers and infants

Group Exercise

Data Collection



Handout 11.3

Data Collection

Instructions:

1. Read through the first part of the case study below.
2. Fill in the appropriate information in the Perinatal Clinical Record.
3. Once instructed, read through Part 2 of the case study and finish filling in the appropriate information on the register.

Case Study Part 1:

Anna is a 30-year-old woman who comes to the ANC clinic for her first visit. She is 16 weeks pregnant with her third child and tests HIV-positive. She tells the nurse that her partner has moved away and she has no contact with him. The nurse provides her with information on the PMTCT programme and she chooses to take advantage of the interventions. Her CD4 count is 450 cells/mm³ and is placed on NFV (Nelfinavir), DUO (Duovir).

Case Study Part 2:

Anna comes for all of the ANC visits and is counselled that after labour and delivery to discontinue her medication. Remind her also that she will receive AZT, what is her Contraceptive choice, how is she going to feed baby—can she afford replacement feeding. At 38 weeks, she presents to the ward in active labour with the baby crowning. She tells the nurse she forgot to take her medications. Within 30 minutes, she delivers a 3kg male infant. She did not receive IV AZT due to the short time she was in labour at the ward.

Anna chooses exclusive replacement feeding and is taught to prepare formula milk. She is also given the supplies she will need to replacement feed at home. The baby receives 6 weeks worth of oral AZT for prophylaxis for the baby prior to discharge. She is offered an injection of Depo prior to discharge and accepts.

She is given an appointment for follow up in 4 weeks at the infectious disease clinic.



Handout 11.4

Perinatal Clinical Record

Key Points

- Programme monitoring is essential to:
 - Evaluate programme effectiveness
 - Identify problem areas
 - Plan solutions
- All PMTCT programme staff should provide input necessary to document programme activities and results

Module 11: Monitoring & Evaluation

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Key Points (2)

- Accurate and useful data recorded on registers are essential to M&E for PMTCT programmes
- HCW role is critical in taking down information which affects National reports

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APPENDIX 11- A Examples of PMTCT Performance Indicators

Sample healthcare facility PMTCT indicators

- Percentage of women starting ANC who receive pre-test counselling
- Percentage of women starting ANC who receive HIV testing
- Percentage of women who are HIV-infected who receive their test results and post-test counselling
- Percentage of women who are HIV-negative and receive their test results and post-test counselling
- Number of male partners who are HIV-tested
- Number of women attending ANC receiving ARVs for PMTCT
- Percentage of women with unknown HIV status at delivery
- Percentage of women with unknown HIV status who were tested at/after delivery
- Percentage of women who are HIV-infected who took a full course of ARVs for PMTCT
- Percentage of infants who were HIV-exposed and received ARVs
- Percentage of women who are HIV-infected and intend to replacement feed

Global and national PMTCT indicators¹

- Existence of national guidelines for the prevention of HIV infection in infants and young children and the care of infants and young children in accordance with international or commonly agreed-upon standards
- Percentage of public, missionary, and workplace venues offering the minimum package of services for preventing HIV infection in infants and young children in the preceding 12 months
- Percentage of pregnant women making at least one ANC visit who have received an HIV test result and post-test counselling
- Percentage of women who are HIV-infected and receiving a complete course of ARV prophylaxis to reduce MTCT in accordance with a nationally-approved treatment protocol in the preceding 12 months
- Percentage of infants who are HIV-positive born to women who are HIV-infected

¹ Source. UNAIDS, World Health Organization, 2004. *National Guide to Monitoring and Evaluating Programmes for the Prevention of HIV in Infants and Young Children*. Retrieved 6 June 2004, from http://www.who.int/hiv/pub/prev_care/en/nationalguideyoungchildren.pdf

