HIV TRANSMISSION: HIV GRAB BAG*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- Discuss and identify the 4 main ways HIV is transmitted.
- Identify every day items and activities that do not transmit HIV.

Training Methods: Game, Large Group Discussion

In This Activity You Will…

- Explain and conduct the Grab Bag Game (20 minutes).
- Review HIV transmission (10 minutes).

Materials:

- Flip chart
- Markers
- Handout-HIV Grab Bag Items and Answer Key

(continued next page)

Instructions

1. This session will allow participants to discuss how HIV is transmitted and not transmitted.

2. Using any break up method, divide participants into 2 teams of equal size.

3. Introduce the HIV Grab Bag Game by saying the following:

   In this bag/container are lots of items. Some of them have to do with HIV transmission, some of them do not. When it's your team's turn, a member of your team must come to the table, reach into the bag or box, and pull out an item and take it back to your team. Your team members have 30 seconds to identify what the item has to do with HIV transmission. If you succeed, your team gets a point. (Keep score on flipchart for each team) *If you don't identify it correctly within 30 seconds, the other team gets a chance to identify that item and its relationship to HIV transmission.*

   If they are correct, they get a point, if incorrect, the trainer keeps the item and the action trades back and forth until all items have been identified.

   The team with the most points at the end of the game wins a prize.

4. Decide which team will go first.

5. Begin the game making sure to keep the pace moving without letting too much time expire.

6. Award prize at the end of the game to the winning team.

7. Review the discarded items that neither team got correct.

8. Review the basics of transmission.

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

HIV TRANSMISSION: HIV GRAB BAG

ABOUT THIS ACTIVITY (CONT.)

Materials (cont.):

- Large container with the following items:
  - Latex glove
  - Can of bug repellant
  - Empty plastic bleach bottle
  - Box of household plastic wrap
  - Dental floss
  - Empty beer bottle/can
  - Packet of birth control pills
  - Baby doll
  - Toothbrush/Razor
  - Telephone
  - Massage oil
  - Flyer advertising a blood drive
  - Water based lubricant

Preparation:

- Obtain grab bag materials
- Obtain bag or box for materials

- Someone has to have HIV in order to give it to someone else.

- HIV is transmitted through 4 fluids:
  Blood
  Semen (pre-seminal fluid – pre-cum)
  Vaginal Secretions
  Breast Milk

- These 4 fluids have to get in the bloodstream through
  Vein
  Cut/open abrasions
  Mucous Membranes – any natural opening in the body. Fleshy material that acts like a sponge and absorbs the virus into the bloodstream. Examples:
    Penis
    Vagina
    Anus
    Mouth

- The main ways HIV is transmitted given these parameters is:

  By having unprotected sex with someone who has HIV (anal and vaginal sex are higher risks than oral sex).

  By sharing needles with someone who has HIV.

  A mother can pass it on to her baby before, during and after delivery (antiretroviral medications and other advances have reduced perinatal transmission to less than 2%).

  Through blood transfusions (testing of blood have made this route extremely rare).

9. Review all the modes of transmission from above list as a conclusion to the exercise. Address questions from the group.

HIV TRANSMISSION: HIV GRAB BAG

I have realized that I can live with HIV and taking care of myself is extremely important.

A Graduate of the People to People training program

Summary

1. Wrap up session with key points:

- HIV is a blood-borne pathogen that is transmitted through certain body fluids that must have a way to enter the bloodstream.
- HIV cannot be transmitted through everyday casual contact.
- Outside of the specific ways HIV is transmitted, HIV is hard to contract.

2. Inform the group that we will use this information as we continue into the other activities of the day.

- This information we just covered are the basics of HIV transmission. When you know the ways it's transmitted and the ways it is not, then you are armed with a wealth of information in which to live your lives.
- By knowing the specific ways it's transmitted along with where blood, semen, and vaginal secretions must get in for HIV to be transmitted, then you also have a sense of how to prevent it. Namely by not getting those fluids in those particular areas. We will use this information in future activities.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

HIV TRANSMISSION: HIV GRAB BAG

SESSION HANDOUT

HIV GRAB BAG ITEMS AND ANSWER KEY

Telephone: No transmission risk from casual contact.

Bug repellant: No prevention efficacy, you can't get HIV from insects.

Bleach: A 1:10 solution kills HIV on surfaces contaminated with body fluids. Can be used to clean needles.

Birth Control Pills: Not effective prevention against HIV risk from sexual intercourse.

Toothbrush, razor: May become contaminated with blood.

Latex Glove: Effective barrier against HIV on mucous membranes or in body fluids. Can be used as a dental dam.

Household Plastic Wrap: Used in place of a dental dam…don't suffocate!

Dental Floss: Flossing teeth before being receptive partner in oral sex can increase your risk of acquiring HIV.

Beer Can/Bottle: Alcohol may impair judgment and increase risk behaviors, but sharing the beer can or bottle is not a risk for transmission.

Baby Doll: Infants can get HIV from their mothers during pregnancy, delivery, and breastfeeding.

Massage Oil: A good alternative to intercourse. It's a bad sexual lubricant because it can weaken the condom and cause it to break.

Water Base Lubricant: Reduces risk, enhances enjoyment of condoms.

Blood Drive: Can't get HIV from donating blood.

HIV TESTING*

ABOUT THIS ACTIVITY

Time: 45 minutes

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

- Identify most common HIV testing methods;
- Understand the consent process involved with an HIV test;
- Understand HIV testing technologies and test results.

Training Methods: Large Group Discussion, Lecture

In This Activity You Will…

- Share definitions with group (25 minutes).
- Engage group by asking questions about their lab values (10 minutes).
- Lead a group discussion to summarize (10 minutes).

Materials:

- Handout – HIV Testing Glossary
- Sample Test Kits (OraSure, OraQuick)
- Sample Risk Assessment Form

Preparation:

- Print handout
- Obtain a sample Risk Assessment form (You can find a sample one by visiting http://www.columbia.edu/~fc15/risk%20assessment%20questions.pdf)
- Obtain sample test kits

Instructions

1. Secure one or more sample test kits and sample risk assessments for use in this lesson. Be sure you know how they work.
2. Gather the participants in one large group.
3. Refer them to the copy of the HIV Testing Glossary
4. Present the information shown below under "Discussion." Take time to answer questions as they arise. Be sure everyone in the group has an opportunity to examine the sample test kits and look at the sample risk assessment.

Discussion

1. What is an HIV antibody test?

When HIV enters the body, it begins to attack certain white blood cells called T4 lymphocyte cells (helper cells). A doctor may also call them CD4 cells. The immune system then produces antibodies to fight off the infection. Although these antibodies are ineffective in destroying HIV, their presence is used to confirm HIV infection. Therefore, the presence of antibodies of HIV results from HIV infection.

2. What are the 3 most common ways to get an HIV Test?

Venipuncture: Most commonly known as a "blood draw." The method takes blood from a vein in the arm rather than the fingertip.

Oral Method: Orasure® and OraQuick Advance HIV1/2 are currently the only FDA-approved oral-fluid tests. Fluid is collected from inside the mouth and analyzed using an EIA test and supplemental Western blot test, if necessary. (Pass around the sample test kits so participants may see them.

* This module comes from the Missouri People to People Training Manual, 2008.

HIV TESTING

▶ TRAINING TIP

Things to stress:

- HIV tests look for the presence of HIV antibodies; they do not test for the virus itself.

Rapid Test: The OraQuick® ADVANCE™ Rapid HIV-1/2 Antibody Test is used to see if a collected sample of oral fluid or blood contains HIV antibodies. The healthcare provider will collect an oral fluid sample, or take a small droplet of blood from a finger, or draw blood from the vein. He/she will then run the test and give the results during the same visit. The OraQuick® ADVANCE™ test is very accurate and usually takes about 20 minutes to process. However, additional testing is necessary to confirm a preliminary positive result.

3. What happens when an HIV test is given?

Before any test is given, the patient must provide his/her Consent to be tested. Proper consent requires that a patient be competent, able to understand the purposes, risks, harms and benefits of being tested, as well as those of not being tested, and their participation must be voluntary. The patient is required to sign a Consent Form.

Anonymous Testing: Anonymous testing means that names are not recorded, and only the people getting tested can find out their own test results. Not all areas have facilities for anonymous testing. The Client will receive a number associated with his/her specific test and he/she must present that number in order to receive the results. Without the number, the test results will not be given.

Confidential Testing: Confidential testing means that, although test results will be recorded, no one can give them out without permission of the people tested, except where required by state law.

Whichever testing method is used, people can get counseling both before and after being tested and after receiving the results. Pre-Test Counseling is an important component of the testing process. Pre-test counseling is usually provided by the healthcare provider or Peer Educator and should:

- Explain the difference between anonymous and confidential testing.

- Inform the patient of the availability of a home test.
- Review the facts about HIV infection.
- Review the reasons for testing and the Client's expectations.
- Review individual risk behaviors and risk reduction measures.
- Discuss the meaning of positive and negative results.
- Assess the Client's personal and social support network.

Post-Test Counseling occurs after the results of the HIV test have been received. Post-test counseling should include the following:

- Review the meaning of the test results and their implications.
- If test results are positive:

Assess Client's reaction and ability to cope.

Anticipate the need for support and close follow-up plan for medical evaluation.

- If test results are negative:

Remind the patient of the possibility of seroconversion (the change of a serologic test result from a negative to a positive as a result of antibodies induced by the introduction of antigens or microorganisms into the host) if the Client is involved in high-risk activities.

Carefully dispel any false beliefs regarding invulnerability or immunity to HIV infection.

Risk Assessment: This includes gathering information about the Client's sexual and other risk behavior as well as their personal and social support systems. This information will help guide the both the Peer and the Client in making a risk reduction plan for the Client. (Pass around a sample Risk Assessment Form for participants to see.)

Risk Reduction Counseling is an important component of both pre-test and post-test counseling. In order to reduce the risk of spreading the HIV disease to others, the diagnosed patient should be counseled to follow these guidelines:

- Reduce or limit his/her number of sexual partners.
- Use latex condoms and water-based lubricant for all sexual activity.
- In the case of injection drug use:

Enter into a treatment program.

Do not share needles with anyone.

Use sterile needles. If sterile needles are not available, clean used needles with bleach as directed.

4. What are the possible results of an HIV test?

An HIV test may return positive, preliminary positive, confirmatory positive or negative results.

A Positive result means that the test detects HIV antibodies in the Client's blood or oral fluid.

A Preliminary Positive Result suggests that antibodies to HIV may be present in the Client's blood or oral fluid. If this is the result on the test, the Client will need to have another test to confirm the results.

A Confirmatory HIV Positive Result is sought for those patients who test positive on the rapid test.

Confirmatory tests are not required if the initial venipuncture or OraSure test result is negative or if there are signs of immune deficiency (oral thrush, Kaposi's Sarcom, etc.). A different type of test (standard EIA or Western Blot) on the same sample will be used for confirmation.

A Negative Result indicates that the test did not detect HIV antibodies in the blood or oral fluid. This could mean that the Client is negative or that they are in the "Window Period" for testing and will need to be tested again in 3-6 months.

Summary

- Be sure to answer any questions from the group regarding HIV testing before you move on to the next section.
- Wrap up session.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

SESSION HANDOUT # 1 of 1

HIV TESTING GLOSSARY

Anonymous Testing: Anonymous testing means that names are not recorded, and only the people getting tested can find out their own test results. (Not all areas have facilities for anonymous testing.)

Confidential Testing: Confidential testing means that, although test results will be recorded, no one can give them out without permission of the people tested, except where required by state law.

Confirmatory Positive Test Result: A confirmatory HIV test is recommended for all patients who test positive on the rapid test. Confirmatory tests are not necessary if the test result is negative or if there are signs of immune deficiency (oral thrush, Kaposi Sarcoma, etc.). A different HIV rapid test, standard EIA, or Western Blot test can be used for confirmation.

Consent: Requires that a patient be competent and able to understand the purposes, risks, harms and benefits of being tested, as well as those of not being tested. A patient's participation must also be voluntary.

EIA: Enzyme immunoassay, sometimes referred to as ELISA, is a commonly used screening test to detect antibodies to HIV

Enzyme Linked Immunosorbent Analysis (ELISA): The standard screening test used to detect the presence of HIV antibodies. The ELISA should be used with a confirmatory test. Tests that detect other signs of HIV are available for special purposes, such as for additional testing of the blood supply and conducting research. Some of these tests are expensive or require more sophisticated equipment and specialized training.

IFA: Indirect immunofluorescence assay is a confirmatory test like Western blot.

Negative result: The test did not detect HIV antibodies in blood or oral fluid.

Oral Method: Orasure® and OraQuick Advance HIV1/2 are currently the only FDA-approved oral-fluid tests. Fluid is collected from inside the mouth and analyzed using an EIA test and supplemental Western blot test, if necessary.

Positive result: The test did detect HIV antibodies in blood or oral fluid.

Preliminary Positive Result: This result suggests that antibodies to HIV may be present in blood or oral fluid. If the Client receives this result on the test, another test will have to be taken to confirm the results.

HIV TESTING GLOSSARY (CONT.)

Rapid Test: The OraQuick® ADVANCE™ Rapid HIV-1/2 Antibody Test is used to see if a collected sample of oral fluid or blood contains HIV antibodies. The healthcare provider will collect an oral fluid sample or take a small droplet of blood from a finger, or draw blood from the vein. He/she will then run the test and give the results during the same visit. The OraQuick® ADVANCE™ test is very accurate and usually takes about 20 minutes to process. However, additional testing is necessary to confirm a preliminary positive result.

Risk Assessment: Provides prevention counseling tailored to individual Client needs and should be used to involve Clients in identifying their risk behaviors.

Seroconversion: Initial development of detectable antibodies specific to a particular antigen; the change of serologic test result from a negative to positive as a result of antibodies induced by the introduction of antigens or microorganisms into the host.

Venipuncture: Most commonly known as a "blood draw." The method usually takes blood from a vein in the arm rather than the fingertip.

Western blot: A laboratory test that detects antibodies specific for components of HIV. Its chief use is to confirm the presence of HIV antibodies in specimens found repeatedly reactive using the EIA test.

HIV/AIDS FRAME DISCUSSION*

ABOUT THIS ACTIVITY

Time: 25 minutes

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

- Describe basic information about HIV/AIDS.
- Describe misconceptions regarding how HIV is transmitted.
- Provide a brief overview of HIV/AIDS facts.

Training Method: Large Group Discussion

In This Activity You Will…

- Encourage participation of group by asking questions about HIV and AIDS (10 minutes).
- Share definitions (10 minutes).
- Lead group discussion to summarize (5 minutes).

Materials:

- Newsprint
- Markers
- HIV/AIDS Frame Poster
- Masking Tape

(continued next page)

Instructions

1. Point out that we all hear and read stories about HIV and AIDS that include incorrect information and personal opinions. In this discussion, participants will learn basic information about HIV/AIDS. Topics to be included are (read from AIDS FRAME)

2. Follow Talking Points below.

Talking Points

What do the letters HIV and AIDS stand for?

"What is HIV?"
H – Human
I – Immunodeficiency
V – Virus

What is HIV? – HIV is the virus that causes AIDS.

What is AIDS?
A – Acquired
I – Immune
D – Deficiency
S – Syndrome

What is AIDS? – AIDS is the result of HIV infection.

How do people get infected?

- By having vaginal, anal or oral sex with someone who has HIV.
- By sharing needles or syringes with someone who has HIV.
- During pregnancy, birth or breastfeeding from an infected mother to her baby.

* This module comes from the Missouri People to People Training Manual, 2008.

HIV/AIDS FRAME DISCUSSION

ABOUT THIS ACTIVITY (CONT.)

Preparation:

The content of the AIDS FRAME can be prepared ahead of time on newsprint.

a. "What is HIV?"

b. "What is AIDS?"

c. "How do people get infected?"

d. "How don't people get infected?"

Bodily fluids of an infected person that spread HIV may include:

Semen
Blood
Vaginal Fluid
Breast Milk
Any other body fluids containing blood

How do people protect themselves from getting infected?

- People can choose not to have sex or use drugs.
- People can choose ways to be affectionate that do not spread HIV infection or other STDs/STIs.
- If people do decide to have sex, using a latex condom (barrier) the right way every time greatly reduces the risk of HIV infection and other STDs/STIs.

Summary

- This activity is designed to ensure that everyone in the group has a basic definition and understanding of HIV/AIDS before proceeding with the rest of the training.
- Answer any further questions from participants.
- Wrap up session.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

USING THE HIV/AIDS FACT BOOK: SEARCH FOR ANSWERS*

ABOUT THIS ACTIVITY

Time: 35 minutes

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

- Understand the design of the Fact Book.
- Use the Fact Book.
- Provide a brief overview of HIV/AIDS facts.

Training Methods: Small Group Exercise, Large Group Discussion

In This Activity You Will…

- Instruct on use of the American Red Cross Fact Book (5 minutes).
- Divide into 4 groups, give instructions and lead activity to encourage participation (15 minutes).
- Lead group discussion to summarize (15 minutes).

Materials:

- American Red Cross HIV/AIDS Fact Book-To order, visit http://www2.redcross.org/services/hss/hivaids/facts.html
- Handout – Search for Answers
- Answer Key – Search for Answers
- Small prize or prizes (optional)
- Pencils and/or pens

Preparation:

- Print handouts.
- Obtain small prizes (optional).

Instructions

1. Hand out an American Red Cross HIV/AIDS Fact Book to each participant.

2. Point out that we all hear and read stories about HIV and AIDS that include incorrect information and personal opinions. In this exercise, participants will learn how to use the Fact Book as a tool to find out whether what they hear and read is factual.

3. Tell participants that this exercise has two parts. First, they will learn how to use the Fact Book by doing an activity called "Search for Answers." Second, once they have learned to use the Fact Book, they will be able to look up statements on the "I Don't Know" column on the newsprint. (Note: if participants were able to correctly identify all the items in the "True or False?" exercise, they will not need to look up the statements.)

4. Briefly review the format of the Fact Book and explain what information they will find on each of the following pages:

Page	
v	Questions About HIV and AIDS
1	Introduction
5	Key to Using the Fact Book
329	Glossary
347	Bibliography
375	Supplemental Materials

5. Next, explain the difference between the "Basic" and "Detailed" answers to questions.

- The "Basic" answers the question in a simple, straightforward way.
- The "Detailed" answer provides more background information for the answer, including an overview of research that supports the "Basic" answer.

* This module comes from the Missouri People to People Training Manual, 2008.

USING THE HIV/AIDS FACT BOOK: SEARCH FOR ANSWERS

6. Ask a volunteer to select one question about HIV or AIDS. Show participants how to look up the answer to that question in the table of contents (pp. v xiv) of the Fact Book, and how to find the answer in the Fact Book.

7. Now, distribute the Activity Sheet: "Search for Answers" and go over its instructions.

8. Assign participants to work either individually or in pairs on this exercise. Ask half of the participants to start with the first exercise question and work through the questions in order. Assign the rest of the participants to begin with the last exercise question and work through the questions in reverse order.

9. Give participants 10 15 minutes to find answers to the questions.

10. When participants have finished answering the questions on the activity sheet, ask them to take turns reading questions and answers from their sheets until you have covered all of the questions.

Discussion

Using the Answer Key provided, answer any questions from participants about information covered during the "Search for Answers" exercise. Ask volunteers to identify new information they learned during this exercise.

Draw attention to the instructional posters displayed in the room. Point out posters that cover the following:

- Basic HIV transmission and prevention information.
- Any information that volunteers have identified as being new to them.

Summary

- The American Red Cross HIV/AIDS Fact Book is a valuable resource tool that participants will use to learn more about HIV/AIDS and to clarify misperceptions they may have heard or read. This exercise is designed to ensure that participants can quickly become familiar with the Fact Book and know how to use it.
- Answer any further questions from participants.
- Wrap up session.

USING THE HIV/AIDS FACT BOOK: SEARCH FOR ANSWERS

SESSION HANDOUT

SEARCH FOR ANSWERS ACTIVITY

Find the "Basic" answers to the following questions using the American Red Cross HIV/AIDS Fact Book. Write the page number(s) where you found the answer and take notes if you like. We will review the answers as a group.

	Page #
1. What is the immune system and why is it important?	_____
2. What is an opportunistic infection?	_____
3. What is the connection between Hepatitis C and HIV?	_____
4. What kinds of services do families who are coping with HIV/AIDS need?	_____
5. How does HIV/AIDS in babies and children differ from HIV/AIDS in adults?	_____
6. Can a doctor notify a patient's spouse if that patient tests positive for HIV/AIDS?	_____
7. Are there laws protecting people with HIV/AIDS from discrimination?	_____
8. Does everybody with HIV get AIDS?	_____
9. Why are sexually transmitted diseases associated with getting HIV/AIDS?	_____
10. If I am HIV-positive or have AIDS, whom should I tell?	_____

USING THE HIV/AIDS FACT BOOK: SEARCH FOR ANSWERS

SESSION ANSWER KEY

SEARCH FOR ANSWERS- ANSWER KEY

Fact Book page numbers are listed in the left margin.

Page **Question/Answer**

15 **What is the Immune System? Why is it important?**
The immune system is a collection of cells and substances, including white blood cells, T cells and antibodies, which act as the body's defense against germs and other infections that make people sick. Antibodies are substances that form in the blood when germs enter the body. Antibodies usually defend against illnesses and infections, although HIV antibodies do not always protect against HIV infection.

27 **What is an opportunistic infection?**
An opportunistic infection is an illness that occurs only when someone's immune system is not working normally. When the body is in a weakened state, germs can invade the body and multiply.

33 **What is the connection between Hepatitis C and HIV?**
Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). The virus spreads from an uninfected person or from an infected mother to her baby during birth. People at risk for HCV may also be at risk for contracting HIV because both viruses are transmitted in similar ways. About 80 percent of people with HCV do not have symptoms.

304 **What kinds of services do families who are coping with HIV or AIDS need?**
Families living with HIV (the virus that causes AIDS) need ready access to a wide range of medical and social services, such as those offered in community clinics. Services must also be available to serve ethnically diverse populations.

277 **How does HIV/AIDS in babies and children differ from HIV/AIDS in adults?**
AIDS (a result of HIV infection) is caused by a virus (HIV). Babies and children who have the virus are more likely than HIV-positive adults to get bacterial infections. Many babies and children with HIV have problems growing and gaining weight and may experience damage to the nervous system that causes developmental difficulties.

295 **Can a doctor notify a patient's spouse if that patient tests positive for HIV/AIDS?**
When patients test positive for HIV (the virus that causes AIDS), doctors may encourage them to tell their sex or needle-sharing partners. If patients who have HIV do not let their partners know about their possible risks, even after being counseled to do so, doctors themselves can notify partners, using confidential procedures in good faith. Over half the states have specific laws that make it a crime for knowingly exposing or transmitting HIV to others.

SESSION ANSWER KEY (cont.)

SEARCH FOR ANSWERS-ANSWER KEY (CONT.)

141 **Are there laws protecting people with HIV/AIDS from discrimination?**
Yes. The Americans with Disabilities Act (ADA) of 1990 protects people with disabilities (including HIV infection) from discrimination in the workplace and in public accommodations solely on the basis of their disabilities. Other laws give some protection from discrimination in certain areas. However, no laws completely protect HIV-positive people and their families from discrimination.

17 **Does everybody with HIV get AIDS?**
Since 1992, scientists have estimated that about half the people who have HIV will develop AIDS within 10 years of being infected if they do not receive treatment. However, protease inhibitors, used in combination with other antiviral drugs, can suppress the ability of HIV to replicate. These treatments can extend and improve the quality of life for many people with HIV.

51 **Why are sexually transmitted diseases associated with getting HIV/AIDS?**
AIDS is a result of HIV infection. Sexually transmitted diseases (STDs) that cause genital sores may make it easier for HIV to enter the body and cause infection. Other STDs produce inflammation, which also may increase the chances of HIV infection. Using a latex (or polyurethane if allergic to latex) condom consistently and correctly during sex greatly reduces the risk of HIV transmission, as well as some other STDs.

197 **If I am HIV+ or have AIDS, whom should I tell?**
It is not easy for people who have HIV to tell others. Sex or needle-sharing partners (past, present and future) need to know that they are at risk for HIV infection. Over half of the states have specific laws that make it a crime for knowingly exposing or transmitting HIV to others. People with HIV may choose to also tell their doctors, dentists, dental hygienists or anyone who may come into contact with their blood, semen, vaginal fluid or breast milk.

WORD MATCH*

ABOUT THIS ACTIVITY

Time: 25 minutes

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

- Have a comprehensive understanding of HIV/AIDS facts information.

Training Methods: Game, Large Group Discussion

In This Activity You Will…

- Provide instructions and lead activity (15 minutes).
- Engage group by asking questions to ensure understanding of terms (5 minutes).
- Lead a group discussion to summarize (5 minutes).

Materials:

- American Red Cross HIV/AIDS Facts Book (optional)- can be obtained by visiting http://www2.redcross.org/services/hss/hivaids/facts.html
- Handout – Word Match Activity Sheet
- Answer Key – Word Match
- Index cards, either 3" x 5" or 4" x 6"
- Avery® 5389 or other compatible cards
- Paper clips (optional)
- Glue (optional)

(continued next page)

Instructions

1. This exercise is best done after a session on HIV/AIDS basic information.
2. Shuffle the question cards and answer cards together, so they are mixed.
3. Arrange the room so participants will be sitting around one large table or several small tables, facing each other.
4. Explain that this is a group exercise and the Fact Book will help them complete the Word Match. Tell them this exercise will also help to build a good foundation of HIV knowledge.
5. Ask everyone to sit together around the table(s).
6. Distribute the cards to the participants as if you were dealing a deck of cards. Some cards have questions on them and some have answers.
7. Have one person begin by reading one of his or her cards aloud. All participants should then look at their cards to see if they have the matching question or answer for that card.
8. The participant who has the match reads it aloud. Check to make sure that all participants understand why this is the correct match for the card that was read. Use the Answer Key, if necessary, to verify that the correct match has been made.
9. If participants have difficulty making a match, set that card aside. When all the other cards have been matched, the group can work together to find the match. They may use the Fact Book, the instructional posters or the handouts to find the correct match.
10. Paper clip the matched questions and answers together.

* This module comes from the Missouri People to People Training Manual, 2008.

WORD MATCH

ABOUT THIS ACTIVITY (CONT.)

Preparation:

- Photocopy and cut out the Word Match cards. You can paste them to index cards or photocopy them onto Avery cards. You should have 34 cards.
- Shuffle the question cards and answer cards together, so they are mixed.
- Arrange the room so participants will be sitting around one large table or several small tables, facing each other.

11. Continue the process until all cards are matched.

Summary

- Answer any questions and clarify or correct any misinformation.
- Congratulate participants on their progress.

SESSION HANDOUT

WORD MATCH

Photocopy the following Word Match cards, and cut them apart and paste them onto index cards or photocopy them onto Avery cards.

HIV	A retrovirus that causes AIDS. The virus spreads from person to person through blood-to-blood and sexual contact. The virus was identified in 1983.
AIDS	AIDS is a condition that results from HIV infection. The condition is caused by the weakening of the immune system as a result of the virus (HIV). By the time people with HIV develop AIDS, their immune systems have become damaged and may no longer be able to fight off other infections.
STD/STI	Sexually Transmitted Disease/Infection. A contagious disease usually acquired by sexual intercourse or genital contact.
HAART	Highly Active Antiretroviral Therapy. Sometimes referred to as combination therapy or "Drug Cocktails."
CD4	Cells in the immune system that play a major role in defending the body against germs; also a major target of HIV infection.

WORD MATCH

SESSION HANDOUT (cont.)

Viral Load	A measurement of the amount of the human immunodeficiency virus (HIV) in the blood, expressed as a number of copies per milliliter.
RNA	Abbreviation for ribonucleic acid.
ARVs	Antiretroviral. A class of drugs effective against retroviruses.
Cell	The fundamental unit of all living tissue.
Antibodies	Substances that form in the blood when germs enter the body. Antibodies usually defend against illnesses and infections.
Ryan White CARE Act	The federal Ryan White CARE Act provides health care for people with HIV disease. Enacted in 1990, it fills the gaps in care faced by those with low incomes and little or no insurance.

WORD MATCH

SESSION HANDOUT (cont.)

Drug Resistance	The ability of a disease to resist the effects of drugs that were previously toxic to them.
ELISA	Abbreviation for Enzyme-Linked Immunosorbent Assay. Primary test used in screening for HIV antibodies.
Western Blot	A laboratory blood test to detect the presence of antibodies to specific antigens. It is regarded as more precise than the enzyme linked immunosorbent assay (ELISA) and is sometimes used to check the validity of ELISA tests.
Universal Precautions	Guidelines to protect healthcare workers, as well as patients, from exposure to HIV and other blood borne germs.
Post Exposure Treatment	Combination drug therapy started within 24 to 72 hours of exposure. This has been shown to reduce the risk of HIV infection. Even when taken properly, post-exposure treatment is not 100% effective. Attempting to prevent HIV infection by combination drug therapy should never take the place of adopting and maintaining prevention behavior.
CDC	Abbreviation for Centers for Disease Control and Prevention.

WORD MATCH

SESSION ANSWER KEY

WORD MATCH ANSWER KEY

Facts Book Page	Term	Definition
10	AIDS	AIDS is a condition that results from HIV infection. The condition is caused by the weakening of the immune system as a result of the virus (HIV). By the time people with HIV develop AIDS, their immune systems have become damaged and may no longer be able to fight off other infections.
15	Antibodies	Substances that form in the blood when germs enter the body. Antibodies usually defend against illnesses and infections.
CDC definition	ARVs	Antiretroviral. A class of drugs effective against retroviruses.
CDC definition	CD4	Cells in the immune system that play a major role in defending the body against germs; also a major target of HIV infection.
CDC definition	CDC	Abbreviation for Centers for Disease Control and Prevention.
CDC definition	Cell	The fundamental unit of all living tissue.
CDC definition	Drug Resistance	The ability of a disease to resist the effects of drugs that were previously toxic to them.
104	ELISA	Primary test used in screening for HIV antibodies. Abbreviation for enzyme-linked immunosorbent assay.
37	HAART	Highly active antiretroviral therapy. Sometimes referred to as combination drug therapy or "Drug Cocktail."
9	HIV	A retrovirus that causes AIDS. The virus spreads from person to person through blood-to-blood and sexual contact. The virus was identified in 1983.
93	Post Exposure Treatment	Combination drug therapy started within 24 to 72 hours of exposure. This has been shown to reduce the risk of HIV infection. Even when taken properly, post-exposure treatment is not 100% effective. Attempting to prevent HIV infection by combination drug therapy should never take the place of adopting and maintaining prevention behavior.

WORD MATCH

SESSION ANSWER KEY (cont.)

CDC definition	RNA	Abbreviation for ribonucleic acid
www.hopkins-aids.edu/manage.ryan_white.html	Ryan White Care Act	The federal Ryan White CARE Act provides health care for people with HIV disease. Enacted in 1990, it fills gaps in care faced by those with low-incomes and little or no insurance.
CDC definition	STD/STI	Sexually Transmitted Disease/Infection. A contagious disease usually acquired by sexual intercourse or genital contact.
59	Universal Precautions	Guidelines to protect healthcare workers, as well as patients, from exposure to HIV and other blood borne germs.
39	Viral Load	A measurement of the amount of the human immunodeficiency virus (HIV) in the blood, expressed as number of copies per milliliter.
104	Western Blot	A laboratory blood test to detect the presence of antibodies to specific antigens. It is regarded as more precise than the enzyme-linked immunosorbent assay (ELISA) and is sometimes used to check the validity of ELISA tests.

STAGES OF HIV INFECTION*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- Understand basic concepts about how HIV infection affects the body.

Training Methods: Lecture, Large Group discussion

In This Activity You Will…

- Lead an activity of common terms and definitions in the field of HIV/AIDS (15 minutes).
- Answer questions to ensure understanding (10 minutes).
- Lead group discussion to summarize (5 minutes).

Materials:

- Handout: The Stages of HIV Infection
- Newsprint and markers

Preparation:

- Print handout

Instructions

1. At the beginning of this activity, explain that they have discussed basic facts about HIV and AIDS. Now, they will learn how HIV infection affects the human body.

2. Distribute The Stages of HIV Infection handout to each participant.

3. Ask participants to look at the handout. Point to the circle, "Person becomes infected with HIV." Explain that for an infection to occur, a "germ" (disease agent) must enter into the body of a "susceptible person" in a particular way ("route") and in the sufficient amount ("dose").

4. Print the words germ, dose, route and susceptible person on newsprint. Explain what is meant by each term:

- In an HIV infection, the germ is HIV, and HIV is a particular kind of germ called a "virus."

- Viruses are different from other kinds of germs, such as bacteria or fungi, because viruses cannot reproduce and survive on their own.

- Viruses have to have a host cell in order to survive and reproduce.

- In the case of HIV, the host cell is the T-helper cell or CD4+ cell, a white blood cell essential to the body's immune system.

- HIV can get into cells because a part of HIV and the host cell fit together like pieces of a jigsaw puzzle.

- The primary host cell used to reproduce more HIV is the T-helper cell. HIV can also infect other cells in the human body.

* This module comes from the Missouri People to People Training Manual, 2008.

STAGES OF HIV INFECTION

For years I heard that HIV lies dormant in the body for up to 10 years, but after understanding how the disease progresses in the body and how the meds work to slow it down, I knew I had to share this [information] with newly infected people. I really wanted to ease their fears about dying and help them know why it's important to take their medications the right way.

Sheila Jackson,
HIV Program Director for
Living by Design

5. Explain that it is not possible to say what dose (amount) of HIV is needed to infect people. Scientists have identified four body fluids that can carry enough HIV to infect people. These fluids are blood, semen, vaginal fluids and breast milk.

6. Ask participants the open-ended questions below to initiate a discussion on the stages of HIV infection.

Discussion Questions

[Correct answers are provided so that yon can add to incomplete information and correct misinformation.]

1. *What are the routes through which HIV can enter the body?*

- HIV can enter the body through several routes:
  Blood-to-blood contact, such as sharing needles and syringes
  Sexual contact in which blood, semen, or vaginal fluids from an infected person enter the body of another person
  An infected mother can spread the virus to her child during pregnancy, birth or breast-feeding.

2. *Explain what is meant by a susceptible person.*

- People are susceptible to HIV infection if they engage in behaviors that put them at risk.

- A susceptible person is someone who allows or in some way gives the germ a chance to enter and affect the body. A person can be susceptible for many reasons, depending on the disease. For example, malnutrition may make people susceptible to diseases that well-nourished people can resist. Sometimes susceptibility to a disease runs in families (heredity).

STAGES OF HIV INFECTION

3. What behaviors put people at risk for HIV infection?

- Sexual activities that involve the exchange of body fluids, such as vaginal, oral or anal sex with an infected partner.

- Behaviors that involve blood-to-blood contact with an infected partner, such as sharing needles to inject drugs, or for other reasons, such as ear piercing or tattooing.

- Use of non-injection drugs, such as marijuana, crack cocaine, and alcohol may also put people at risk. Because their judgment may be impaired, they may engage in risky behaviors, such as injecting drugs or having sex without a latex (or polyurethane if allergic to latex) condom. Anyone who participates in these behaviors is "susceptible" to possible HIV infection.

- Some people may be less able to resist a germ because of their overall health.

- A person who has a sexually transmitted disease (STD) is at greater risk for being infected with HIV through sex than someone who does not have a sexually transmitted disease.

- People who for some reason already have an impaired immune system may be more susceptible to HIV infection.

Tell participants that for infection to occur, all four conditions (germ, dose, route and susceptibility) have to be present at the same time. The virus must enter the body through body fluids that carry enough virus to cause infection. The person must engage in activities that bring him or her into contact with the body fluids that carry the virus.

Point to the black dot that indicates the time of infection on the handout.

4. Using the terms we've defined in this discussion, what does the black dot on the handout mean?

- The point at which a sufficient amount of HIV entered the body of a susceptible person by an effective route.

Have participants look at the next segment on the handout, which represents acute infection.

5. How long does acute infection last.

- A week to a month.

6. Does everyone who is infected with HIV experience the symptoms of acute infection?

- Not everyone has the flu-like symptoms of acute infection.

- People who do experience acute infection may not recognize it as a sign of HIV infection. The flu-like illness will go away on its own, and unless people realize they may have been exposed to HIV, they may not connect the symptoms with HIV infection.

Draw attention to the window period.

7. What is a window period?

- The period between infection and the point at which tests can detect signs of infection is sometimes called a window period. If people are tested during this time, they may have a negative test result even if they are infected.

Have participants look at the asymptomatic period.

STAGES OF HIV INFECTION

8. What affects the asymptomatic period?

- Combination therapy slows the development of infection in people with HIV by blocking the ability of HIV to multiply, thus protecting the immune system for some time (6 months to more than 10 years).

9. Why is this time period called the asymptomatic period?

- This is the time when infected people look and feel healthy. People may not know they are infected. Even an infected person who looks and feels healthy can infect others.

10. Can someone explain what HIV is doing in the body during this time?

- The virus multiplies, infecting and destroying the T-helper cells and other cells in the body.

Explain that once enough of the body's defenses are destroyed, the person begins to develop symptoms. This is called the symptomatic period.

- The symptoms at first may be generalized complaints, such as the ones listed on the handout.

- Once the person's T cell count is at 200 ml or less and the person develops an AIDS-defining illness (such as Pneumocystis carinii pneumonia), the person is diagnosed with AIDS.

Continue the discussion using the following questions:

11. Is there a test that determines if a person has AIDS?

- The tests commonly used screen for signs of HIV. Only a doctor can look at a person's signs and symptoms and diagnose AIDS.

12. What does the phrase incubation period mean?

- Incubation period refers to the time from infection the black dot on the handout to the time when the AIDS defining signs and symptoms occur.

13. How soon do people infected with HIV develop AIDS?

- About half the people with HIV develop AIDS within 10 years of infection. Combination treatments that include protease inhibitors have been shown to slow the pace of infection in some people, extending and improving the quality of life for many.

- People with AIDS may have illnesses healthy people don't get. They may have more severe versions of other illnesses. People with AIDS have a T cell count that is usually below 200. People with healthy immune systems have T cell counts at around 1,000.

Point to the segment on the activity sheet which shows the stage after a person develops AIDS.

The maximum survival time is unknown.

Summary

It is important for Peer Educators to understand fully the various stages of HIV infection, how to recognize them and what they mean for the person who is infected.

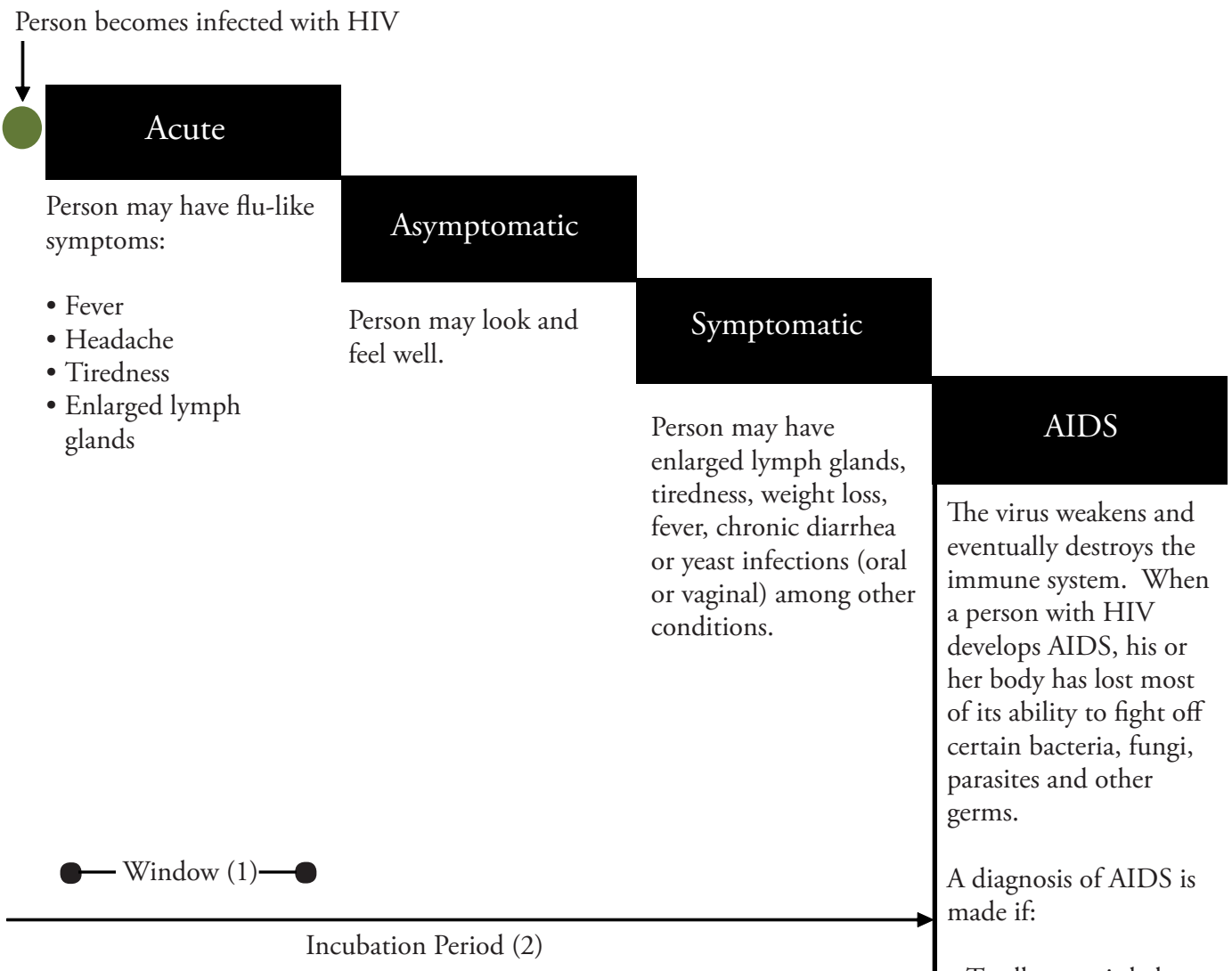
- Ask for volunteers to summarize points from the discussion and list these points on newsprint.
- Answer any final questions from participants.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

STAGES OF HIV INFECTION

SESSION HANDOUT

THE STAGES OF HIV



- A person who has HIV can infect others even if they look healthy and feel well.
- One person with HIV may have different combinations of signs and symptoms from someone else who is also infected.
- Only an HIV test can show if someone is infected with HIV.
- Only a doctor can diagnose AIDS.

(1) Window Period: Time it takes for antibodies to become detectable in the body; usually within three months.
(2) Incubation Period: Time from point of infection to development of AIDS.

IMMUNE SYSTEM AND HIV LIFE CYCLE ACTIVITY*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- List modes of transmission of HIV and methods of prevention.
- Describe the HIV life cycle.

Training Method: Lecture

In This Activity You Will…

- Conduct PowerPoint presentation (10 minutes).
- Go over the HIV life cycle (20 minutes).

Materials:

- The HIV and Immune System Powerpoint slides
- LCD Projector
- Lifecycle on laminated poster
- Lifecycle steps with tape or Velcro on the back
- Handout - HIV Lifecycle
- Handout- The Immune system PowerPoint slides

(continued next page)

Instructions

1. Using the HIV and Immune System slides, conduct a presentation.
2. Explain to participants that you are going to go through the HIV lifecycle.
3. This is the process that HIV takes when it has infected a cell.
4. There are five main steps that you will be focusing on. Anti-HIV medications interfere with the HIV lifecycle.
5. Understanding the HIV lifecycle will help us when we learn about anti-HIV medications.
6. Read the following HIV Life Cycle Steps while using the diagram:

Step 1: Attachment and Fusion

Description: HIV attaches to the surface of the CD4+ cell and fuses with the cell so it is inside of the cell.

Step 2: Reverse Transcription

Description: HIV genes are carried in two strands of RNA. Human genetic materials are found in DNA. HIV RNA is made into DNA using the enzyme reverse transcriptase.

Step 3: Integration

Description: The new DNA is carried into the cell's nucleus (where the cell's DNA is kept). The HIV DNA inserts its genetic material into the DNA of the infected cell using the enzyme integrase.

* This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

IMMUNE SYSTEM AND HIV LIFE CYCLE ACTIVITY

ABOUT THIS ACTIVITY (CONT.)

Preparation:

- Make large poster size replica of a CD4+ Cell. A sample picture is attached at the end of this activity. You can blow this picture up or create one of your own. It may be a good idea to laminate it so that it can be reused.
- Using smaller pieces of paper or cardboard, write the HIV Life Cycle steps (see #6) on one side of the paper and the description on the other. Place either tape or Velcro on the side of the card with the description. If you use Velcro, put pieces on the large poster where the steps will occur.

Step 4: Transcription

HIV DNA now directs this cell to produce new HIV.

Step 5: Maturation and Budding

Description: Long strings of proteins (building blocks used to make living things) are cut up into smaller pieces using the enzyme protease. They are then assembled and bud off the cell to create new viruses.

7. Walk through the lifecycle with the group 3-4 times

8. The final time, remove all the steps and ask the group to help you go through the process.

Ask participants to yell out each step and you can post it on the poster or you can ask participants to take turns to post them on the poster.

Summary

Wrap up session by telling participants that they don't have to remember every detail of this, but having a basic understanding of the immune system and of the HIV lifecycle is important to understanding how medications work which will help them in their work with clients.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

IMMUNE SYSTEM AND HIV LIFE CYCLE ACTIVITY

SESSION HANDOUT # 1 of 2

HIV & the Immune System

The Immune System

- Is like a screen in a window….it keeps the bugs out.
- The body's defense against illness.
- It keeps the body healthy and prevents infections.
- It is made of cells, tissues and organs that work together to protect the body.

Parts Of The Immune System

- White Blood cells (CD4+ T helper cells)
- Lymph
- Thymus
- Spleen
- Bone marrow
- Antibodies

An Immune Response

- When a foreign substance (antigen) enters our bodies, our immune system goes those a series of steps to fight the foreign substance and protect our bodies.
- The antigen is like a "critter" that can cause an illness
  - Virus, fungi, bacteria, protozoa (like an insect)

Our Immune response

Some of the "players" include…

Antigen Presenting cells - Cells of the immune system that bring intruders to CD4+ T cells. (e.g. macrophages and dendritic cells)

CD4+ T-cells (also may be called "T4 helper cells", "T4 cells", or less accurately "T-cells". CD4+ T cells are the conductors of the immune system.

CD8+ T-cells - Some CD8+ T cells, when ordered by CD4+ cells will seek out and destroy infected cells.

B cells - During an immune response B-cells make antibodies.

Antibodies - Antibodies are made by B-cells, they attach to "critters", marking them for destruction by the immune system. Antibodies are specific to the "critter" (bacteria, virus, or other harmful toxins).

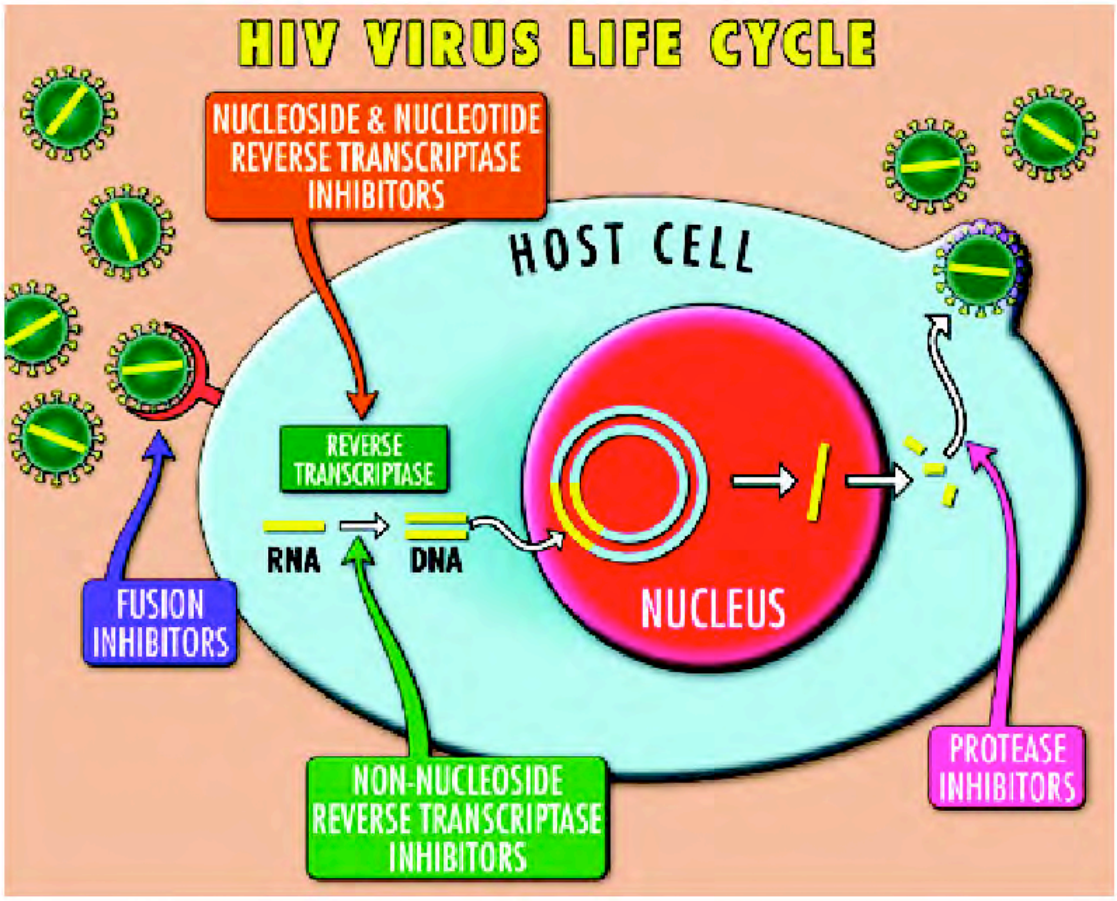
HIV and the Immune System

- HIV primarily attacks the CD4+ T cells
  - The CD4+ cells are the conductor of the immune system
  - CD4+ cells are changed into "HIV" producing cells.
  - Without a healthy conductor the immune system can't work properly.
- Let's talk about how HIV changes the CD4+ cells……

IMMUNE SYSTEM AND HIV LIFE CYCLE ACTIVITY

SESSION HANDOUT # 2 of 2

HIV LIFE CYCLE



The HIV lifecycle are the steps that HIV takes to enter and infect cells in our body.

In order for viruses to reproduce, they must infect a cell. Viruses are not technically alive: they are sort of like a brain with no body. In order to make new viruses, they must hi-jack a cell, and use it to make new viruses. Just as your body is constantly making new skin cells, or new blood cells, each cell often makes new proteins in order to stay alive and to reproduce itself. Viruses hide their own DNA in the DNA of the cell, and then, when the cell tries to make new proteins, it accidentally makes new viruses as well. HIV mostly infects cells in the immune system.

Each step of the life cycle is also a site where HIV medications work to slow down the infection.

HIV LIFE CYCLE AND DISEASE PROGRESSION REVIEW*

ABOUT THIS ACTIVITY

Time: 120 minutes

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

- Describe the life cycle of HIV and disease progression.

Training Methods: Lecture, Small Group Activity

In This Activity You Will…

- Review information on the HIV life cycle and disease progression (90 minutes)
- Provide trainees with a phrase that relates to the session i.e. HIV LIFE CYLE (2 minutes).
- Instruct each group to recall words/ phrases/concepts from the session that start with the same letter (28 minutes).

Materials:

- Handout – HIV Virus Life Cycle (as a full page in color)
- Handout – PowerPoint slides
- Computer for PowerPoint
- Projector Screen
- Markers
- Flip chart paper

Preparation: None

Instructions

1. Review the information on the Powerpoint slides with the group.
2. Next, instruct each table group to write HIV LIFE CYCLE down the left side of a page of flip chart paper.
3. Explain that each group should think of words or concepts from the presentation that fit each letter. For example, H could be Hispanics (a group that has a larger number of HIV infected than their proportion of the population) and there are at least 2 other H words/phrases besides HIV. **Answer: Human genetic material (RNA/DNA) or host cell**
4. Give the groups 10 minutes to fill up their page. If they have extra time, the groups can do the same for DISEASE PROGRESSION.
5. Ask the first group to present their list.
6. Ask the next groups to present only words/concepts that have not been mentioned before.

Summary

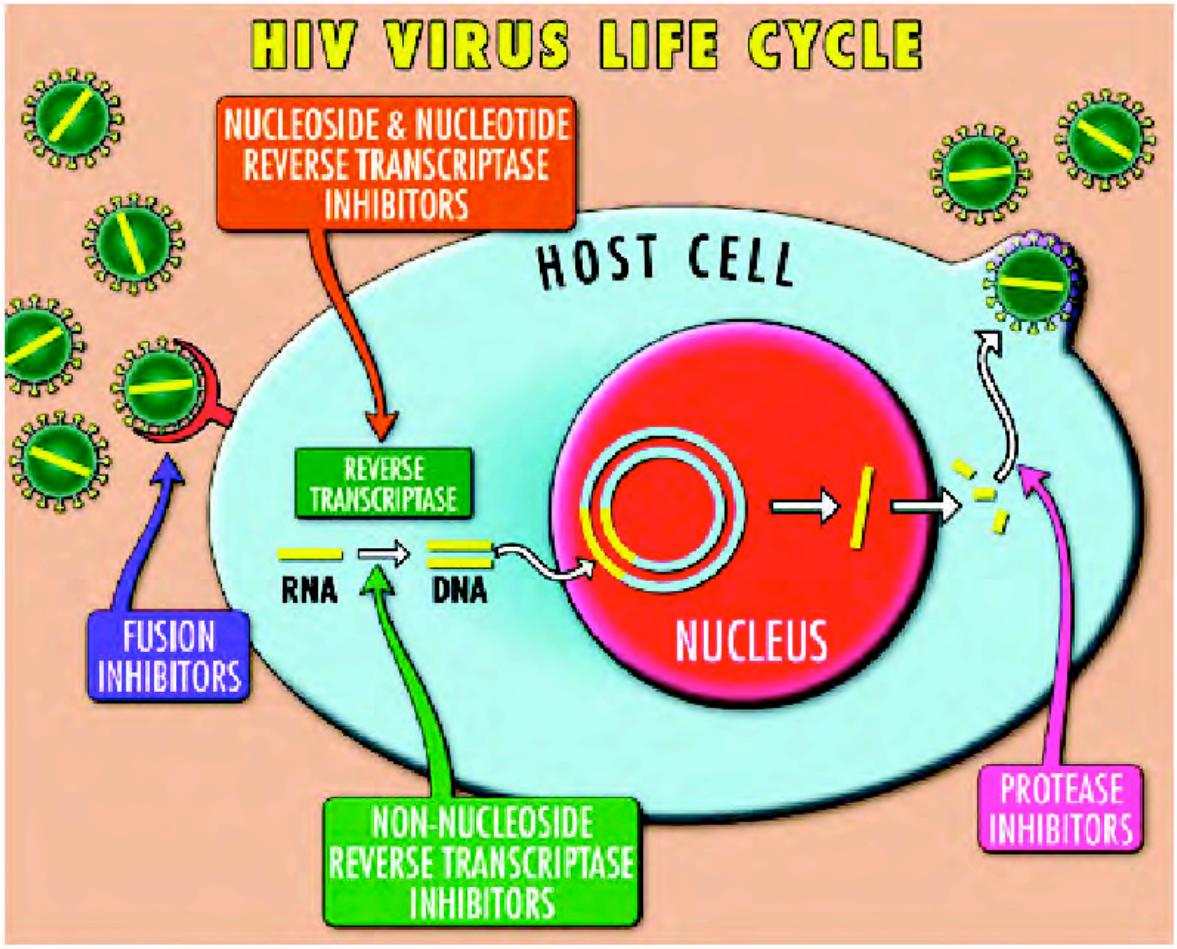
Wrap up by reminding participants that these are complex ideas and our goal has been to introduce them so that they understand more about HIV and will be able to better understand treatment issues.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Comprehensive Peer Worker Training, Peer Advanced Competency Training (PACT) Project Harlem Hospital Center, Division of Infectious Diseases, 2008.

HIV LIFE CYCLE AND DISEASE PROGRESSION

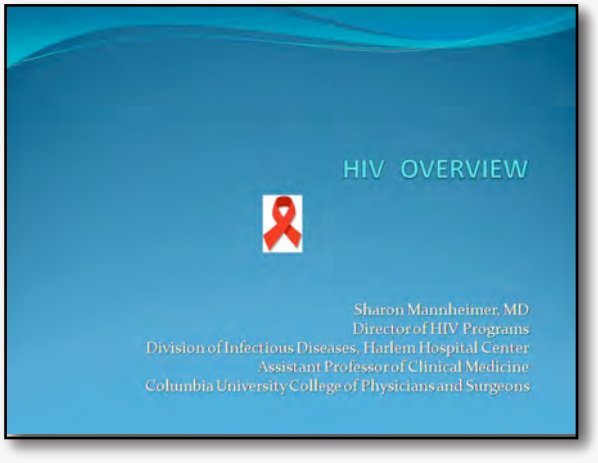
SESSION HANDOUT # 1 of 2

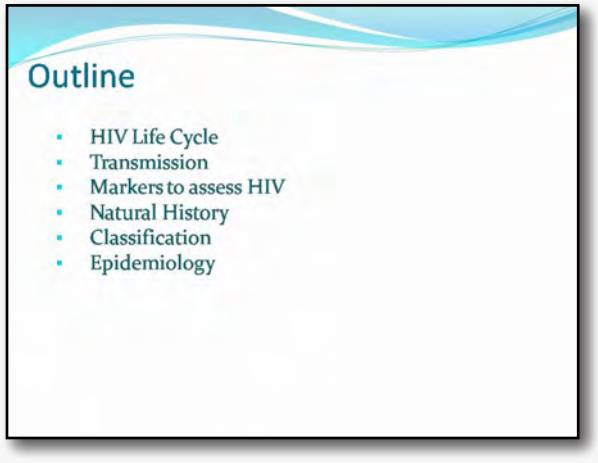
HIV LIFE CYCLE

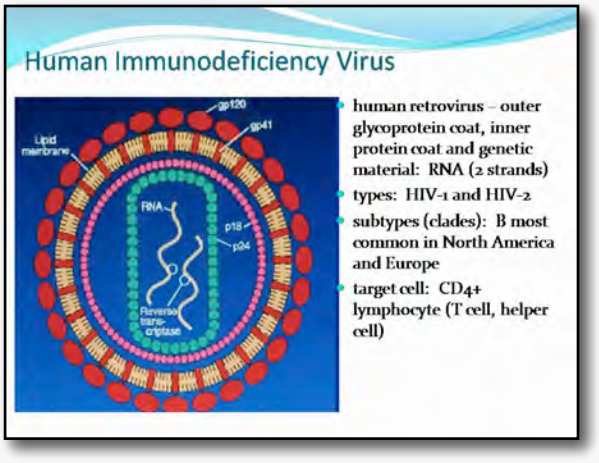


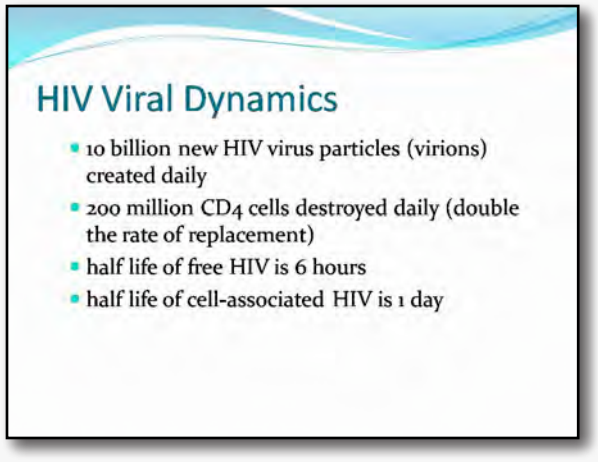
HIV LIFE CYCLE AND DISEASE PROGRESSION

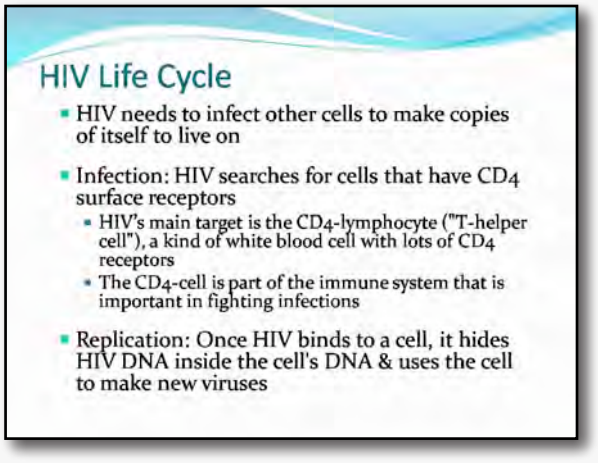
SESSION HANDOUT # 2 of 2

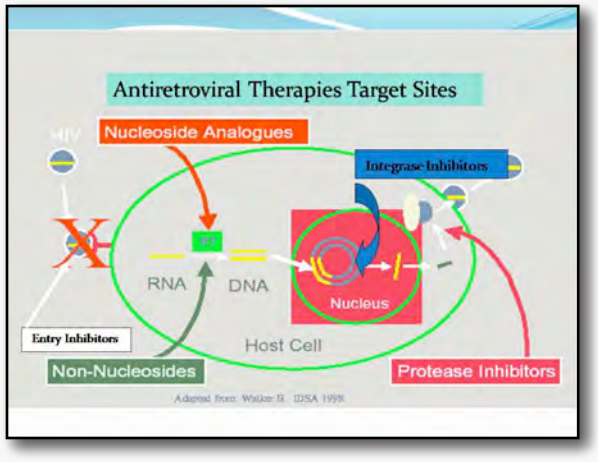












HIV LIFE CYCLE AND DISEASE PROGRESSION

SESSION HANDOUT # 2 of 2 (cont.)

STEP 1: Binding

- HIV binds to the CD_4+ receptor on outside of CD_4-cells
- allows HIV to enter cell
- Entry can be blocked by entry inhibitors (*Maraviroc recently FDA approved*)

STEP 2: Fusion

After binding CD_4 receptor:

- HIV and outside of CD_4 cell fuse together
- Allows entry of HIV genetic material (RNA) into CD_4 cell
- Can be blocked by fusion inhibitors (*Fuzeon*)

STEP 3: Reverse Transcription

- HIV's genetic material is carried in 2 strands of RNA
- HIV enzyme "reverse transcriptase" can copy HIV RNA into DNA
- Allows HIV genetic material to later combine with human genetic material (DNA)
- Reverse transcription can be blocked by:
  - Nucleoside Reverse Transcriptase Inhibitors (NRTIs) – e.g. AZT, epivir, videx, zerit, ziagen
  - Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) – e.g. sustiva, viramune

STEP 4: Integration

- HIV DNA is then carried to cell's nucleus (center)
- viral enzyme integrase hides viral DNA in cell's DNA
- When cell tries to make new proteins, it accidentally makes new HIV
- Integration can be blocked by integrase inhibitors
  - Isentress *(raltegravir)* now available

STEPS 5-6: Transcription & Translation

- HIV's genetic material in human cell's nucleus directs cell to make new HIV
  - New viral DNA strands are transcribed into messenger RNA (contains instructions to make new HIV)
  - mRNA strands are "translated" into new chains of viral proteins needed to make a new HIV virus

STEP 7: HIV Viral Assembly

- long chains of HIV proteins are cut up by HIV enzyme (protease) into smaller proteins to be packaged into a new virus
- new viral particles bud off host cell to create a new virus
- Each infected cell can make a lot of new viruses
- HIV assembly can be blocked by Protease Inhibitors (PIs) – e.g. Kaletra, Reyataz, etc..

VIRAL LIFE CYCLE*

ABOUT THIS ACTIVITY

Time: 1 hour, 55 minutes

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

- Understand how the HIV lifecycle works; that is, how it enters a CD4 cell, replicates and damages the immune system.
- Understand where in the viral life cycle the different classes of medications work to slow replication.
- Recognize terminology used in HIV treatment.

Training Methods: Video, Lecture, Large Group Activity

In This Activity You Will…

- Define HIV, AIDS, and modes of transmission and body fluids that have HIV (10 minutes).
- Show CD/DVD on HIV Viral Life Cycle (15 minutes).
- Refer to newsprint to complete acronym-AFRITAB (15 minutes).
- Definite stages of the viral life cycle, medications and common laboratory tests using power point slide set in conjunction with resources in participant book (60 minutes).
- Summarize in a large group the viral life cycle, medications and laboratory tests (15 minutes).

(continued next page)

Instructions

1. Briefly review a few HIV facts that may have been provided in a Level 1 training. It is useful to demonstrate this information in a variety of ways (videos, pictures, diagrams, etc).

HIV stands for Human Immunodeficiency Virus

H- HIV is transferred only to humans; is the virus that causes AIDS, spread through humans
I- Immune system the body's army; a collection of cells and substances.
V- A virus whose survival depends on cells in the host.
A- Acquired something specific has to happen to get it you just don't catch it like a "cold".
I- Same as above
D- Deficiency the body's defense is weakened
S- Syndrome collection of illnesses or symptoms, infections, the presence of illnesses or symptoms

Without treatment, people become subject to rare opportunistic infections

AIDS stands for Acquired ImmunoDeficiency Syndrome.

A-Acquired something specific has to happen to get it you just don't catch it like a "cold".
I– same as above
D-Deficiency the body's defense is weakened
S-syndrome collection of illnesses or symptoms, infections, the presence of illnesses or symptoms

Without treatment, people become subject to rare opportunistic infections

* This module comes from the Missouri People to People Training Manual, 2008.

VIRAL LIFE CYCLE

ABOUT THIS ACTIVITY (CONT.)

Materials:

- Laptop
- Projector with screen or blank white wall
- Newsprint (with adhesive on back to stick to wall)
- Markers
- Video – HIV Life Cycle (May be provided by pharmaceutical company or downloaded from http://www.metacafe.com/watch/334765/hiv_life_cycle/)
- Handout – HIV Life Cycle-The Big Picture
- Handout – Medications at Work in the HIV Life Cycle
- Handout – Definitions

Preparation:

- Print handouts

HIV is transmitted only 3 ways:

1. Vaginal, anal or oral sex with someone who is infected
2. Sharing needles with someone who is infected
3. A pregnant mother to her child through pregnancy, birth or breastfeeding

HIV is transmitted through only four body fluids:

1. Blood
2. Vaginal fluids
3. Semen
4. Breast milk

Once someone is infected with the HIV virus or is living with AIDS (assumption is that Western Blot – the confirmatory test has been done), we want our emphasis to be on treatment. Why treat? We want people to live a long healthy life. This disease is manageable. We know that the best approach to treatment is a holistic approach. Treatment is more than just drugs - it encompasses body, mind and soul.

2. The facilitator explains that the Viral Life Cycle is the foundation of learning about HIV infection and that all other educational components regarding the disease and treatment will build on their knowledge of the Viral Life Cycle.

3. The facilitator explains that HIV reproduction is a complex multi-stage process that involves several steps that must occur for the HIV virus to survive.

   Let's view the video on the Viral Life Cycle which will explain the steps in viral reproduction. Keep in mind that because people learn differently and most of the material in this section is didactic we are going to use several learning methods: we will view a video, use our Powerpoint as we go through the lecture and a HIV Life Cycle chart that you may find easy to use. Later you'll be able to identify where the anti-HIV medications are working. So let's get started!

4. Show video.

   Now, take out the HIV Life Cycle – The Big Picture to view

VIRAL LIFE CYCLE

the Viral Life Cycle in its entirety. [This is an example of Repetition and Senses from the MARS (Motivation, Association, Repetition, and Senses) model].

5. Move on to the Powerpoint presentation. Use these Talking Points during the presentation:

A. First let's define some terms to make sure we are all on the same page.

B. Overview: Several steps must occur for the HIV virus to survive

- Entry of virus into host cell
- Copying RNA into DNA
- Hiding HIV DNA in host cell nucleus
- Multiplication of HIV virus within cell
- Budding of virus

C. Write AFRI-TAB vertically on newsprint and explain that we will use the acronym AFRI-TAB to remember the stages in the Viral Life Cycle, you'll be surprised as to how it will help you recall each stage.

Step 1. Attachment

- HIV binds to receptors on CD4 T-cell
- A message is sent to the CD4 T-cell to let the virus in

Using the newsprint with AFRI-TAB tell the class this is our first acronym A and say "So Step 1 in our AFRI-TAB is Attachment" and write it on the newsprint.

Step 2. Fusion

- Once bound, the HIV virus is allowed to dump its contents into the CD4 T-cell
- Included in its contents are HIV RNA and reverse transcriptase

Tell the class this is our second acronym F and say "So Step 2 in our AFRI-TAB is Fusion" and write it on the newsprint.

Step 3. Reverse Transcription

- The HIV RNA is turned into double-stranded DNA within the CD4 T-cell
- The enzyme reverse transcriptase aids in this process

Tell the class this is our third acronym R and say "So Step 3 in our AFRI-TAB is Reverse Transcription" and write it on the newsprint.

Step 4. Integration

- Once the DNA is formed, it hides itself in the human DNA housed in the CD4 T-Cell nucleus

Tell the class this is our fourth acronym I and say "So Step 4 in our AFRI-TAB is Integration" and write it on the newsprint.

Step 5. Transcription

- Copies of HIV DNA are made and released from the nucleus in small 'packages'
- Each of the small 'packages' contains information for creating a new HIV virus

Tell the class this is our fifth acronym T and say "So Step 5 in our AFRI-TAB is Transcription" and write it on the newsprint.

VIRAL LIFE CYCLE

Step 6. Assembly

- The protease enzyme in the cell combines the DNA 'packages' to create active HIV virus

Tell the class this is our sixth acronym A and say "So Step 6 in our AFRI-TAB is Assembly" and write it on the newsprint.

Step 7. Budding

- Once the new HIV is formed, it pushes itself out of the CD4 T-cell
- The virus steals part of the CD4 T-cells protective coating

Tell the class this is our seventh and final acronym B and say "So Step 7 in our AFRI-TAB is Budding" and write it on the newsprint.

D. Take out the HIV Life Cycle The Big Picture handout and together let's fill in the stages of the cycle we've just learned. Continue with PowerPoint presentation

E. HIV

Virus is in the bloodstream but also hides in other cells (e.g. lymph nodes)

- Drugs don't reach these sequestered cells*
- That's why there is no cure
- Virus destroys CD4 cells which leads to:
  - Immune suppression
  - Opportunistic Infections and AIDS

* HIV hides in those cells which are "protected" – lymph nodes, brain, reproductive organs, not enough meds can get to those cells

How Medications Work Activity

(Refer to any HIV drug medications handout)

Currently, there are 5 classes of medications to fight HIV:

- Fusion inhibitors
- Reverse transcriptase inhibitors (2)
  - Nucleoside or "nukes"
  - Non-nucleoside "non-nukes"
- Integrase Inhibitors
- Protease inhibitors

Current research is aimed at medications that interfere with different steps of HIV replication. Each step represents a potential target for antiviral drug development.

F. Let's look at our Medications at Work in the HIV Life Cycle (handout) and connect the dots per se - look at the stages and determine at what stage each class of medication will work. (Continue with PowerPoint presentation.)

Fusion inhibitors

Question: At what stage does this medication work? – Attachment which is Step1 Fusion and Step 2 in our AFRI-TAB).

Question: What does it do?

- Inhibits the first step of HIV replication
- Prevents fusion of HIV virus to CD4 T-cell
- The virus is prevented from using host for replication

Short version: Blocks the lock on the door, it keeps the virus from entering)

Question: What are the types of fusion inhibitors?

- Efuvirtide (Fuzeon®)
- Maraviroc (Selzentry, Celsentri®)

Additional information (optional): A white or off-white powder that must be reconstituted with sterile water before injecting under the skin. Vials of Fuzeon come in a "kit" with bottles of sterile water and syringes. This drug must be taken with other anti-HIV drugs, and has shown effective when used with a protease inhibitor boosted with Norvir as part of the HIV regimen. No food restrictions and it needs to be stored at (77 F), if stored in refrigerator, it must be used within 24 hours and brought back to room temperature before injection. Approved March 2003.

Question: What are the side effects of Fusion Inhibitors?

- Skin reactions or Injection site reactions (ISRs). ISR's might appear as mild slight redness that can include itching, swelling, pain hardened skin, or hard lumps that might last up to a week
- Pneumonia
- Allergic reactions are possible
- Common Side Effects: headache, pain and numbness in feet or legs, dizziness, and loss of sleep.
- Good agent for people with kidney or liver problems because it has no known interactions with other HIV medications, no long-term side effects.

Fuzeon is the only medication metabolized by the liver, it is not expected to have any significant drug interactions and similar to other HIV drugs one can build up resistance if not taken as prescribed.

Question: What lab tests are important?

For **all** medication classes, the following labs are important for monitoring your health status:

Complete Blood Count (CBC)
- Red Blood Cell count
- Hematocrit and Hemoglobin
- White Blood Cell count
- Platelets

Lymphocyte tests
- CD4 count
- CD4%
- CD8 count CD8 percentage and T-cell ratio

Blood Chemistry Panel tests
- Liver function
- Kidney function
- Pancreatic function
- Lipid profile
  - Fasting
  - Blood sugar

Talking point: *Why isn't this medication prescribed first?*

1. It's an injection
2. It's not always the best drug
3. Just like other HIV drugs one can build up resistance if not taken as prescribed.

Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)

Question: At what stage does this medication work? – Reverse Transcriptase

Question: What does it do?

- The drugs attach to the reverse transcriptase enzyme.

- They inhibit reverse transcriptase, the enzyme responsible for turning HIV RNA into DNA.
- The drugs do not let the Reverse Transcriptase enzyme do its job, but a single mutation will ruin the relationship. This class is very unforgiving.
- They prevent the virus from replicating-making copies.

Short version: sits on Reverse Transcriptase and keeps it from working.

Question: What are the types of Non-nucleoside Reverse Transcriptase Inhibitors

- Delavirdine (Rescriptor®)
- Nevirapine (Virmune®)
- Efaviren (Sustiva®)
- Etravirine (Intelence®)
- Once-Daily Regimen Atripla (Efavirenz/ Emtricitabine/Tenofovir Disoproxil Fumarate®)- This is a combination NNRTI and NRTI (NRTI will be discussed in the next section).

Question: What are the side effects of Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)?

- Easily resistant (lose the entire drug class in most cases). Considered the unforgiving class of medications. Intelence does give some flexibility.
- Rash
- Headaches, Nausea, Vomiting
- Fatigue, Elevated Liver Enzymes
- Insomnia, Peripheral Neuropathy,
- Lypodystrophy
- Skin discoloration, ingrown toenails.
- Increased Triglycerides-Sustiva
- False positive tests for Marijuana

Question: What lab tests are important?

Blood Chemistry Panel tests
- Liver function
- Lipid profile
  Fasting
  Blood sugar

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)

Question: At what stage does this medication work? – Reverse Transcriptase

Question: What do Nucleoside Reverse Transcriptase Inhibitors do?

- They inhibit reverse transcriptase which is an enzyme that HIV needs in order to infect cells.
- The mechanism of action is the same as the NNRTIs, however, these medications are structurally different.
- The drug binds to the enzyme at a different place other than the NNRTI's.

Short version: Fakes out the virus and messes up the translation.

Question: What are the types of Nucleoside Reverse Transcriptase Inhibitors?

- Lamivudine (Epivir®)
- Zidovudine (Retrovir®)
- Abacavir (Ziagen®)
- Emtricitabine (Emtriva®)
- Didanosine (Videx®)
- Tenofovir (Viread®)
- Stavidome (Zerit®)
- Truvada
- Epzicom
- Combivir
- Hivid

- Trizivir
- Once-Daily Regimen Atripla (Efavirenz/ Emtricitabine/Tenofovir Disoproxil Fumarate®)- This is a combination NNRTI and NRTI.

Question: What are the side effects of Nucleoside Reverse Transcriptase Inhibitors (NRTIs)?

- Pancreatitis
- Lactic Acidosis
- Increased Triglycerides - Zerit
- Lipoatrophy – alteration of fat deposits Zerit & Retrovir (AZT) may also be linked to other drugs
- Anemia, Liver Dysfunction, "Drunkenness, Odd Dreams, Hallucinations
- Central Nervous System Disturbances
- Common Side Effects- headaches, fevers, fatigue, upset stomach, vomiting, diarrhea, rash, nausea

Question: What lab tests are most important?

Complete Blood Count (CBC)
- Red Blood Cell count
- Hematocrit and Hemoglobin
- White Blood Cell count
- Platelets

Blood Chemistry Panel tests
- Liver function
- Kidney function

Additional information- Test recommended by The Department of Health and Human Services (HHS): HLA-B5701 (Abacavir HSR) – A hypersensitivity reaction test used to detect whether an individual has genetic markers that exhibit sensitivities to Ziagen. Studies show that abacavir HSR is highly associated in whites. (73% were white, 9% black, 10% Hispanic and 8% Asian (primarily Thai). Their mean age was 40.9 years, and 24% were female.

Integrase Inhibitors

Question: At what stage does this medication work? – Integration

Question: What do Integrase Inhibitors do?

- Block viral DNA and keeps HIV from binding to the host cell DNA.
- Prevents viral replication.

Question: What are the types of Integrase Inhibitors?

- Raltegravir (Isentress®)

There is one other candidate for this class of drugs that is not yet approved.

Question: What are the side effects of Integrase Inhibitors?

Common side effects are headaches, fevers, fatigue, upset stomach, vomiting, explosive diarrhea, rash, nausea

Integrase Inhibitors are the newest class of HIV drugs and little is known about their potential side effects, especially metabolic side effects. It's impossible to know the long term side effects of a drug until many patients have been on it for many months. It is reasonable to assume that integrase inhibitors may have some unanticipated side effects, but they seem unlikely to cause the same effects on fat and cholesterol we have seen with earlier protease inhibitors.

Question: What lab tests are important?

No significant tests for this particular drug have been identified yet.

VIRAL LIFE CYCLE

Protease Inhibitors (PIs)

Question: At what stage does this medication work? – Assembly
Question: What do Protease Inhibitors do?

- These drugs block the protease enzyme.
- When new viral particles break off from an infected cell, protease cuts long protein strands into the parts needed to assemble a mature virus. When protease is blocked, the new viral particles cannot mature.
- Prevent the piecing together of HIV DNA small packages.
- Prevents a new HIV from forming.
- PI's can tolerate more mutations- 95% adherence is always best.)

Short version – PI meds stop the scissors from working because they stop protease from cutting and arranging DNA, pulling it all together into a cut and paste format to make more virus.

Question: What are the types of Protease Inhibitors?

- Fosamprenavir (Lexiva®)
- Indinavir (Crixivan®)
- Saquinavir (Invirase®, Fortovase®)
- Lopinavir/ritonavir (Kaletra®)
- Atazanavir (Reyataz®)
- Nelfinavir (Viracept®)
- Tipranavir (Aptivus®)
- Ritonavir (Norvir®)
- Amprenavir (Agenerase®)
- Darunavir (Prezista®)

Question: What are the side effects of Protease Inhibitors?

Protease inhibitors are the most complex with regard to drug interactions, dosing and restrictions.

- Increased Cholesterol and Triglycerides
- Lipodystrophy
- Onset or worsening of Diabetes
- Liver toxicity, Kidney Stones
- Increased bleeding in Hemophiliacs
- Common Side Effects-headaches, fevers, fatigue, upset stomach, vomiting, explosive diarrhea, rash, nausea
- Yellowing of eyes

Question: What are the most important lab tests?

Blood Chemistry Panel tests
- Lipid profile
  Fasting
  Blood sugar

How Medications Work Activity (cont.)

Now that we've gone through the Viral Life Cycle and the 5 classes of medications and we've showed you where those medications work at slowing replication of the virus at all stages. Let's pull out the HIV drug medications handout and check off the medications that you currently take. I want you to look at the 7 stages of reproduction and identify where your particular meds are working in stages 1-7 of HIV reproduction from the diagram.

G. Review Long Term Complications and the table that correlates classes of medications with long term complications

Note that Lipid Abnormalities-Cardiovascular Risk
- Increase in LDL (cholesterol). Goal for LDL is to be less than 200
- Increase in Triglycerides
- Increased risk of stroke
- Increased risk of heart attack

VIRAL LIFE CYCLE

TRAINING TIPS

- Although this material is very dense, the AFRI-TAB acronym is a very user-friendly way of providing a structure for the information – peers like it a lot
- If this module is paired with Module 4f. How Medications Work, participants are given the opportunity to review their own medications and how they impact the viral life cycle. This is a more interactive exercise and reinforces the learning process.

• The slide shows:
    1. Normal Artery Lining (red is normal blood flow)
    2. Shows some plaque build-up (the yellow is fat build up)
    3. Shows a blocked artery

Note that other non-HIV risk factors include age, smoking , obesity and family history.

Lifestyle Changes, including diet, exercise, and medications can help. Doctors will usually start an anti-cholesterol medication to treat Hyperlipidemia and encourage changes in diet/exercise habits)

Discuss Lipodystrophy:
- Redistribution of body fat
- Visceral fat deposits
- Buffalo hump
- Crix belly
- Peripheral wasting
- Consider switching therapies as it is potentially reversible
- Plastic surgery for irreversible cases

H. Goals of Therapy:

- Suppress HIV VL to <50 copies/ml for as long as possible
- Improve quality of life
- Preserve medications for future use
- Restore immune function

Review the General Guidelines that providers use to assess when to start HAART (see chart on PowerPoint slide) and Principles of HAART

- HIV virus has 1 goal: replication
- Triple-drug therapy
    "Attack" virus in several different ways
    Slow down viral replication
    Allow immune system to 'recover'

I. Benefits and risks of delayed treatment

Benefits

- Client readiness
- Avoid negative effects on quality of life
- Delay development of drug resistance
- Preserve future drug options

Risks

- Possible irreversible immune depletion
- Possible greater difficulty suppressing viral replication
- Untimely Death

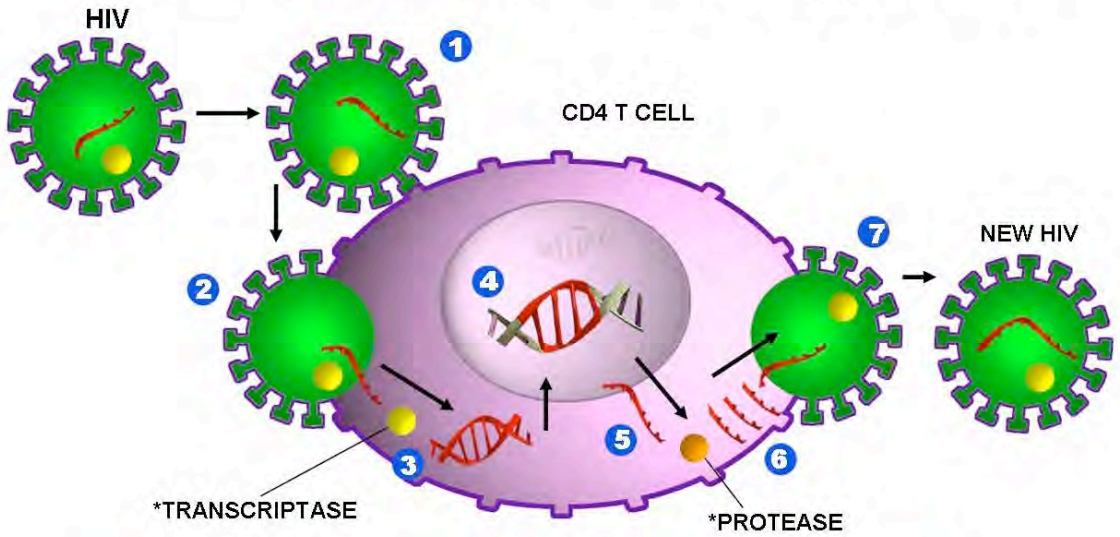
Summary

Wrap up session.

* This module is part of the online toolkit *Building Blocks to Peer Success*. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

SESSION HANDOUT # 1 of 3

HIV Life Cycle - The Big Picture



Attachment

1. HIV binds to receptors on the CD4 T-cell.

- A message is sent to the CD4 T-cell to let the virus in.

Fusion

2. Once bound, the virus is allowed to dump its contents into the CD4 T-cell.

- Included in its contents are HIV RNA and reverse transcriptase.

Reverse Transcription

3. The HIV RNA is turned into double-stranded DNA within the CD4 T-cell.

- The enzyme **reverse transcriptase* aids in this process.

Integration

4. Once the DNA is formed, it hides itself in the human DNA housed in the CD4T-cell nucleus.

Transcription

5. Copies of HIV DNA are made and released from the nucleus in small packages'.

- Each of the small packages' contains information for creating a new HIV.

Assembly

6. The **protease* enzyme in the cell combines the DNA 'packages' to create active virus.

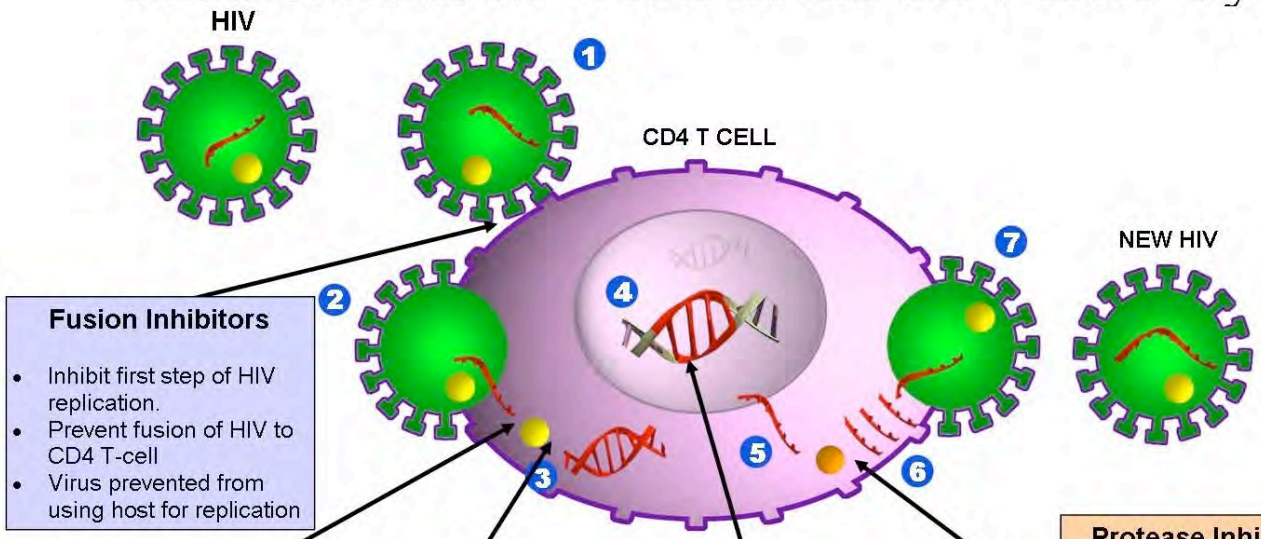
Budding

7. Once the new HIV is formed, it pushes itself out of the CD4 T-cell

- The virus steals part of the CD4 T-cell protective coating.

SESSION HANDOUT # 2 of 3

Medications at Work in the HIV Life Cycle



Fusion Inhibitors

- Inhibit first step of HIV replication.
- Prevent fusion of HIV to CD4 T-cell
- Virus prevented from using host for replication

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)

- Inhibit reverse transcriptase—the enzyme responsible for turning HIV RNA into DNA
- Prevents virus from replicating

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)

- Inhibit reverse transcriptase. This drug binds to the enzyme at a different place than the NNRTIs.
- Prevents virus from replicating

Integrase Inhibitors

- Blocks viral DNA and keeps HIV from binding to the host cell DNA
- Prevents virus from replicating

Protease Inhibitors

- Prevents the piecing together of HIV DNA into small 'packages'
- Prevents the formation of new HIV

Attachment	Fusion	Reverse Transcription	Integration	Transcription	Assembly	Budding
1	2	3	4	5	6	7

VIRAL LIFE CYCLE

SESSION HANDOUT # 3 of 3

DEFINITIONS

AIDS: A result of human immunodeficiency virus (HIV) infection, which makes the immune system less able to fight infection. 2. (Acquired Immunodeficiency Syndrome) refers to the late stages of the disease of a person who is infected with the virus called HIV. A CD4 count below 200 and an opportunistic infection must be present before a person is said to have AIDS.
Antibodies: a substance in the blood that forms when disease agents such viruses, bacteria, fungi and parasites invade the body. Although antibodies usually defend the body against invading disease agents, HIV antibodies, over time, give no such protection. 2. are a type of protein that is produced by your body when a virus enters your body.

Antiretroviral agents: Drugs that slow the pace of HIV infection by suppressing the ability of HIV to replicate. 2. are substances used against retroviruses such as HIV.

CD4 T-Cells: A type of white blood cell essential to the body's immune system. Helps regulate the immune system and control B cell and macrophage functions. 2. Important cells in mounting the body's defense against infection. These "helper" cells not only fight infection, but recruit other immune cells to the site of infection to help kill infection-causing bacteria and viruses. The HIV virus uses the CD4 T-cells to make more HIV viruses. By doing this, HIV destroys the CD4 cell. Without CD4 T-cells, the body is not able to defend itself against bacterial and viral infections.

Combination therapy: Treatments, sometimes called "drug cocktails," involving a combination of three or more antiviral drugs that can dramatically inhibit HIV replication. 2. refers to two or more drugs or treatments used together to achieve the best results against HIV infection and/or AIDS. Combination therapy may be more effective in decreasing viral load. An example of combination therapy would be the use of two nucleoside analog drugs plus either a protease inhibitor or a non-nucleoside reverse transcriptase inhibitor.

DNA: The chain of molecules in genes, which carries genetic information that helps cells reproduce. DNA is the main ingredient of chromosomes, which transmit genetic information. 2. The chemical make-up of living things. DNA contains 2 copies of information.

HIV: The virus that causes AIDS. HIV weakens several body systems and destroys the body's immune system, making it easier for life-threatening opportunistic infections and cancers to invade the body. 2. A virus that can only survive in host cells. It caries with it RNA, but must make DNA to replicate.

Host: Used here to describe where a germ lives. For example, a person who has HIV is the host for the virus. The animal or cell that another organism lives in. In HIV human CD4 T-cells are the host for HIV virus.

VIRAL LIFE CYCLE

SESSION HANDOUT # 3 of 3 (cont.)

DEFINITIONS (CONT.)

Nucleus: The core of CD4 T-cells, it contains human DNA.

Opportunistic infections: A variety of infections, such as Pneumocystis carinii pneumonia, that occur in people whose immune systems are weak for various reasons, including disease, such as HIV infection. 2. illnesses caused by different organisms, some of which usually do not cause disease in people with a normal immune system. Opportunistic infections of the lungs, brain, eyes, and other organs can develop in people with HIV infection.

Protease inhibitors: (PIs) A new class of antiviral drugs. These drugs suppress HIV by blocking infected cells from making copies of HIV, which are capable of infecting other cells. 2. is a class of antiretroviral drugs that bind to and block HIV protease to prevent the production of new infectious viral particles.

RNA: A nucleic acid found in the contents of a cell surrounding the nucleus. Some retroviruses, such as HIV, carry RNA instead of the more usual DNA. 2. The chemical make-up of living things. RNA contains only 1 copy of information and needs another copy to replicate.

Retrovirus: A type of virus that has RNA instead of DNA as its genetic material. It uses an enzyme called reverse transcriptase to become part of the host cells' DNA. This allows many copies of the virus to be made in the host cells. The virus that causes AIDS, the human immunodeficiency virus (HIV), is a type of retrovirus.

Viral load test: A marker that measures the amount of HIV RNA in the blood. Used by doctors to help to help make decisions about treatment. The lower the viral load, the longer a person with HIV has before developing AIDS and the longer his or her survival time. 2. is the amount of HIV RNA in your blood. Tells you how active the virus is in your body. Higher numbers mean you have more virus in your body.

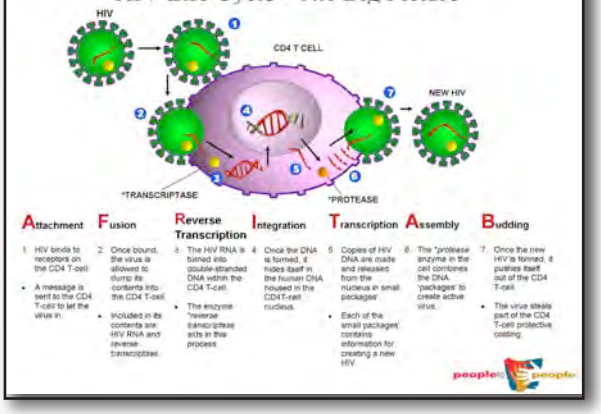
VIRAL LIFE CYCLE

SESSION POWERPOINT

THE HIV LIFE CYCLE

Understanding How Antiretroviral Medications Work

HIV Life Cycle - The Big Picture



DEFINITIONS

- AIDS (Acquired Immune Deficiency Syndrome): refers to the late stages of the disease of a person who is infected with the virus called HIV. A CD4 count below 200 and/or an opportunistic infection must be present before a person is said to have AIDS.
- Antibodies: are a type of protein that is produced by your body when the virus enters your body.
- Antiretroviral Agents (ARVs): are substances used against retroviruses such as HIV.

DEFINITIONS

- CD4 T-Cell: Important cells in the human body for mounting the body's immune defense against infection. These "helper" cells not only fight infection, but recruit other immune cells to the site of infection to help kill infection-causing bacteria and viruses. The HIV uses the CD4 T-cells to make more HIV. By doing this, HIV destroys the CD4 cell. Without CD4 T-cells, the body is not able to defend itself against bacterial and viral infections.

DEFINITIONS

- Combination therapy: refers to two or more drugs or treatments used together to achieve the best results against HIV infection and/or AIDS. Combination therapy may be more effective in decreasing viral load.

  Examples:
  - **NNRTI + 2 NRTIs**
  - **1 or 2 PIs + 2 NRTIs**
  - **1 Boosted PI + NRTIs**

DEFINITIONS

- Host: The animal or cell that another organism lives in. In HIV human CD4 T-cells are the host for HIV.
- Nucleus: The core of CD4 T-cells, it contains human DNA.

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

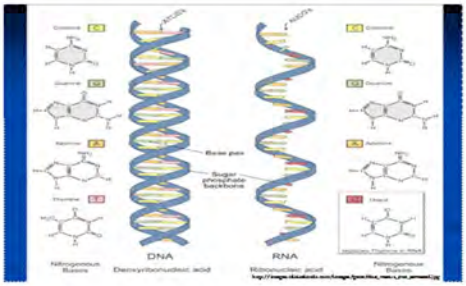
DEFINITIONS

- DNA: The chemical make-up of living things. DNA contains 2 copies of information.
- RNA: the chemical make up of living things. RNA contains only 1 copy of information and needs another copy to replicate.
- HIV: A virus that can only survive in host cells. It carries with it RNA, but must make DNA to replicate.

DEFINITIONS

- Retrovirus: A type of virus that has RNA instead of DNA as its genetic material. It uses an enzyme called reverse transcriptase to become part of the host cell's DNA. This allows many copies of the virus to be made in the host cell.

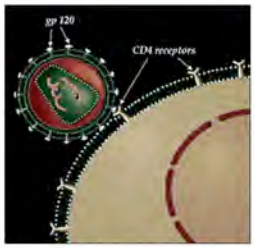
DNA versus RNA



OVERVIEW

- Several steps must occur for the HIV to survive
  - Entry of virus into host cell
  - Copying RNA into DNA
  - Hiding HIV DNA in host cell nucleus
  - Multiplication of the virus within cell
  - Budding of virus

ATTACHMENT



- HIV binds to receptors on CD4 T-cell
- A message is sent to the CD4 T-cell to let the virus in

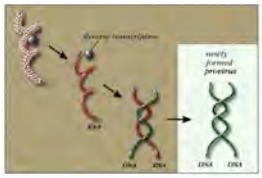
FUSION

- Once bound, the virus is allowed to dump its contents into the CD4 T-cell
- Included in its contents are HIV RNA and reverse transcriptase

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

REVERSE TRANSCRIPTION

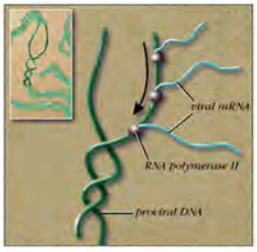


- The HIV RNA is turned into double-stranded DNA within the CD4 T-cell
- The enzyme reverse transcriptase aids in this process

INTEGRATION

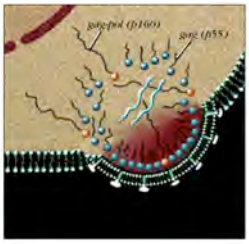
- Once the DNA is formed, it hides itself in the human DNA housed in the CD4 T-Cell nucleus

TRANSCRIPTION



- Copies of HIV DNA are made and released from the nucleus in small 'packages'
- Each of the small 'packages' contains information for creating a new HIV

ASSEMBLY



- The protease enzyme in the cell combines the DNA 'packages' to create active virus

BUDDING

- Once the new HIV is formed, it pushes itself out of the CD4 T-cell
- The virus steals part of the CD4 T-cells protective coating

HIV

- Virus is in the bloodstream but also hides in other cells (e.g. lymph nodes)
  - Drugs don't reach these sequestered cells*
  - That's why there is no cure
- Virus destroys CD4 cells which lead to:
  - Immune suppression
  - Opportunistic infections and AIDS

*HIV hides in cells in certain organs which are "protected" by the body: lymph nodes, the brain, reproductive organs. Not enough meds can get to those cells.

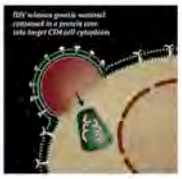
VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

How Medications Work:
Drug Classes and Side Effects

FUSION INHIBITORS

- Inhibit first step of HIV replication
- Prevent fusion of HIV to CD4 T-cell
- Virus is prevented from using host for replication
- Enfuviritide (Fuzeon®)-BID



Fusion Inhibitors
Side Effects

- Skin reactions or Injection site reactions (ISRs). IRS's might appear as mild slight redness that can include itching, swelling, pain hardened skin, or hard lumps that might last up to a week.
- Pneumonia
- Allergic reactions are possible
- Common Side Effects: headache, pain and numbness in feet or legs, dizziness, and loss of sleep
- *Good agent for people with kidney, liver function problems, and drug interactions with other medications. This drug has no long-term side effects and is the only anti-HIV drug not processed through the liver.*

LABS

- **Fusion/Entry Inhibitors**
  - **Complete Blood Count (CBC)**
    - Red Blood Cell count
    - Hematocrit and Hemoglobin
    - White Blood Cell count
    - Platelets
  - **Lymphocyte tests**
    - CD4 count
    - CD4%
    - CD8 count CD8 percentage and T-cell ratio
  - **Blood Chemistry Panel tests**
    - Liver function
    - Kidney function
    - Pancreatic function
    - Lipid profile
      - Fasting
      - Blood sugar

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTIs)

- Inhibit reverse transcriptase—the enzyme responsible for turning HIV RNA into DNA
- Prevents virus from replicating
- Delavirdine (Rescriptor®)-3x daily
- Nevirapine (Viramune®)-BID
- Efavirenz (Sustiva®)-daily
- Etravirine (Intelence®)-2x daily

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTIs)
Side Effects

- Easily resistant (lose the entire drug class)
- Rash
- Headaches, Nausea, Vomiting
- Fatigue, Elevated Liver Enzymes
- Insomnia, Peripheral Neuropathy,
- Lypodystrophy
- Skin discoloration, ingrown toenails.
- Increased Triglycerides-Sustiva
- False positive tests for Marijuana

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

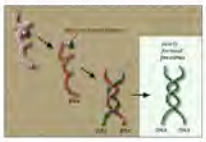
LABS

- NNRTIs or NON-NUKES
  - Complete Blood Count (CBC)
    - Red Blood Cell count
    - Hematocrit and Hemoglobin
    - White Blood Cell count
    - Platelets
  - Lymphocyte tests
    - CD4 count
    - CD4%
    - CD8 count CD8 percentage and T-cell ratio
  - Blood Chemistry Panel tests
    - Liver function
    - Kidney function
    - Pancreatic function
    - Lipid profile
      - Fasting
      - Blood sugar

NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTIs)

- Inhibit reverse transcriptase. Drug binds to the enzyme at a different place than the NNRTIs

- Lamivudine (Epivir®)-1 to BID
- Zidovudine (Retrovir®)-BID
- Abacavir (Ziagen®)-BID
- Emtricitabine (Emtriva®)-daily
- Didanosine (Videx®)-1 to BID
- Tenofovir (Viread®)- daily
- Stavudine (Zerit®)-BID
- Truvada-daily
- Epizom-daily
- Videx-daily
- Combivir- bid
- Hivid- tid



NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTIs) Side Effects

- Pancreatitis
- Lactic Acidosis
- Increased Triglycerides - Zerit
- Lipoatrophy – alteration of fat deposits Zerit & Retrovir (AZT) may also be linked to other drugs
- Anemia, Liver Dysfunction, "Drunkenness, Odd Dreams, Hallucinations
- Central Nervous System Disturbances
- Common Side Effects- headaches, fevers, fatigue, upset stomach, vomiting, diarrhea, rash, nausea

LABS

- NRTIs or NUKES
  - Complete Blood Count (CBC)
    - Red Blood Cell count
    - Hematocrit and Hemoglobin
    - White Blood Cell count
    - Platelets
  - Lymphocyte tests
    - CD4 count
    - CD4%
    - CD8 count CD8 percentage and T-cell ratio
  - Blood Chemistry Panel tests
    - Liver function
    - Kidney function
    - Pancreatic function
    - Lipid profile
      - Fasting
      - Blood sugar

INTEGRASE INHIBITORS

- Newest class of drugs that work within the cell nucleus.
- Blocks viral DNA and keeps HIV from binding to the host cell DNA.
- Prevents viral replication.

- Raltegravir (Isentress)– 1 to BID

INTEGRASE INHIBITORS Side Effects

- Diarrhea
- Nausea
- Headaches, fevers

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

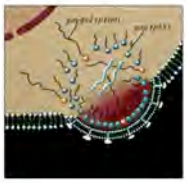
LABS

- **Integrase Inhibitor**
- (Complete Blood Count (CBC)
  - Red Blood Cell count
  - Hematocrit and Hemoglobin
  - White Blood Cell count
  - Platelets
- Lymphocyte tests
  - CD4 count
  - CD4%
  - CD8 count CD8 percentage and T-cell ratio
- Blood Chemistry Panel tests
  - Liver function
  - Kidney function
  - Pancreatic function
  - Lipid profile
    - Fasting
    - Blood sugar

PROTEASE INHIBITORS

- Prevent the piecing together of HIV DNA into small 'packages'
- Prevents formation of new HIV

- Fosamprenavir (Lexiva®)-1 to bid
- Indinavir (Crixivan®)-tid
- Saquinavir (Invirase®, Fortovase®)-2 to3x
- Lopinavir/ritonavir (Kaletra®)-1 to bid
- Atazanavir (Reyataz®)-daily
- Nelfinavir (Viracept®)-2 to 3x
- Tipranavir (Aptivus®)-
- Norvir(Ritonavir®)-1 to bid
- Agenerase (Amprenavir®)-1 to bid
- Aptivus (Tipranavir®)- 1 to bid
- Prezista (Darunavir®)- 1 to bid



PROTEASE INHIBITORS
Side Effects

- Increased Cholesterol and Triglycerides
- Lipodystrophy
- Onset or worsening of Diabetes
- Liver toxicity, Kidney Stones
- Increased bleeding in Hemophiliacs
- Common Side Effects-headaches, fevers, fatigue, upset stomach, vomiting, explosive diarrhea, rash, nausea
- Yellowing of eyes

LABS

- **PI's or Protease Inhibitors**
  - **Complete Blood Count (CBC)**
    - Red Blood Cell count
    - Hematocrit and Hemoglobin
    - White Blood Cell count
    - Platelets
  - **Lymphocyte tests**
    - CD4 count
    - CD4%
    - CD8 count CD8 percentage and T-cell ratio
  - **Blood Chemistry Panel tests**
    - Liver function
    - Kidney function
    - Pancreatic function
    - Lipid profile
      - Fasting
      - Blood sugar

Once-Daily Regimen

- Atripla (Efavirenz/Emtricitabine/Tenofovir Disoproxil Fumarate ®) – taken once a day

Side Effects: related to class of drugs

(i.e., it contains Sustiva, so there might be odd dreams)

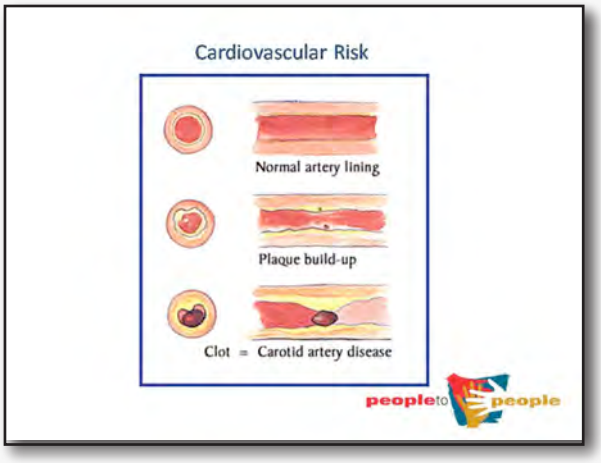
Long Term Complications

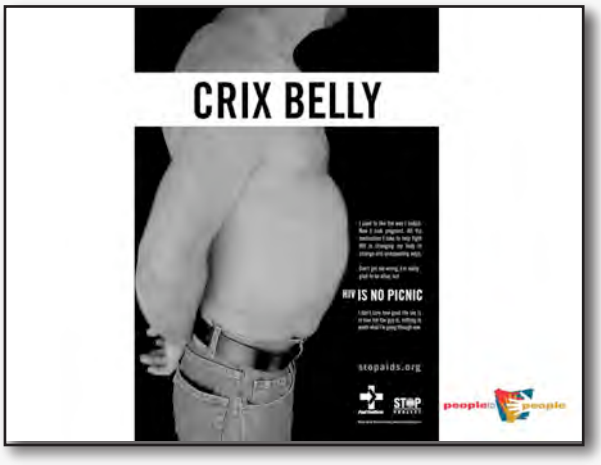
- Hyperglycemia
  - Increased blood sugar levels
  - 40% who start on PIs develop diabetes, causes insulin resistance and glucose intolerance
- Lactic Acidosis
  - Rare
  - Potentially fatal
  - High levels of Lactic acid in the blood
- Decreased Bone Mineral Density
  - Avascular Necrosis of the hip joint where the blood supply is decreased in your hip joint bone therefore there is decreased nutrients in the area
  - Not clearly understood
  - Drug Therapy include Calcium and Vitamin D
  - Weight Bearing Exercises

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

Adverse Reaction	NRTIs	NNRTIs	PIs
Lactic Acidosis	++	--	--
Lipid Changes	--	+	++
Insulin Resistance	--	--	++
Fat Redistribution	+	--	++





Your Medications at Work in the Cycle

Activity:

HIV drug medications list

"Medications at Work in the Cycle" handout

VIRAL LIFE CYCLE

SESSION POWERPOINT (cont.)

people to people

Choosing Medications

Goals Of Therapy

- Suppress HIV VL to <50 copies/ml for as long as possible
- Improve quality of life
- Preserve medications for future use
- Restore immune function

Indications for HAART
(general guidelines)

Clinical Category	CD4 Cell Count	Plasma HIV RNA	Recommendation
AIDS-defining illness or severe symptoms	Any value	Any value	Treat
Asymptomatic	CD4 T cells <200/ml	Any value	Treat
Asymptomatic	CD4 T cells >200/ml but <350/ml	Any value	Treatment should be offered following a full discussion of pros and cons with each patient
Asymptomatic	CD4 T cells >350/ml	≥100,000	Most clinicians recommend deferring therapy, but some clinicians will treat
Asymptomatic	CD4 T cells >350/ml	<100,000	Defer therapy

Principles of HAART

- HIV virus has 1 goal: replication
- Triple-drug therapy
  - "Attack" virus in several *different* ways
  - Slow down viral replication
  - Allow immune system to 'recover'

Benefits/Risks of Delayed Therapy

- Benefits
  - Client readiness
  - Avoid negative effects on quality of life
  - Delay development of drug resistance
  - Preserve future drug options
- Risks
  - Possible irreversible immune depletion
  - Possible greater difficulty suppressing viral replication
  - Untimely Death

READING OUR LABS*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- Recognize the types of laboratory tests to monitor a person's HIV care and treatment.
- Understand why laboratory tests are important in monitoring health and how they can be used to manage care.

Training Methods: Lecture, Large Group Discussion

In This Activity You Will…

- Conduct the PowerPoint presentation (20 minutes).
- Go over Sample Lab Reports (20 minutes).
- Review the handouts (20 minutes).

Materials:

- PowerPoint slides
- Handout– ACRIA Handbook: "Understanding Your Lab Results" (p 89-108)- can be downloaded from http://www.acria.org/index.php?q=publications/educational-booklets/lab-results
- Handout– Project Inform's: "Blood Work: A Useful Tool For Monitoring HIV" (p109-120)- can be downloaded from http://www.projectinform.org/info/bloodwork/index.shtml.

Preparation:

- Ask participants to bring in a copy of their own labs. Obtain 3-5 Sample Lab Reports as a backup.
- Review the PowerPoint presentation and the handouts

Instructions

1. Conduct the PowerPoint presentation
2. Review Sample Lab Reports handout.
3. Review the handouts:

- ACRIA Handbook: "Understanding Your Lab Results"
- Project Inform's: "Blood Work A Useful Tool For Monitoring HIV"

Summary

- Trends are important. Look at your lab reports over a period of time, rather than one at a time.
- Humans can make mistakes, so always make sure the lab report you are reading belongs to you.
- Remember that each laboratory uses a different machine, so what may be out of range for one lab may not be for another.
- Be sure to check the name of the laboratory your blood sample is sent to. Your doctor may not tell you that they have changed labs.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

READING OUR LABS

SESSION HANDOUT

About the Numbers

Understanding Your Labs

What is HIV?

- HIV (**H**uman **I**mmunodeficiency **V**irus) is a virus that attacks your body's immune system
- The immune system = millions of cells that fight germs and infections
  - HIV attacks white blood cells called CD4 cells (also known as T-helper cells) and reduces their numbers

What do HIV medicines do?

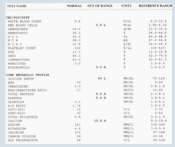
- Help to control HIV by reducing the growth of new virus
- Help keep your viral load down
  - Viral load = the amount of HIV in your blood
- HIV medicines do not cure HIV infection or AIDS and do not reduce the risk of HIV transmission to others

Reduce
viral load

Tracking your health

Lab tests

- HIV viral load
- CD4 cell count
- Complete blood count (CBC)
- Lipids
- Glucose (blood sugar)
- Liver function
- Kidney function
- HIV drug resistance



Why are labs important?

- Lab tests can help you and your healthcare provider:
  - Decide when to start HIV treatment
  - Decide which HIV medicines are best for you
  - Know whether or not your medicines are working
  - Know if any of your medicines are causing side effects
  - Watch for other infections and problems

*Understanding your labs helps you **take charge of your health.***

When should lab tests be done?

- When you are first diagnosed with HIV, and then usually every 3 to 6 months, or whenever your healthcare provider feels they are necessary
- When you start taking medicines and before you switch to different medicines

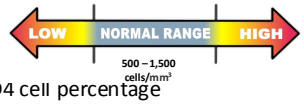
*Even when you are feeling OK, labs can tell you things about your body that you **may not be able to see or feel.***

READING OUR LABS

SESSION HANDOUT (cont.)

Understanding CD4 cell count results

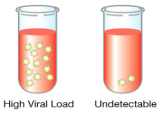
- Results can be reported as two values:
  - CD4 cell count



  - CD4 cell percentage

Understanding viral load test results

- A person with HIV can have a viral load from less than 50 copies to over 1,000,000 copies per milliliter of blood (copies/mL)
- Less than 50 copies/mL = "undetectable"
  - Undetectable does **not** mean the person is cured



CD4 cell count

- Measures the number of CD4 cells (also called T-helper cells) in your body
  - Tells you the health of your immune system
  - The more CD4 cells you have, the stronger your immune system

Complete blood count (CBC)

- CBC test measures the amount of:
  - White blood cells
    - Fight off infections
  - Red blood cells (hematocrit, hemoglobin)
    - Carry oxygen throughout the body
  - Platelets
    - Help blood to clot

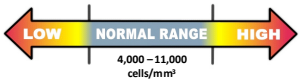
*The CBC test is a useful measure of your **overall health.***

Understanding red blood cell count results

- High RBCs are very rare
- Low RBCs = anemia. May be caused by:
  - Iron/vitamin deficiency
  - Internal/external bleeding (blood loss)
  - HIV/other chronic infections
  - Medications, including certain HIV treatments
  - Cancer and other diseases

White blood cell count (WBC)

- Reported as the number of cells in a cubic millimeter of blood (cells/mm³)



Low WBC
May be caused by:
- Certain medications
- Chemotherapy drugs
- Long-term HIV infection

High WBC
May be caused by:
- Bacterial or other infection
- Leukemia/bone marrow diseases

READING OUR LABS

SESSION HANDOUT (cont.)

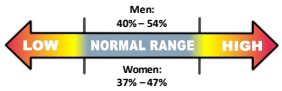
Lipids (fats): triglycerides

- A type of fat the body uses to store energy
- High levels are associated with an increased risk of heart disease

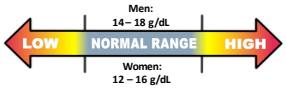
American Heart Association

Red blood cell count (RBC)

- Hematocrit: percentage of total blood volume made up of red blood cells

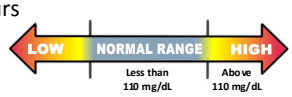


- Hemoglobin: reported as grams per deciliter of blood (g/dL)



Glucose (blood sugar)

- Fasting blood glucose (FBG) measures blood sugar after you have not eaten for at least 8 hours



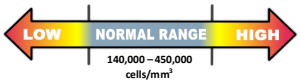
  - Pre-diabetes = between 110 and 126 mg/dL
  - Diabetes = 126 mg/dL or higher

*High blood sugar can be controlled by **diet and exercise**, or by **medications.***

American College of Endocrinology Consensus Statement on Guidelines of Glycemic Control. *Endocr Pract.* 2002; 8(suppl. 1): 5-11.

Platelets

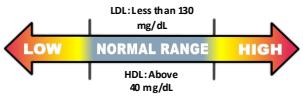
- Platelets are necessary for blood clotting
  - Low platelet counts (thrombocytopenia) can be caused by medications, other diseases or HIV infection itself



Lipids (fats): total cholesterol

- Total cholesterol: LDL ("bad" cholesterol) + HDL ("good" cholesterol)

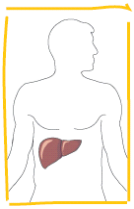
- LDL and HDL cholesterol



American Heart Association

Liver function tests

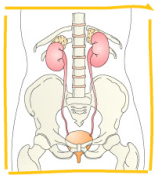
- Blood tests that help to show how well your liver is working
- Important for anyone taking HIV medicines and other medications
  - The liver helps process medications and can become "overloaded"
- Can identify possible:
  - Liver disease
  - Medication stress on liver function
  - Infections of the liver such as hepatitis



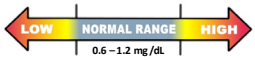
READING OUR LABS

Kidney function tests

- Some HIV medicines may affect the kidneys
- These tests help to show how well your kidneys are working:
  - Blood urea nitrogen (BUN)



- Creatinine



National Instituteof Diabetes and Digestive and Kidney Diseases (NIDDK), NIH

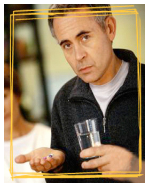
HIV drug resistance

- Determines which HIV treatments your virus is "sensitive" to and which ones your virus is "resistant" to
  - HIV is "resistant" to a medicine if it keeps reproducing even while you are taking it
  - Changes (mutations) in the virus cause resistance

If left uncontrolled, HIV can reproduce and ***lead to AIDS.***

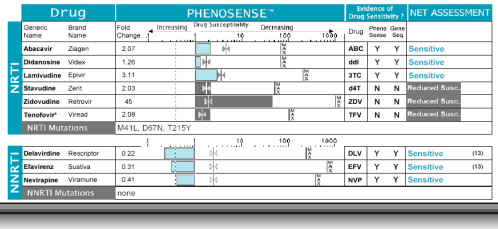
Why is drug resistance testing important?

- Resistance testing can:
  - Tell you if your HIV is resistant to any medications
  - Help your healthcare provider decide which HIV medications will work best for you and which ones to avoid



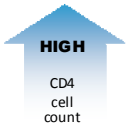
Understanding drug resistance test results

- Sensitive = this medicine may work against your HIV
- Reduced susceptibility = this medicine may not work against your HIV
- These results should be reviewed with your healthcare provider



The importance of HIV therapy

- Keep viral load as low as possible
  - Goal: prevent HIV from damaging your immune system



- Increase CD4 cell count
  - Goal: keep your immune system strong so it is able to fight off infections

Types of HIV medicines

Four groups ("classes")

- Nucleoside reverse transcriptase inhibitor (NRTI), or "nuke"
- Non-nucleoside reverse transcriptase inhibitor (NNRTI), or "non-nuke"
- Protease inhibitor (PI)
- Entry inhibitor (also called fusion inhibitor)

READING OUR LABS

SESSION HANDOUT (cont.)

How do HIV medicines work?

- HIV medicines slow down the reproduction of the virus at various stages
- Each HIV medicine group fights HIV in different ways
  - Main difference: the stage of HIV reproduction that is targeted

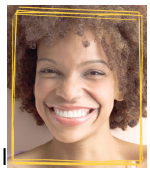
What does HAART stand for?

- HAART: **H**ighly **A**ctive **A**nti**r**etroviral **T**herapy
- A combination of HIV medicines from different groups that are taken together to keep HIV levels down

When you are prescribed HAART

- Your healthcare provider will combine different HIV medicines
  - Goal: most fighting power against HIV with the fewest side effects
- Your healthcare provider will check your viral load, CD4 cell count and other lab numbers
- Your healthcare provider may also test for HIV drug resistance

What you can do



- Take an active role in treating and controlling your HIV
- Take the correct dose of each of your HIV medicines every day, at the right time
- Ask for help if you have trouble sticking to your dosing schedule
- Talk to your healthcare provider about the results of all your lab tests and any side effects you experience

Handouts to Review:

Understanding Your Labs Pg 89-108
&
Blood Work Page 109-120

"TEST TUBE" LAB VALUE ACTIVITY*

ABOUT THIS ACTIVITY

Time: 10 minutes

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

- Identify the test name with the blood test most likely being performed;
- Match the 5 most comprehensive laboratory test used to monitor health;
- Recognize the types of laboratory tests to monitor a person's HIV care and treatment;
- Understand why laboratory tests are significant in monitoring health and how these tests can be used to manage care.

Training Methods: Large Group Activity, Discussion

In This Activity You Will…

- Pass out activity worksheets and get participants to answer questions. (10 min)

Materials:

- Handout - "Test Tubes" Activity

Preparation:

- Print handout

Instructions

1. Give each participant a copy of the activity sheet.
2. Ask each participant to match the test name(s) with the type of test most likely being taken.
3. This activity can be completed individually or together as a class.
4. Ask the participants the following questions and facilitate discussion.

Discussion Questions

- What happens when one is not adherent to doctor visits to have these laboratory test performed?
- How often should a person take laboratory tests if they have just started medication or are starting a new regimen?
- Are all of these tests performed each time labs are drawn?
- Will the tests show different results or possible blips if an HIV positive person is sick and has labs drawn?
- Does a person have to fast before having labs drawn?

Summary

In closing the good news is that people are living longer with HIV, the bad news is that people are living longer with HIV and are seeing different problems as long-term progressors such as heart disease. Some of the HIV medications may cause elevations in glucose, cholesterol, or triglycerides. Being monitored frequently and following or charting lab results to watch for changes is extremely helpful. The benefits of taking medication certainly outweigh the risk. Watching those lab values is important stuff.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

"TEST TUBE" LAB VALUE ACTIVITY

SESSION HANDOUT #1 of 1

"TEST TUBES" ACTIVITY

Instructions: Match the question on the left with the most likely answer on the right.

What is the most important test HIV infected people routinely take?	Liver
What determines when to treat, how to treat and if treatment is working?	Lipid Panel
In people with reduced kidney function, doses of some HIV medications may need to be adjusted. Tests to monitor this vital organs function are called _____ function tests.	Baseline
After someone first learns of their HIV infection, the doctor will want them to take several lab tests to get a _____.	CBC
HIV medications are processed through this organ; therefore function tests are performed to monitor its condition since it affects medications.	Kidney
One of the risks of HAART is a greater chance of serious drug-related problems, including heart disease. What tests are used to monitor this risk factor?	Lab tests

UNDERSTANDING LAB VALUES*

ABOUT THIS ACTIVITY

Time: 45 minutes

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

- Understand the importance of having regular lab work done by knowing what specific HIV test results mean such as viral load, CD4, resistance tests.
- Understand what CD4 percentage and T-cell ratio indicate and review other significant subset tests.
- Understand what CBC and blood chemistry tests are performed and why they are checked.
- Understand the importance of having cholesterol, triglycerides, blood pressure and glucose levels tested and how they may relate to HIV treatment adherence and care.

Training Methods: Large Group Discussion, Lecture

In This Activity You Will…

- Share definitions with group (25 minutes).
- Engage group by asking questions about their lab values (10 minutes).
- Lead a group discussion to summarize (10 minutes).

(continued next page)

Instructions

Follow Talking Points (Powerpoint Slides.)

Slide 1: Making Sense of Lab Values

If you are living with HIV, lab tests are one of the most important ways you and your healthcare provider can monitor your health.

Slide 2: Making Sense of Lab Values

Doctors use lab tests to monitor your health. Lab tests:

- Detect the presence of disease-causing organisms (e.g. bacteria, viruses, parasites) that may be related to HIV
- Tell when to treat, how to treat, and if treatment is working
- Identify the development of side effects related to treatment
- Detect other infections and problems associated with HIV infection

Slide 3: Step 1 - Lab Basics

Confirm your personal information:

- Name
- Age
- Gender
- Social security number
- Ask about anything you do not understand.

Slide 4: Step 2 - Lab Timeline

So what are the baseline lab tests your doctor will want you to take? These are the most common, but they are not the only tests your doctor may want you to take.

Baseline Tests:

- A complete blood count or CBC
- A CD4 T-cell count and percentage
- A drug resistance test (this may not be required by your physician)
- A viral load test
- A chemistry panel

* This module comes from the Missouri People to People Training Manual, 2008.

UNDERSTANDING LAB VALUES

ABOUT THIS ACTIVITY (CONT.)

Materials:

- Laptop
- Projector with screen or blank white wall
- Markers
- Participant booklet to follow lesson and power point

Preparation: None

There are also a number of other tests that your doctor will probably order as a baseline measurement—to be able to keep track if things change. As time goes on, these other tests will be ordered periodically, or if your doctor suspects a problem.

We'll discuss each of these tests in more detail in a moment.

Slide 5-6: Periodic Labs

After the baseline lab tests have been taken, your doctor will ask you to take them again periodically. Now what does that mean? To begin, generally every quarter, or about every 3 months throughout your treatment, your doctor may want to perform the lab tests listed here:

- Viral load test
- CBC
- CD4 T-cell count and percentage
- A lipid profile for cholesterol and triglycerides
- A fasting blood sugar test for diabetes

Your doctor may also want you to take these additional tests:

- Liver function tests, because many HIV/AIDS meds are processed by the liver
- Kidney function test, because many HIV/AIDS meds are excreted by the kidneys
- Hepatitis A, B, and C
- HIV resistance (if your therapy fails to lower the viral load or achieves only suboptimal suppression)
- Toxoplasma antibody IgG (which tests for a blood-borne illness that people can get from cats)
- CMV IgG

Beyond blood tests, these additional screenings may be done:

- Pap smear, including a vaginal pap smear for women, and an anal pap smear for men and women
- Full sexually transmitted disease or STD screening
- Chest X-ray
- PPD skin test for tuberculosis

UNDERSTANDING LAB VALUES

Your doctor may also want to make sure the following vaccines are up-to-date:

- Pneumococcal vaccine (if not given in the last 5 years)
- Tetanus/diphtheria toxoid (if not given in the last 10 years)
- Hepatitis A & B vaccines
- Flu vaccine

Slide 7: Labs (3-4 months)

- CBC values
- Red blood cell count – Cells that carry oxygen
  White blood cell count – (different types) make up the immune system-fight infection
- CD4
- One of the white blood cells (Lymphocyte) that tell other white blood cells to attack HIV
- Drug resistance testing
  Genotype - HIV infection within 2 years of diagnosis – resistance profile
- Viral load
- Chemistry panel
  Liver function
  Kidney function
  Lipid profile
    Fasting – 1 yearly
    Blood sugar

Slide 8: Lab Values

The CBC or complete blood count lab value tests is a report of the red blood cell count.

- One of the most commonly used blood tests
- Examines blood components including red and white blood cells
- Blood components are made in bone marrow, which can be affected by HIV and antiretroviral agents

The CBC is a very important gauge of your overall health, so it is one of the most commonly used blood tests for monitoring HIV and AIDS. The CBC examines the components of your blood, including your red and white blood cells. Why are these lab values important? For two reasons: First, because these cells are produced in the marrow of your bones. Second, because your bone marrow can be affected by HIV and AIDS and antiretroviral agents.

Slide 9: Lymphocyte tests

- CD4 is a WBC called Lymphocyte
  Counts the number of CD4 T-cells
- Normal CD4 count (helper T-cell count)
  600-1500 cells/mm3 is normal for healthy adults
  Children's counts are much higher
  Less than 200 cause increased risk of opportunistic infections. The lower the CD4 drops, the more risk
- CD4%
  More consistency than a single measurement
  Less than 30% means some level of immunodeficiency (weakened immune system

Slide 10: What about ups and downs?

CD4 T-cell counts can vary according to:

- Type of test
- Time of day
- Current or recent infection
- Stress
- Fatigue

Slide 11: CD4 Percentage

- CD4 accounts for 30%-60% of all the immune cells
- Usually does not vary as much as the actual CD4 measurement
- Some providers might consider starting antiviral therapy when the CD4% is <15-17 even if CD4 remains > 350 copies

UNDERSTANDING LAB VALUES

TRAINING TIP

Things to stress:

- If you are living with HIV, as you can see there are numerous lab tests usually done quarterly that can be confusing, mind boggling thereby leaving HIV+ people's heads spinning.
- It is important to remember that your healthcare provider often welcomes the opportunity for you to take an active role in your care by asking questions about your lab results to understand what they mean and more importantly what you can do to make a lifestyle change to make a difference in some of those results.

Slides 12-13: Viral load

- One of the most important tests you will take about every 3 months
- Often considered the critical marker in the management of HIV and AIDS
- Measures the amount of HIV in your blood

Slide 14: Chemistry Panel

This is an example of a chemistry panel. The chemistry panel is probably the most substantial portion of your lab results, because it provides a lot of information about how your body is doing. Specifically, the chemistry panel indicates how your major organs are working. The chemistry panel provides information on your heart, liver, kidneys, muscles, and bones.

Slide 15: Liver Function Tests

- Most HIV medications are processed through the liver
- Conditions that affect your liver can also affect your meds
- Tests used to monitor liver function are:
  ALT, also known as SGPT
  AST, also known as SGOT
  Bilirubin
  Alkaline phosphatase

Slide 16: Kidney Function Tests

- HIV can cause kidney damage So can diabetes and cardiovascular disease
- Many HIV meds are cleared from the body by the kidneys
- In people with reduced kidney function, the doses of some HIV meds may need to be adjusted
- Tests for kidney function include:
  Blood Urea Nitrogen (BUN)
  Creatinine

UNDERSTANDING LAB VALUES

Slides Lipids 17 - 19

- HIV, and some HIV meds, can increase lipid levels
- People with high levels of LDL cholesterol and triglycerides are at a greater risk for:
  - Cardiovascular (heart) disease
  - Heart attack
  - Stroke
- Factors that can increase the risk of elevated lipids include:
  - Family history of cardiovascular disease
  - High blood pressure
  - Smoking
- Things you can do to decrease the risk include:
  - Eat healthy
  - Exercise
  - Quit smoking
  - Appropriate lipid-lowering drugs
- Cholesterol - Types of fat in the blood
  Triglycerides - <150 (related to amount of sugar intake)
  Cholesterol - <200
  - LDL (lethal) – bad cholesterol <100
  - HDL (healthy) – good cholesterol >60
- Abnormal ranges put one at risk for cardiovascular events and pancreatitis Many HIV medications affect cholesterol

Slide 20: Blood sugar levels

Glucose is sugar and is broken down in your body to provide your cells with energy. High blood sugar may be a sign of diabetes, which can lead to a variety of cardiovascular and other health problems. High blood sugar levels eventually cause damage to your eyes, nerves, kidneys, and heart. Some HIV medications, including protease inhibitors, can increase blood sugar levels.

Summary

- Understanding your labs enables you to play an active and proactive role in your health care
- Use your new knowledge of lab tests and lab values to be a partner with your doctor
- Live smarter, healthier, and happier by being in control

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

UNDERSTANDING LAB VALUES

SESSION HANDOUT # 1 of 1

Making Sense of Lab Values

Understanding Labs and Why They Are Important

Making Sense of Lab Values

- **Doctors Use Lab Tests to Monitor Your Health**
- Lab tests:
  - Detect the presence of disease-causing organisms
    - (e.g. bacteria, viruses, parasites) that may be related to HIV
  - Tell when to treat, how to treat, and if treatment is working
  - Identify the development of side effects related to treatment
  - Detect other infections and problems associated with HIV infection

Step 1: lab basics

Confirm your personal information:

- –Name
- –Age
- –Gender
- –Social security number

Ask about anything you do not understand

Step 2: lab timeline

Your Treatment Timeline

Tests you may take at baseline

Baseline tests

- Complete blood count (CBC)
- CD4 T-cell count and %
- Drug resistance testing
- HIV viral load test
- Chemistry panel
- Liver function tests
- Kidney function tests
- Hepatitis A, B, and C
- Toxoplasma IgG
- Cytomegalovirus

Other tests (not using blood):

- STD screening
- Pap smear (women/men)
- Chest X-ray
- Tuberculosis test

Periodic labs

Periodic labs

- Viral load test
- CBC (complete blood count)
- CD4 T-cell count and %
- Lipid profile and blood sugar (fasting)

Occasional tests/vaccines

- Liver function tests
- Kidney function tests
- Hepatitis A, B, and C
- HIV resistance
- Toxoplasma IgG test
- Cytomegalovirus

DEFINITIONS

- **Viral load test** shows the amount of HIV RNA in your blood and tells you how active the virus is in your body. Higher numbers mean you have more virus in your body.
- **Opportunistic infections** are illnesses caused by different organisms, some of which do not usually cause disease in people with a normal immune system. Opportunistic infections of the lungs, brain, eyes, and other organs can develop in people with HIV infection.

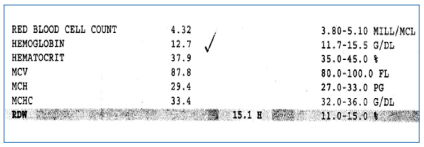
UNDERSTANDING LAB VALUES

SESSION HANDOUT # 1 of 1 (cont.)

Labs (3-4 months)

- CBC values
  - Red blood cell count
    - Cells that carry oxygen
  - White blood cell count
    - (different types) make up the immune system-fight infection
- CD4
  - One of the white blood cells (Lymphocyte) that tell other white blood cells to attack HIV
- Drug resistance testing
  - Genotype (done as needed)
    - HIV infection within 2 years of diagnosis –resistance profile
- Viral load
- Chemistry panel
  - Liver function
  - Kidney function
  - Lipid profile
    - Fasting – 1 yearly
    - Blood sugar

Lab values



RED BLOOD CELL COUNT	4.32		3.80-5.10 MILL/MCL
HEMOGLOBIN	12.7	✓	11.7-15.5 G/DL
HEMATOCRIT	37.9		35.0-45.0 %
MCV	87.8		80.0-100.0 FL
MCH	29.4		27.0-33.0 PG
MCHC	33.4		32.0-36.0 G/DL
RDW		15.1 H	11.0-15.0 %

- One of the most commonly used blood tests
- Examines blood components including red and white blood cells
- Blood components are made in bone marrow, which can be affected by HIV/AIDS and antiretroviral agents

Lymphocyte tests

- CD4 is a WBC called Lymphocyte
  - Counts the number of CD4 T-cells
- Normal CD4 count (helper T-cell count)
  - 600-1500 cells/mm^3 is normal for healthy adults
  - Children's counts are much higher
    - Less than 200 cause increased risk of opportunistic infections. Lower the CD4 drops, the more risk
- CD4%
  - More consistency than a single measurement
  - Less than 30% means some level of immunodeficiency (weakened immune system)

What about ups and downs?

- CD4 T-cell counts can vary according to:
  - Type of test
  - Time of day
  - Current or recent infection
  - Stress
  - Fatigue

CD4 (%) Percentage

- CD4 accounts for 30%-60% of all the immune cells
- Usually does not vary as much as the actual CD4 measurement
- Some providers might consider starting antiretroviral therapy when the CD4% is <15-17 even if CD4 remains > 350 copies

Viral load

- One of the most important tests you will take about every 3 months
- Often considered the critical marker in the management of HIV and AIDS
- Measures the amount of HIV in your blood

UNDERSTANDING LAB VALUES

SESSION HANDOUT # 1 of 1 (cont.)

Viral load

Test Name	In Range	Out of Range	Reference Range	La
HIV 1 RNA QN PCR V1.5				
COPIES/ML	<400		< 400 COPIES/ML	SL
LOGCOPIES/ML	<2.60		< 2.60 LOGCOPIES/ML	

CHANGES IN HIV 1 RNA THREE TIMES OR GREATER (LOG10 GREATER THAN 0.5) MAY BE SIGNIFICANT.

Chemistry panel

COMPREHENSIVE METABOLIC PANEL		IG
GLUCOSE	93	65-109 MG/DL
	FASTING REFERENCE INTERVAL	
UREA NITROGEN (BUN)	10	7-25 MG/DL
CREATININE	0.8	0.5-1.2 MG/DL
BUN/CREATININE RATIO	13	6-25 (CALC)
SODIUM	137	135-146 MMOL/L
POTASSIUM	4.0	3.5-5.3 MMOL/L
CHLORIDE	105	98-110 MMOL/L
CARBON DIOXIDE	24	21-33 MMOL/L
CALCIUM	8.5	8.5-10.4 MG/DL
PROTEIN, TOTAL	7.7	6.0-8.3 G/DL
ALBUMIN	3.8	3.7-5.1 G/DL
GLOBULIN	3.9	2.2-4.2 G/DL (CALC)
ALBUMIN/GLOBULIN RATIO	1.0	0.8-2.0 (CALC)
BILIRUBIN, TOTAL	0.6	0.2-1.3 MG/DL
ALKALINE PHOSPHATASE	69	20-125 U/L
AST	23	2-35 U/L
ALT	22	2-40 U/L

Liver function tests

- Most HIV medications are processed through the liver
- Conditions that affect your liver can also affect your meds
- Tests used to monitor liver function are:
  - ALT, also known as SGPT
  - AST, also known as SGOT
  - Bilirubin
  - Alkaline phosphatase

Kidney function test

- HIV can cause kidney damage
  - So can diabetes and cardiovascular disease
- Many HIV meds are cleared from the body by the kidneys
- In people with reduced kidney function, the doses of some HIV meds may need to be adjusted
- Tests for kidney function include:
  - Blood Urea Nitrogen (BUN)
  - Creatinine

Lipid panel

LIPID PANEL		
TRIGLYCERIDES	86	<150 MG/DL
CHOLESTEROL, TOTAL	197	<200 MG/DL
HDL CHOLESTEROL	65	> OR = 40 MG/DL
LDL-CHOLESTEROL	115	<130 MG/DL (CALC)
CHOL/HDLC RATIO	3.0	<4.4 (CALC)

Lipid tests

- HIV, and some HIV meds, can increase lipid levels
- People with high levels of LDL cholesterol and triglycerides are at a greater risk for:
  - Cardiovascular (heart) disease
  - Heart attack
  - Stroke
- Factors that can increase the risk of elevated lipids include:
  - Family history of cardiovascular disease
  - High blood pressure
  - Smoking
- Things you can do to decrease the risk include:
  - Eat healthy
  - Exercise
  - Quit smoking
  - Appropriate lipid-lowering drugs

UNDERSTANDING LAB VALUES

SESSION HANDOUT # 1 of 1 (cont.)

Lipids

- Cholesterol - Types of fat in the blood
  - Triglycerides - <150 (related to amount of sugar intake)
  - Cholesterol - <200
    - LDL (lethal) – bad cholesterol <100
    - HDL (healthy) – good cholesterol >60
  - Abnormal ranges put one at risk for cardiovascular events and pancreatitis Many HIV medications effect cholesterol

Blood sugar levels

COMPREHENSIVE METABOLIC PANEL		
GLUCOSE	93	65-109 MG/DL
		FASTING REFERENCE INTERVAL
UREA NITROGEN (BUN)	10	7-25 MG/DL
CREATININE	0.8	0.5-1.2 MG/DL
BUN/CREATININE RATIO	13	6-25 (CALC)
SODIUM	137	135-146 MMOL/L
POTASSIUM	4.0	3.5-5.3 MMOL/L
CHLORIDE	105	98-110 MMOL/L
CARBON DIOXIDE	24	21-33 MMOL/L
CALCIUM	8.5	8.5-10.4 MG/DL
PROTEIN, TOTAL	7.7	6.0-8.3 G/DL

In closing

- Understanding your labs enables you to play an active and proactive role in your health care
- Use your new knowledge of lab tests and lab values to be a partner with your doctor
- Live smarter, healthier and happier by being in control

- **Activity**

"Test Tubes"

UNDERSTANDING DRUG RESISTANCE*

ABOUT THIS ACTIVITY

Time: 65 minutes

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

- Understand the concept of drug resistance.
- Understand when and what types of drug resistance testing are available.

Training Methods: Video, Group Discussion, Lecture

In This Activity You Will…

- Watch a 25 min video on resistance (25 minutes).
- Engage about vignettes on video (10 minutes).
- Share definitions (20 minutes).
- Lead a group discussion to summarize (10 minutes).

Materials:

- TV/VCR
- Video - HIV Resistance: What It Is… And What You Can Do About It (23 minutes)
- Laptop
- Projector
- Understanding Drug Resistance PowerPoint presentation
- Handout for take-home reference- HIV Resistance Testing from AIDSinfonet, can be downloaded from http://www.aidsinfonet.org/fact_sheets/view/126

(continued next page)

Instructions

1. View video.

2. Review scenarios in video (follow points on PowerPoint slides).

Jose
New on medications.
Works in construction.
Wants to take all his medications at once.
"Organize it so it works for me"
"Every dose, every day, every time"
"Nothing to it but to do it".

Christy
Mutant strain or Wild type strain
Resistance to therapy
Re-assess with genotype testing
She is not agreeing to a new therapy maybe because she will do some research on medications and resistance before starting another medication therapy.

Warren
Has a new job
Stigma of his sexual orientation and being HIV positive
Options to help with adherence-Christopher (his partner) and his new watch
Realistic fears of feeling sick from side effects to medications.
Follow the slide presentation and utilize the presenter slide notes.

3. Conduct Understanding Drug Resistance PowerPoint presentation: Follow Talking Points (PowerPoint Slides)

Slide 1: Understanding Drug Resistance

What are the goals of HIV therapy?

1. Slow the progression of HIV
2. Restore the function of the immune system
3. Improve a person's quality of life

* This module comes from the Missouri People to People Training Manual, 2008.

UNDERSTANDING DRUG RESISTANCE

ABOUT THIS ACTIVITY (CONT.)

Preparation:

- Play video on "HIV Resistance: What It Is…And What You Can Do About It" (Produced by GlaxoSmithKline) from the PEER Center website at http://www.hdwg.org/peer_center/node/1728
- The video can also be downloaded from Google at http://video.google.com/videoplay?docid=-3611551921651394521&hl=en. Open Windows MediaPlayer or other compatible software to play the video.
- You may need to download a DIVX Video Player in order to view the video. Free downloads are available at http://www.divx.com/divx/windows/download/
- Prepare PowerPoint with the information on the scenarios in the video

The Provider and patient would consider combination therapy. To remind you there are 5 classes of drugs that are used in HIV therapy:

- Nucleoside reverse transcriptase inhibitors (NRTIs)
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs) Protease inhibitors (PIs)
- Entry inhibitors (EIs)
- Integrase Inhibitors

These ARVS interrupt the HIV replication process and help preserve the health of the immune system. Therapy with a combination of three or more antiretroviral drugs is usually required for effective treatment of HIV infection.

Slide 2: Understanding Drug Resistance

What Is HIV Drug Resistance?

- HIV drug resistance means that the virus can adapt, grow, and multiply in the presence of drugs.
- HIV is considered to be drug resistant when a drug or class of drugs is no longer effective against it.

What Causes Drug Resistance?

HIV replicates very rapidly and makes many mistakes (mutations) in the process. However, HIV doesn't have the ability to correct these mistakes. This results in mutant viruses that can be resistant to one or more of the drugs used in HIV therapy. These mutant viruses continue to make copies of themselves, further reducing the effectiveness of an individual's HIV therapy.

How Common Is Drug Resistance?

Recent data indicates:

- 3 out of 4 people currently taking HIV drugs, treatment failure is linked to drug resistance
- 1 in 4 newly infected individuals is already resistant to at least one HIV class of drugs.

UNDERSTANDING DRUG RESISTANCE

Slide 3: Understanding Drug Resistance

Why Is Drug Resistance Testing Important?

- Gives provider a complete picture of therapy options (when used with treatment history, VL and CD4 labs
- Helps avoid unnecessary drug side effects and medical costs associated with taking drugs that are not likely to work.
- Helps with development of an effective treatment plan

How Is Drug Resistance Tested?

A blood sample is taken and sent to a laboratory where one or both types of resistance testing — phenotypic and genotypic are performed.

Phenotypic testing is performed by testing a sample of a person's HIV against all of the available antiretroviral drugs. By directly measuring the ability of HIV to grow in the presence of these drugs, the laboratory can determine which drugs will work and which are no longer good options. The activity of a person's HIV in the presence of the antiretroviral drugs is compared to the activity of a control strain of HIV that is known to be susceptible to all drugs. This comparison determines how well a drug is likely to work.

Genotypic testing is performed by identifying genetic mutations, or changes in genes, in an individual's HIV that are known to be associated with drug-resistant HIV. Once the mutations have been identified, a computer is usually used to interpret the results for the healthcare provider

Slide 4: Understanding Drug Resistance

When Should Drug Resistance Testing Be Used?

Before therapy begins

Because drug-resistant strains of HIV can be passed from one person to another, resistance testing can be used to evaluate drug resistance in recently infected or newly diagnosed people. The results can help a healthcare provider work with an individual to design a targeted treatment plan that is more likely to be effective for a longer period of time. By using information about how resistance develops when certain drugs are used, healthcare providers can design combinations of drugs that will preserve more treatment options if therapy failure occurs later on down the road. For facilitator notes

Following treatment failure

When a person no longer benefits from his or her HIV therapy (treatment failure) and viral load is increasing, drug resistance testing can help determine which drug or combination of drugs is no longer effective. A treatment plan can then be developed that is more likely to slow HIV replication.

Throughout therapy

Drug resistance testing can also be used during the course of an individual's therapy. Periodic testing when HIV is detected in plasma can help gauge therapy effectiveness and drug resistance, so that treatments can be altered as needed.

UNDERSTANDING DRUG RESISTANCE

TRAINING TIP

What Do Drug Resistance Test Results Look Like?

- The report forms used for Monogram's resistance tests include genotypic and/or phenotypic drug resistance information for all of the approved nucleoside reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and protease inhibitors (PIs).

How to Prevent Drug Resistance?

In addition to working with their healthcare providers and using drug resistance tests as appropriate, people living with HIV can fight drug resistance by:

- Taking HIV drugs every dose, every day and every time. If people under HIV treatment skip their medications, stop taking them or don't stick to their schedules, it becomes easier for the virus to develop resistance.
- Not sharing needles or having sex without a condom with someone else who has HIV. This way, HIV-positive people avoid exposure to additional, drug-resistant strains of the virus.

Summary

- Drug Resistance is the body saying these medications are not working to reduce replication of the virus, therefore the medications are not working for me.
- It is important to understand how to reduce chances of drug resistance-Medication adherence and safe sexual behavior.
- Drug resistance testing is available-Phenotype and Genotype testing and is prescribed based on a mutual decision between the provider and patient, as well as exploring cost effectiveness of procedure.
- Drug resistance testing is done before, during and throughout the ARVs medication adherence journey.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

UNDERSTANDING DRUG RESISTANCE

SESSION HANDOUT # 1 of 1

people to people

Resistance Video

people to people

Understanding Drug Resistance

Goals of HIV therapy are:
- Slow the progression of HIV
- Restore the function of the immune system
- Improve a person's quality of life

Combination Therapy: Five Classes
1. Nucleoside reverse transcriptase inhibitors (NRTIs), 1987
2. Non-nucleoside reverse transcriptase inhibitors (NNRTIs), 1996
3. Protease inhibitors (PIs), 1995
4. Entry inhibitors (EIs), 2003
5. Integrase inhibitors, 2007

people to people

Understanding Drug Resistance

What is Drug Resistance?
- Virus can adapt, grow and multiply in the presence of drugs
- A drug or class of drugs are no longer effective against the virus

What Causes Drug Resistance?
- Rapid replication of HIV sometimes results in mistakes (mutations). These mutant viruses become resistant to therapy.

How Common is Drug Resistance?
- 3 out of 4 people failed treatment because of drug resistance
- 1 out of 4 newly infected are already resistant to at least 1 class of drugs

people to people

Understanding Drug Resistance

Why is Drug Resistance Testing Important?
- Complete picture of therapy options
- Helps avoid unnecessary drug side effects and cost of meds associated with taking drugs that are not likely to work
- Development of effective treatment plan

How is Drug Resistance Tested?
- Phenotypic testing - Assesses the ability of the virus to replicate in the presence of ARVs/medications.
- Genotypic testing - Identifies genetic mutations in an individual's HIV which are known to be associated with drug-resistant HIV. Results indicate sensitivity or resistance to drugs. Most common test.
  See Resource #13 for an example.

people to people

Understanding Drug Resistance

When should Drug Resistance Testing Be Used?
- Before therapy begins
- Following treatment failure

How to Prevent Drug Resistance?
- Taking HIV drugs on time, every time.
- Not sharing needles or having sex without a condom with someone else who has HIV

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- Discuss basic concepts related to HIV treatment.
- Discuss ways to support clients in becoming adherent to medications.

Training Methods: Lecture, Small Group Activity, Meditation

In This Activity You Will…

- Conduct powerpoint presentation and go over handouts (25 minutes)
- Facilitate a small group activity (30 minutes)
- Lead a guided meditation (5 minutes)

Materials:

- Flipchart Paper
- Markers
- PowerPoint- HIV Treatment 101
- Handout - 10 Things You Can Do to Adhere to Your Medication Schedule can be downloaded from http://www.thebody.com/content/treat/art31297.html
- Handout – HIV Drug Chart (This may be obtained from a pharmaceutical company or from web resources such as acria.org or aidsmeds.com. Be sure to obtain most recently updated version of drug chart for every training session.)

(continued next page)

Instructions

1. Conduct HIV Treatment 101 power point presentation.

2. Briefly review handouts:
- 10 Things You Can Do to Adhere to Your Medication Schedule
- Updated HIV Drug Chart
- Project Inform's "When to Use Anti-HIV Therapy"
- Project Inform's "Dealing with Drug Side Effects"

3. Break participants up into groups of 4-5. Ask each group to come up with the following for each scenario below (you can show them on slides or just read aloud).
- Two open ended questions to ask a client that is considering starting HIV medications.
- Two affirming statements you could tell a client who has been taking HIV medications.
- Finish by reading the medication meditation.

Scenario 1

You have a client who has just been told by her doctor that she will have to start taking HIV medications. She is very nervous and scared. She has heard lots of stories from other women in her support group and most of them are not good.

- What are 2 open ended questions that you can ask your client to get more information from her?
- What information or resources can you provide for her?

Scenario 2

You have a client who started HIV medications 2 months ago. She has been having very bad nausea and diarrhea. She wants to stop taking her meds and calls you crying one day.

- What are two affirming statements that you could give your client to encourage her to continue taking the medications?
- What information or resource can you give to your client in this situation?

* This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

ABOUT THIS ACTIVITY (CONT.)

Materials (cont.):

- Handout - Project Inform's "When to Use Anti-HIV Therapy" (can be downloaded from http://www.projectinform.org/info/ww/ww09.pdf)
- Handout - Project Inform's "Dealing with Drug Side Effects" (can be downloaded from http://www.projectinform.org/info/sideeffects/sideeffects.pdf)
- Handout - Medication Meditation (can be found online at http://www.thebody.com/content/treat/art32723.html)

Preparation:

- Obtain an HIV Drug Chart from a pharmaceutical company or from web resources such as acria.org or aidsmeds.com. Be sure to obtain most recently updated version of drug chart for every training session.
- Print handouts

Summary

Wrap up by reminding the group that clients will have to make their own decisions about going on and adhering to medications. All we can do is provide support and information regarding the important of adherence, and that's a lot!

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 1 of 5

10 THINGS YOU CAN DO TO ADHERE TO YOUR MEDICATION SCHEDULE

By Frank Pizzoli

1. **Watch clocks and calendars.** Clocks and calendars rule in managing adherence. Buy a cheap plug-in clock with numbers so bright you'll see them for miles. Set the alarm if that helps. Calendars help track when prescriptions need refills. Buy calendars with whatever kind of pictures keep you looking at each month.

2. **Buy a wristwatch** that allows you to set at least three alarm times in 24-hours. Adherence is achieved when you keep to your pill-taking schedule of every 6 or 12 hours, depending on your regimen.

3. **Free pill trays** are often available from your AIDS service organizations. Grab two trays. Keep one filled with a week's worth of meds. It's time consuming to count out each dose, each time, on time, more than once daily. In the second pill tray keep a day's worth of pills in your car or at work, just in case you forget.

4. **Put medicines in sight** such as on the kitchen counter or where you throw your keys once inside or next to the TV remote. If you can "see" your meds routinely, there's a better chance you remember to take them on time, every time.

5. **If you have food requirements** be sure to chart out exactly what and when you can and cannot eat. Generally, high-fat foods don't go well with HIV meds, although some meds will advise you to eat fatty foods to help you absorb the drug.

6. **Agree with a friend to accept calls** reminding you to take your medicines. Make a telephone-tree of all your friends on HIV meds. Commit to calling around the circle to insure adherence.

7. **Take your morning and/or night dose** when you brush your teeth. Maybe there's another daily routine that could be easily combined with taking meds, like immediately before or after you exercise.

8. **Reward yourself.** If you make it through a week or month without missing a dose, reward yourself. If you miss a dose, be gentle. Adherence is a lifelong commitment.

9. **The best defense against side effects** involves knowing what they are and how they affect you. For example, keep a log for a week or longer. Write down all your side effects, when they occur, for how long. Note any links to mealtime or certain foods. Then avoid the foods and situations that lead to your discomfort.

10. **Always coordinate your care with a health care provider.** Don't be afraid to ask questions and seek guidance. If your doctor or case manager is annoyed by questions, find another one.

SESSION HANDOUT # 2 of 5

NUMBER 9 | DECEMBER 2001

wise words

hiv/aids treatment information & advocacy by and for women

When to use anti-HIV therapy: the decision is yours to make!

Making a decision about when to start anti-HIV therapy and what drugs to take can be a challenge. There's no one right answer about when to start or what therapies to use, but there are answers that are right for you. As you embark on this decision, think about your needs, as well as the medical facts, and how starting therapy—or even waiting—fits into your life. Take time to look at both the risks and the benefits of starting therapy as well as waiting to start.

There are many tools that can help you in making an informed decision about treatment. The Federal Guidelines for the use of anti-HIV therapy is one of these tools. The Federal Guidelines are just what they say, a guide. They provide information, recommendations and suggestions on when to start treatment. They also outline the risks and benefits of treatment, what drugs to start with and options for changing therapy. The Guidelines are not a "one size fits all" solution, but rather a tool to assist you in making decisions.

On page 2 is a summary of the Federal Guidelines. Keep in mind that they are periodically reviewed and revised. You can also access the most current guidelines at *www.hivatis.org*.

In the following pages you'll find discussion points to consider if you're thinking about using anti-HIV therapy for the first time, to help you decide—for yourself—if starting therapy is right for you. You'll also find information on ways you can promote your own health. These are things you might consider exploring now, whether or not you decide to use therapy. Learning about anti-HIV therapy, the risks and benefits of starting now or waiting, and further developing for yourself your own decision-making process is central to making an informed decision.

Remember, this is your decision—take your time to make it.

WHAT'S INSIDE WISE

Greetings Wise Women!!

My name is Shalini Eddens and I recently joined Project Inform as the new Program Manager for Project Wise. Project Wise was truly blessed to have the leadership of Angela Garcia. Earlier this year, Angela went on to continue her education. Her contributions to Project Wise and *Wise Words* will be remembered and appreciated. We wish her the very best.

I am optimistic and excited about the future of Project Wise. More importantly, I'm grateful to each of you for being such an important part of *Wise Words*. I invite your questions, comments or anything that keeps *Wise Words* your newsletter! Contact us at wisewords@projectinform.org. or 415-558-8669 x205.

This issue is for women who are considering therapy, specifically those with a chronic established infection vs. acute infection. A chronic infection means you were exposed to the virus over a year ago. An acute infection means within the last year.

These timelines are not written in stone—varying factors can influence an infection being acute or chronic. If you're unsure about the time of your infection, talk with your doctor.

I hope you can make this issue of *Wise Words* more personal to your life. *Remember, the best decision is an informed decision—one that you made for* ***YOU!*** Peace

Shalini Eddens

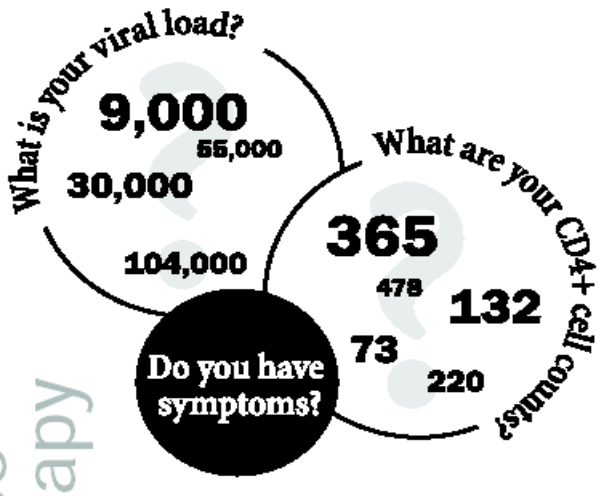
Shalini Eddens
Program Manager, Project Wise

Wise Words is a program of PROJECT inform

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 2 of 5 (cont.)

federal guidelines for the use of anti-HIV therapy



- **Advanced stage disease (severe symptoms of AIDS, with any CD4+ or viral load level.**
  All people with severe symptoms of AIDS are encouraged to be treated with anti-HIV therapy. In this case, therapy is shown to prolong life and improves symptoms. When starting therapy to prevent or treat serious infections (called *opportunistic infections*) at the same time as starting anti-HIV therapy, special care should be taken to avoid drug interactions. A person experiencing an opportunistic infection is generally encouraged to continue anti-HIV therapy.

- **No symptoms of HIV disease, with CD4+ cell counts below 200 and any viral load.**
  Anti-HIV therapy should be offered after considering the issues for making treatment decisions.

- **No symptoms of HIV disease, with CD4+ cell counts between 200-350 and any viral load.**
  Anti-HIV therapy should generally be offered, though controversy exists. Some experts believe it is often safe to wait until the CD4+ cell count falls to 200. Others believe this offers too little room to accommodate individual differences in how HIV disease progresses. In this case, they feel it's safer to start therapy at CD4+ cell counts of 350.

- **No symptoms of HIV disease, with CD4+ cell counts above 350 and viral load above 30,000 copies by bDNA or 55,000 by RT-PCR.**
  There are two unproven theories about treating early HIV infection in people without symptoms: aggressively vs. conservatively. For people who meet this definition, there are no data to suggest which approach results in longer survival. Very early, aggressive treatment might lead to longer life and greater preservation of the natural immune response against HIV. Or, it might lead to using up the limited supply of therapies too early in the course of disease. As well, it risks early exposure to possible long-term side effects from therapies. As a result, many experts would delay starting therapy and continue to monitor CD4+ cell counts and viral load until certain levels are reached. On the other hand, the risk of disease progression over the next three years is somewhat high (over 30%) in people who meet this definition. As a result, other experts prefer to start treatment without further delay, believing that preventing damage by the virus may be preferable to trying to repair what breaks later on.

- **No symptoms of HIV disease, with CD4+ cell counts above 350 and viral load below 30,000 copies (bDNA) or 55,000 (RT-PCR).**
  Many experts would delay therapy and continue to monitor CD4+ cell counts and viral load. The risk of disease progression over the next three years in this group is low (below 15%).

- **Acute HIV Infection (very early, typically within days to weeks after initial infection)**
  If infection is suspected, test for HIV using sensitive methods. (Note: technologies that measure viral load are not approved for diagnosing HIV infection and are discouraged for this use.) Experts agree that if treatment is offered this early, it should only be done in the context of a study. People interested in exploring very early treatment should be made aware of all its potential risks. The true long-term effect of early treatment is unknown because current studies are not yet complete. The hope, though, is that it might lead to a less aggressive course of disease. Whether or not this is the "right" approach remains unknown.

(adapted from [illegible])
produced by Glaxo Wellcome, now GlaxoSmithKline.

Walking your way through making a decision

When considering therapy, there are many issues to keep in mind. Though research has not defined an absolute standard time to start anti-HIV therapy, some criteria can assist you in making a decision tailored to your needs. This road map highlights these criteria and may help you in this process. It may be a good idea to bring this with you to your doctor's appointment for discussion. Remember, take your time and don't feel pressure to make the decision today.

1 Your readiness and belief in therapy

Before you start any kind of medical treatment make sure that you're ready. Take time to reflect and contemplate how taking therapy is going to impact your life. Ask yourself questions like: Do I feel ready? What kind of expectations do I have? Do I have a support system or someone I can talk to about therapy? Am I scared? If so, of what am I afraid of? Explore your own beliefs and fears about therapy. Ground yourself in knowledge rather than fears. Talking to other people about their treatment decisions can be extremely beneficial, but remember ... what works for one person does not always work for another.

2 Viral Load

What is your viral load? __________

Has your viral load ***trend*** ...

- ☐ gone up more than 3-fold (ie., an increase from 10,000 to 30,000) or
- ☐ gone down over your last few tests?

30,000 or below (generally considered low)

Therapy is generally not recommended, but if you're experiencing symptoms or have very low CD4+ cell counts, considering therapy might still be warranted.

30,000-50,000

Federal guidelines suggest considering therapy if your CD4+ count is also below 350. However, if your CD4+ cell count is high (above 350), it's reasonable to wait.

Viral load readings, especially in the first 3–5 years after infection with HIV, may be different in women and men. While viral load readings of 30,000–50,000 is generally considered moderate/low in men, this might be high for a woman and signal a more pressing need for intervention.

100,000 or above (considered high)

Increased risk of disease progression. Federal Guidelines strongly suggest and encourage anti-HIV therapy.

For more information, read Project Inform's *Blood Work: A Useful Tool for Monitoring HIV; Wise Words #3;* and *Vaginal Candidiasis.*

3 CD4+ Cell Counts

What is your current CD4+ Cell Count? ___________

Over your last few tests, has your CD4+ cell count ***trend*** ...
☐ gone up or ☐ gone down?

Is your CD4+ count generally declining or is mostly stable, with just modest movement (100 points or less) up and down? A stable CD4+ count, as long as it's above 200, has less risk of progression than one that's steadily declining.

CD4+ cell count above 500 (normal range 500–1,500+)

Maintain good healthy habits (nutrition, exercise, monitor disease progression and labs).

Therapy is generally not recommended. If your viral load is high and/or you're experiencing symptoms, therapy might still be warranted. However, if the CD4+ count is declining rapidly and consistently, and the viral load is high, some doctors might recommend treatment or more frequent monitoring.

CD4+ cell count 200-500

If you are in this range, you may want to consider therapy, especially if you have developed symptoms associated with immune dysfunction. Examples include shingles (zoster), and recurrent and aggressive yeast infections. When no symptoms are present, most doctors would consider delaying treatment at least until the CD4+ count consistently falls below 350.

Guidelines suggest considering therapy when CD4+ cell count is consistently at or below 350

If your CD4+ cell counts are above 200, and you experience recurrent fungal infections (thrush, etc.), preventive therapy for pneumocystis carinii pneumonia (PCP) is recommended.

CD4+ cell count 200 and below

There is an increased risk for developing serious and life-threatening infections (*opportunistic infections*) and therefore the Federal Guidelines highly recommend anti-HIV therapy.

If you choose not to use antivirals at this point, talk with your provider about preventive therapies against common infections, like mycobacterium avium complex (MAC), cytomegalovirus (CMV) and toxoplasmosis. Monitor your lab values, weight, minor symptoms and overall sense of well-being.

If your CD4+ cell count and/or viral load levels change drastically from one test to another, discuss this with your provider. Large sudden changes are often the result of lab errors or other health factors (like a flu shot or stress).

For more information, read Project Inform's *Blood Work: A Useful Tool for Monitoring HIV.*

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HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 2 of 5 (cont.)

4

The goal of HIV treatment

Take time to understand how therapy works. Get informed so you have solid foundation in understanding the goal of treatment. Learn about all of your possible treatment options. It's important to understand the risks and benefits of both ***starting*** and of ***waiting***. If you start therapy now, what are the possible side effects and how will you monitor to make sure therapy is working for you? If you wait to start, or decide not to start at all, what is your risk of HIV disease progression?

Take time to talk with your doctor about his/her opinions and experiences with treatment and other people who you trust and have an understanding of therapy.

For more information, read Project Inform's *Anti-HIV Therapy Strategies.*

5

What about side effects?

There are many side effects from anti-HIV therapy. It's important that you are aware of them and learn how they can be monitored and managed. Not everyone on therapy experiences side effects (only 10–20% of people have serious ones). It's not uncommon for people to have some short-term side effects like nausea and headaches during the first 4-6 weeks of therapy. After this adjustment period, often short-term side effects diminish. Therapies can have long-term side effects too, including body changes (called *lipodystrophy*) and changes in lab results like cholesterol.

For more info, read Project Inform's *Drug Side Effects: Lipodystrophy Syndrome(s);* **and** *Mitochondrial Toxicity and Lactic Acidosis.*

If you come to the decision that you want to start therapy, here are 4 other points to consider before starting and as you develop your strategy.

6

Adherence

Adherence is crucial to treatment being effective. Adherence means taking medications exactly as prescribed by your provider. If anti-HIV medications are not taken according to instructions, the risk of developing drug-resistant HIV increases. Drug-resistant HIV may not respond to the anti-HIV drugs and, as a result, treatment options become limited. Numerous factors can influence adherence: the responsibility of children, your housing status, busy and demanding work, potential side effects from anti-HIV drugs, being in a domestic violence situation and many others.

Take a moment to reflect upon the various factors that can make taking your medications correctly challenging. Discuss this with your provider as you develop a treatment strategy. In addition, use those sources of support which will motivate you to stay adherent.

For more information, read Project Inform's *Adherence: Keeping Up With Your Meds* **and** *Drug Dosing Schedule.*

9

Opportunistic Infections

Have you had any opportunistic infections (OIs)? like MAC, PCP or CMV?

- ☐ **Yes.** If you have an active OI, talk to your physician about treating that OI before you start anti-HIV therapy.
- ☐ **No.** If you have had a major OI, aggressive anti-HIV therapy is almost always recommended after treating the OI.

8

Drug Interactions

Are you currently on any other therapy (contraceptives, methadone, anti-depressants, etc.)? ☐ Yes ☐ No

There are known drug interactions between a variety of drugs, and even herb-drug interactions. These can worsen side effects and/or cause one or both therapies to be less effective. For example, some protease inhibitors can decrease the level of ethinyl-estradiol (chemical in oral contraceptives), making them less effective.

If you decide to take therapy, take all the medications, vitamins, supplements and/or alternative therapies that you're taking to your next doctor's appointment. Whenever you add or change a therapy or supplement, be sure to talk with all your health practitioners (and pharmacist) to make sure these products may be taken together safely.

For more information, read Project Inform's *Drug Interactions.*

7

Co-infection

Have you been diagnosed with Hepatitis C (HCV)? ☐ Yes ☐ No

Some anti-HIV therapies, especially protease inhibitors and non-nucleoside reverse transcriptase inhibitors, can increase liver enzymes and/or cause hepatitis. Liver enzyme levels should be carefully monitored soon after starting anti-HIV therapy.

Are you taking treatment for HCV? ☐ Yes ☐ No

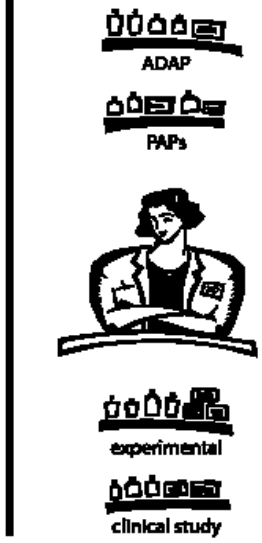
A 1–2 month gap is suggested between starting HIV and HCV treatment.

Treating HIV or HCV first will depend on the stage of liver disease and your CD4+ cell count and/or (HIV) viral load.

For more information, read Project Inform's *Hepatitis C.*

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

four ways to access meds



Most people in the United States get their medications through insurance—either public insurance like Medicaid or Medicare, or private insurance. A comprehensive insurance plan that pays for doctor's visits, hospital and home care, prescriptions and other services is the best way to get quality HIV care. But what do you do if you don't have and can't get complete coverage?

If you can't afford or obtain private insurance, you may have other options. In addition to Medicaid and Medicare, states and even some localities may have services to help you obtain insurance or access care. Some programs, however, don't cover prescription drugs. For example, Medicare (the national insurance program for the elderly and some disabled persons) doesn't cover prescriptions. A description of some of the main drug assistance programs follows.

If you have questions about these programs or need information about how to qualify and participate, call Project Inform's Hotline at 1-800-822-7422. The Hotline will help you explore your options and link you to local resources. For more information on Medicaid and AIDS Drug Assistance Programs, visit *www.aidsinfonyc.org/network/access*.

1 AIDS DRUG ASSISTANCE PROGRAM

The AIDS Drug Assistance Program (ADAP) is a federal and state program that provides HIV-related medications to uninsured and underinsured people who can't otherwise afford them. All 50 states, the District of Columbia, Puerto Rico, Guam and the Virgin Islands have ADAPs. Benefits and eligibility vary from state to state. Due to inadequate funding, some ADAPs may experience shortages that limit services in the upcoming year. You can sign up at offices in various locations.

2 PATIENT ASSISTANCE PROGRAMS

Patient Assistance Programs (PAPs) are run by drug companies. They provide prescription drugs to people without means of getting the drug. The eligibility criteria are not public but do include income limits. PAPs can be more difficult to use because each company has a separate program with its own application process. You have to reapply fairly often. Usually, your doctor or medical advocate has to fill out paperwork. Some companies also charge a small co-payment each time you get your drugs. You can sign up by contacting the company that makes the drug you need.

3 EXPERIMENTAL DRUGS

EXPERIMENTAL DRUGS: Sometimes you may need or want an experimental drug not yet approved by the Food and Drug Administration. Because less is known about experimental drugs, it's important to consult closely with your doctor before making decisions. There are two ways you can get these drugs. EXPANDED ACCESS PROGRAMS are run by drug companies. They allow people who meet certain medical criteria to get experimental drugs. You sign up through your doctor's office. COMPASSIONATE USE typically does not have pre-set criteria. Working with your doctor, you can apply to get the drug, and the company then decides on a case-by-case basis.

4 CLINICAL STUDIES

Clinical studies may be run by drug companies or academic institutions. They are research studies and not meant to provide ongoing treatment or care. However, there may be good reasons to consider enrolling. Work closely with your doctor and make sure you read and understand the study's *informed consent* form. Informed consent is a document that details the study, known risks of the experimental drug and your rights as a research subject. It can be technical and confusing. Be sure your questions are answered before you sign and enter the study.

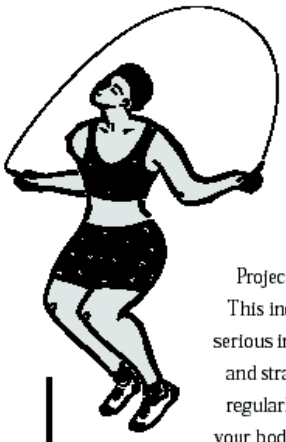
SESSION HANDOUT # 2 of 5 (cont.)

it's never too early to take charge of your health

developing a comprehensive health plan is something that's better done sooner rather than later. This means a plan that addresses health as it concerns your whole being. It includes the health of your body (biological health), mind (psychological health), spirit (spiritual health), and community (social health).

Each area is connected to one another. So, improving health in one has benefits in other areas too. Studies show that people facing life-threatening illnesses who address health holistically live longer and have a better quality of life. Some people think holistic means excluding things, like medicines. Instead, it is an inclusive approach that uses medicines as needed, but also addresses other needs.

The key to creating a solid long-term plan is to make gradual improvements, ones that you can sustain and fit into your lifestyle. There's no one right way to do this—no perfect recipe. In fact, tailoring a plan that you feel good about and matches your beliefs about health and well-being is central to success.



the mind

It's easy to see how improving the body might have a positive impact on your psychological health as well. Reducing stress not only strengthens the immune system, but it also clears the head! Many people with HIV experience depression, especially people who are co-infected with HIV and hepatitis B or C. A disproportionate number of people live with both HIV and mental illness. Some mental illnesses may be caused, sustained or worsened by HIV. Seeing a therapist, especially one with HIV experience, can help you manage the unique challenges of living with HIV. Seeking support groups with professional facilitation is another option. Resolving tensions or resentments, dealing with your fears, addressing depression and diagnosing and managing mental illness all help to improve your psychological health. This includes finding space and time to reflect on your life and your mental and emotional health.

the body

Project Inform provides many resources about biological health and HIV. This includes information on anti-HIV therapy and preventing and treating serious infections. It also includes information on nutrition, stress reduction and strategies for understanding your test results and monitoring your health regularly. Building a strong foundation of biological health will strengthen your body, reduce side effects of therapies and increase the likelihood that you will benefit from therapies. Also, if you choose not to use therapies, strengthening your body will help it fight disease and remain healthy.

get enough sleep

Eight hours a night is recommended. This isn't possible for everyone, especially women with young children and infants. But if you only sleep five hours a night, then five hours and fifteen minutes is an improvement!

reduce stress

Chemicals released in the body when you are stressed out weaken your immune system. A recent study suggests that stress decreases the benefit of anti-HIV therapy. Taking time for yourself, meditating, talking with friends about what's going on in your life and seeking support are all ways to promote health and reduce stress.

eat well

HIV hangs out in lymph tissue. 80% of the lymph tissue in the body is in the gut, where food and nutrients are absorbed into the body. Eating three balanced meals daily is a good way to improve nutrition. Taking vitamins is probably not necessary if you're eating well, and it's likely true that the best way to get vitamins is from food. Still, adding a multi-vitamin to your daily diet is not harmful and could be helpful! Improve your diet gradually, in ways you can sustain and fit into your life. Sudden and dramatic changes in diet can cause stomach upset and other problems.

exercise

Blood and other fluids move more effectively through the body when our hearts beat faster and when muscles move. Keeping things moving helps your cells get to where they need to be, moves oxygen throughout your body and helps keep you healthy. Aerobic exercise—like walking, running, swimming and biking—is particularly good for keeping things moving. Again, gradual improvements are key to success. If you never go to a gym, then committing to stretching a few minutes each day is one way to start. You could also simply take a walk around the block and then extend your walking distance over time.

continues on page 8 ...

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

it's never too early continued

the community

Social networks are critical to promoting health and well-being. These include friends, family and the people in the various communities you identify with. Improving social health might mean changing the relationships you have, like ending relationships that are harmful. It might mean nurturing and strengthening existing or new relationships. Social health is about cultivating a network of people around you who support you in exploring and achieving your potential. They help you in difficult times and speak with you openly and honestly. Social health is also about giving back to the community. This might include volunteer work, becoming involved in civic activities or starting a buddy network of people who help each other.

the spirit

A number of studies suggest that people facing life-threatening diseases who have a strong spiritual foundation live longer and have a better quality of life. Whether that foundation rests in Judaism, Christianity, Buddhism, Islam, native spiritual beliefs or religions of nature may be less important than nurturing a spiritual well-being that supports your beliefs in a personally meaningful and life-affirming way. There are many spiritual paths to explore. For one person this may be Catholicism; for another it may be Wicken. For someone else it may be a personal spiritual path of expression not associated with an organized religion.

These are just a few places to start thinking about in building a holistic foundation of health. You might find it useful to keep a diary. You could record things like your lab work, menstrual cycles and changes, how you're feeling and any symptoms or health conditions you're experiencing. You could also outline what you're doing to promote your health in various areas.

Project Inform is mostly a resource for biological health, as it relates to treating HIV and its related conditions. Biological health is only one aspect of overall health, however, and information about therapies and ways to treat HIV is not the entire picture of biological health. It also includes general healthcare, routine physicals and age-appropriate screening (like mammograms to detect breast cancer, bone density screening for osteoporosis, etc.), addressing substance use and addiction to name a few.

Resources for exploring and promoting psychological, spiritual and social health are available in your local community. How you address health in these areas will likely be as unique as you are. There's no one holistic health plan that's best for everyone. The first step to defining what's best for you requires you to define health for yourself.

PROJECT inform
Information, Inspiration and Advocacy for People Living With HIV/AIDS

205 13th Street
Suite 2001
San Francisco, CA
94103-2461

TEL 415.558.8669
FAX 415.558.0684
HOTLINE 800.822.7422

EMAIL
support@projectinform.org

WEBSITE
www.projectinform.org

Wise Words

YES, I WANT TO HELP PROJECT INFORM! OUR MAILING LIST IS CONFIDENTIAL.

☐ WISE WORDS ☐ EN ESPAÑOL
Three-times yearly newsletter with information by, for and about women.

☐ PI PERSPECTIVE
Three-times yearly cutting-edge HIV treatment journal.

☐ INTRO PACKET ☐ EN ESPAÑOL
Beginning HIV treatment information to help you make decisions.

☐ TAN ALERT
Grassroots advocacy network newsletter.

☐ Enclosed is my donation of $_____ to help Project Inform.
☐ I can't help right now, but I would like to receive the free publications checked at left.
☐ Please take me off your mailing list.

Mr. / Ms. / Mrs.

Address ☐ This is a new address.

City State Zip Email WWRD

Project Inform 205 13th Street, Suite 2001 San Francisco, CA 94103-2461 TEL 415.558.8669 FAX 415.558.0684 HOTLINE 1-800-822-7422

SESSION HANDOUT # 3 of 5

DEALING WITH DRUG SIDE EFFECTS

suggestions for coping with the side effects from taking medications

A PUBLICATION FROM
PROJECT inform
Information, Inspiration and Advocacy for People Living With HIV/AIDS
JANUARY 2004

Dealing with drug side effects can be a challenge for anyone. Every anti-HIV drug has its own possible side effects. This is also true of drugs that prevent and treat infections. These effects can vary from one person to the next. Some people experience few or no side effects at all, while some have ones that are mild and manageable. For others, they may be quite severe. This publication provides a discussion on coping with side effects and tips for managing them. On pages 4–6, charts provide information about the side effects seen in studies and the percentage of people who had them.

The key to coping with your side effects

The key to coping with side effects is knowing what to watch out for and having a plan in place to respond if problems occur. If a drug you are taking or are planning to take has a side effect that may be life-threatening, it's important to know what early symptoms of that effect are and to monitor for them. It is also possible to prevent or reduce the seriousness of some side effects by taking certain preventive therapies a few days before or at the same time as starting a new regimen.

Before starting any therapy, talk to your doctor about the risk of side effects from various drugs. This information usually comes from studies conducted on the drug. Ask how often side effects were reported.

Are women different?

Women may experience a different type or frequency in side effects compared to men, including therapies not related to HIV. Why this is so is not well understood. It may be due to differences in the way a woman's body breaks down or stores drugs. Generally speaking, women have smaller body weight/sizes than men. It may be that, for their weight, some women take too high a dose of drug. This could also be an issue for men with small frames. Women's hormones may also affect drugs. Or it may be due to other unknown differences. Still, current information about side effects remains useful in guiding the ways women manage them.

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HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)

What to look for, what to do?

Many people experience an adjustment period when starting a new therapy. This period usually lasts about four to six weeks as your body adapts to the new drug. During this time, you may experience headache, nausea, muscle pain in your arms and occasional dizziness. These kinds of side effects typically lessen or disappear as your body adjusts.

Learn to recognize, monitor and manage side effects should they arise. Often, simple solutions exist to lessen many side effects. In other cases, a particular side effect may be an important signal that requires immediate medical attention.

Once you notice any unusual reactions after starting or changing a drug, report the side effects to your doctor. If possible, talk to others who have used the same drug. They may be able to offer solutions.

Caring for your whole self

Some conditions believed to be side effects may actually be due to anxiety, depression or stress. Caring for your *whole* self—including your emotions, thoughts and general health, as well as specific anti-HIV strategies—can help minimize negative feelings and their effects.

There are some things you can do that may make the adjustment period easier. If possible, take some time off work or lighten your schedule to allow yourself to adjust to the change. If things get hard, see if someone can help out around the house or with children or other obligations.

Take time to re-prioritize *your* health needs, and make sure you get plenty of sleep and rest. Eat well and keep foods on hand that help combat common side effects like nausea and diarrhea (see pages 3 & 8). Try to get a little exercise during the day—even if just taking a walk.

Most importantly, reach out for support—be it your family, friends or support group. If you can, let them know what's going on. Sometimes just talking helps, but they may also have ideas to help ease side effects that your doctor might not mention.

A word about switching

Sometimes people facing serious side effects will ***switch*** drugs simply to improve their quality of life, even though the drugs were controlling HIV well. This is one way to deal with the side effects linked to that drug.

Switching a drug solely because of side effects may also save that drug as a future treatment option. In fact, side effects that you have with a drug at one time *may not* occur again if or when you try that drug again.

However, it is dangerous to simply ***stop*** taking one drug in your regimen, reduce its dose without talking to your doctor or pharmacist, or decide only to take it periodically. This can do more harm than good as it leads to drug resistance, making that drug—and perhaps others—less useful for you now or in the future.

Getting a handle on side effects

Side effects often occur after starting a new anti-HIV drug but lessen or disappear after a few weeks. Other times they persist as long as that drug or combination is used.

Many symptoms related to drug side effects are also conditions that people face when they have other health conditions. This may include infections, hormonal imbalances, pregnancy, depression or HIV itself.

Whenever you have symptoms, it's important to talk to your doctor to diagnose the cause. But regardless of how severe or persistent the side effects are, you can try some things to manage them. The tips on the following pages are for *medication* side effects.

Fatigue

It's not unusual to feel tired, especially when life is hectic. A sense of tiredness that doesn't go away with rest is a problem. If ignored, fatigue can worsen.

Symptoms of fatigue can be physical—like it's difficult to getting out of bed or walk up stairs. They can also be psychological—like having a hard time concentrating. Fatigue is also a symptom of another drug side effect—anemia.

Getting a handle on fatigue begins with acknowledging it. If you're feeling fatigued, ask yourself: how long have you been tired? Are there activities that are difficult today that weren't a problem a few months ago? Are you having trouble concentrating? Are you having trouble sleeping or sleeping more than normal? The more information you can give your doctor about your physical, psychological and daily habits, the more likely the two of you will be able to decide the proper treatment for your fatigue.

TIPS FOR FATIGUE

- **Try going to sleep at night and waking in the morning at the same time every day. Changes in your sleep schedule can actually make you feel tired.**
- **Try to get a little exercise. Exercise eases stress and makes you feel stronger and alive.**
- **Keep easy-to-prepare foods on hand for times you're too tired to cook.**

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)

Rash

Rash seems to occur slightly more often among women taking certain anti-HIV drugs than men, though it does occur in men as well. Nevirapine (Viramune) and nelfinavir (Viracept) appear to be the main culprits, but more research on rash among women taking other anti-HIV drugs is needed. Of note is the fact that it is not just that rash seems to occur more often in women, but women appear more prone to *severe* rash. It's important to check your skin for discoloration and changes in its surface, especially after starting a new medicine.

TIPS FOR RASH

- Keep medications like Benadryl on hand in case you develop a rash. It will soothe and comfort the skin.
- Try using unscented, non-soap cleansers or oatmeal soaps.
- Avoid extra hot showers or baths. They irritate the skin.
- Protect your rash from sun exposure as the ultraviolet (UV) rays of the sun may exacerbate a rash.

Peripheral Neuropathy

Peripheral neuropathy is caused by damage to nerves. When these nerves are damaged, it can cause a sensation of burning, stinging, stiffness, tickling or numbness in the feet, toes or hands. These sensations can be mild or severe enough to prevent someone from being able to walk. Peripheral neuropathy can be caused by HIV itself or as a side effect of certain anti-HIV drugs or drugs to treat opportunistic infections.

Treatment of peripheral neuropathy usually involves stopping or decreasing the offending drug. This usually results in clearing up the symptoms. However, there is no drug that can reverse nerve damage. *Talk to your doctor if you have signs of peripheral neuropathy.* If neuropathy is severe, it's a good idea to consult a doctor that specializes in pain management.

TIPS FOR PERIPHERAL NEUROPATHY

- Wear loose-fitting shoes, roomy cotton socks, and padded slippers around the house. Good air circulation around the feet helps.
- Keep feet uncovered in bed. Bedding that presses down on your toes can add to the problem.
- Walk around, but not too much. Walking helps blood circulate in the feet (a good thing), but too much walking or standing can make the problem worse.
- Soak feet in ice water to reduce foot pain.
- Massage your feet. This reduces foot pain temporarily.
- Try ibuprofen to reduce pain and swelling.
- Use L-acetyl carnitine (available at health food stores or through prescription) to prevent the peripheral neuropathy related to ddI, d4T and/or hydroxyurea.

Diarrhea

Aside from being annoying, the biggest concern is that diarrhea can cause dehydration. So the first course of action is to replenish lost liquids by drinking plenty of fluids, like Gatorade, ginger ale, chicken or beef broth, herb tea or just plain water. Chronic diarrhea may lead to weight loss. Foods that provide nutrients, calories, and absorb liquid (like the BRAT diet—bananas, rice, applesauce and toast) are good ways to deal with diarrhea.

Anti-diarrhea medications like Lomotil, Kaopectate, Imodium, or Pepto-Bismol can help, as can bulking laxatives like Metamucil. Nutritional supplements, such as L-Glutamine, Provir or Shaman Botanicals-Normal Stool Formula (SB-NSF) may also help, but can be expensive.

TIPS FOR DIARRHEA

- Eat foods high in *soluble fiber,* which slows diarrhea by absorbing liquid. In addition to the BRAT diet, these foods include oatmeal, cream of wheat, grits and soft bread (not whole grain).
- Try psyillium husk fiber bars (another source of *soluble fiber*). A recent study showed that two bars eaten one hour before bedtime with a large glass of water can really help diarrhea. They can be found at health food stores.
- Avoid foods high in *insoluble fiber*, like the skins of vegetables and fruits. These foods can make diarrhea worse.
- Try to avoid milk products and greasy, high-fiber or very sweet foods. They tend to aggravate diarrhea.
- Try calcium supplements (500mg twice a day).

SESSION HANDOUT # 3 of 5 (cont.)

Side effects chart of drugs used to treat HIV

This chart may not adequately reflect the percentages of side effects seen in women due to the limited number of women in many studies of these drugs.

HOW TO USE IT

The left hand column (vertical) lists all the side effects reported for the combined list of drugs. The top row (horizontal) lists drugs most commonly used in HIV disease. The columns underneath each drug heading lists the rough percentage of people reporting each side effect for each drug.

DRUG SIDE EFFECTS	Protease Inhibitors								
	Amprenavir	Atazanavir	Fosamprenavir	Indinavir	Lopinavir + ritonavir	Nelfinavir	Ritonavir	Saquinavir (hgc)	Saquinavir (sgc)
Abdominal pain		⦿		⦿	◇	◇	◇	◇	⦿
Altered taste	◇			◇			⦿	◇	◇
Anorexia (reduced appetite)		◇		◇		◇	⦿	◇	◇
Arthralgia (joint pain)						◇		◇	◇
Chills							◇	◇	◇
Constipation		◇					◇	◇	◇
Depression	◇	⦿				◇	◇	◇	
Diarrhea	⦿	⦿	⦿	◇	■	■	■	◇	■
Dizziness		◇		◇		◇	◇	◇	◇
Fatigue		◇		◇			◇	◇	⦿
Fevers		◇		◇		◇	◇	◇	◇
Headache		⦿		⦿	◇	◇	⦿	◇	⦿
Insomnia (sleep problems)		◇			◇	◇	◇	◇	⦿
Malaise		◇		◇			◇	◇	◇
Menstrual Irregularities							◇		◇
Myalgia (muscle pain)		◇				◇	◇	◇	◇
Nausea	■	⦿	⦿	⦿	⦿	⦿	■	◇	■
Nephrolithiasis (kidney stones)				⦿ ■[c]					
Neurological Symptoms		◇				◇	◇	◇	◇
Neuropathy (pain/tingling in arms/legs/hands/feet)							◇	◇	◇
Pancreatitis (inflammation of pancreas)		◇‡		◇‡		◇‡	◇‡	◇‡	◇‡
Paresthesia (numbness, prickling, tingling)	■			◇			⦿	◇	◇
Rash	■‡	⦿‡	⦿‡	◇‡		◇‡	◇	◇‡	◇
Seizures						◇			
Vomiting	⦿	⦿	◇	⦿	◇	◇	⦿	◇	◇

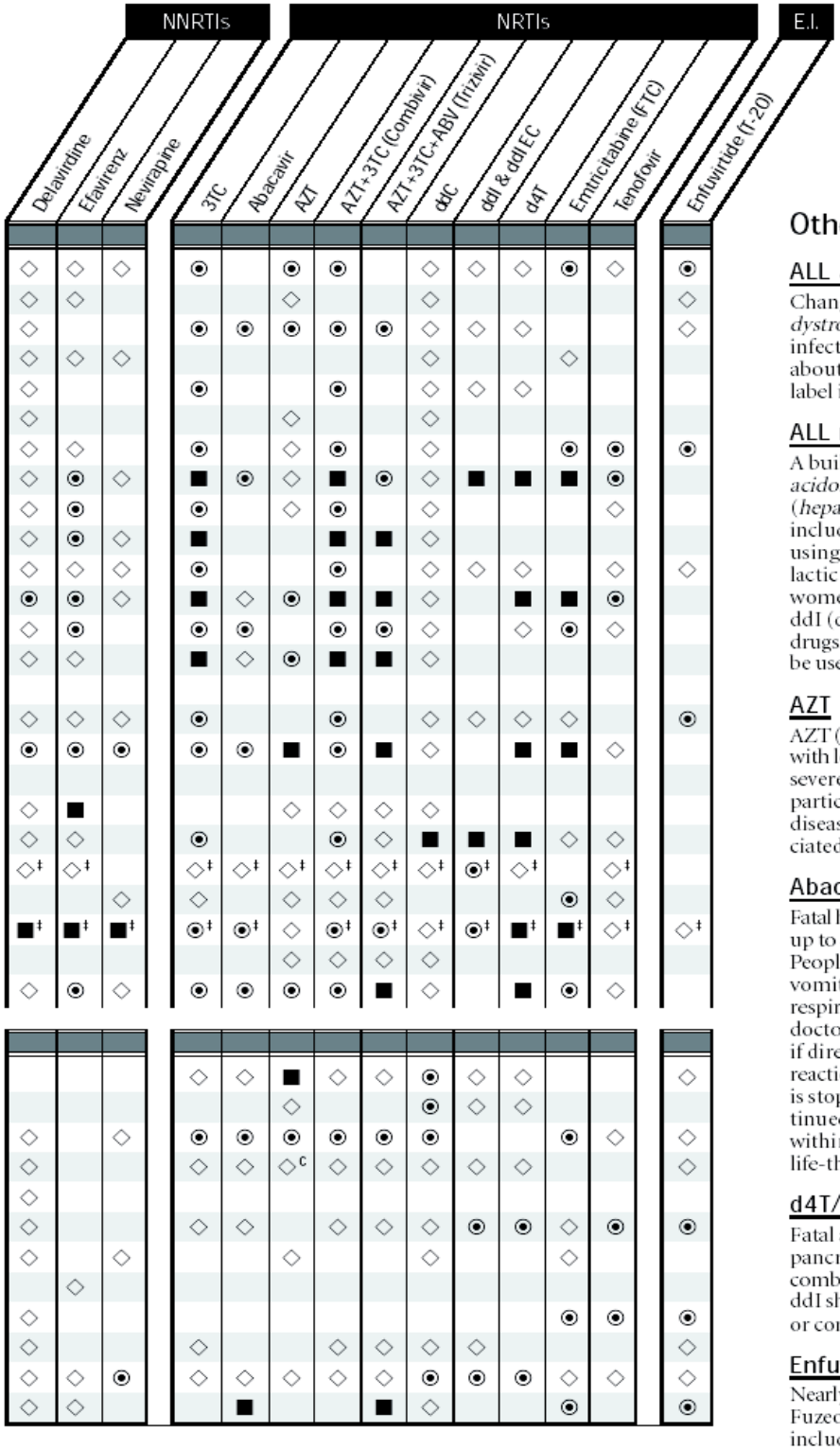
DRUG SIDE EFFECTS ON LAB VALUES									
Anemia (low red blood/hemoglobin count)						◇	◇	◇	◇
Leukopenia (low white blood cell count)						◇	◇		
Neutropenia (low neutrophil count)		◇		◇	◇	◇		◇	◇
Thrombocytopenia (low platelet count)					◇[c]	◇	◇	◇	◇
Elevated Alkaline Phosphatase (liver)						◇			
Elevated Amylase (pancreas)		◇		◇	◇	◇			
Elevated Bilirubin (liver)		■		⦿	◇[c]	◇		◇	◇
Elevated Cholesterol	◇	◇		◇	⦿	◇	■	◇	◇
Elevated Creatinine (kidney)						◇			
Elevated Glucose (blood sugar)	⦿		◇	◇	◇	◇	◇	◇	◇
Elevated Liver Functions	◇	◇	⦿		⦿	◇	⦿	◇	◇
Elevated Triglycerides (cholesterol)	⦿			◇	⦿	◇	■	◇	◇

EXPLANATION OF BULLETS

- ■ Reported in >15% of people in clinical studies.
- ⦿ Reported in 5–15% of people in clinical studies.
- ◇ Reported in <5% of people in clinical studies.
- blank space Side effect has not been reported.
- c Side effect reported only in children, or more commonly in children.
- ‡ Potentially fatal side effect.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)



Other Side Effect Warnings

ALL anti-HIV drugs

Changes in body fat distribution, called *lipodystrophy*, has been associated both with HIV infection and anti-HIV therapy. A warning about lipodystrophy is now included in the label information for all anti-HIV drugs.

ALL nucleoside analogs (NRTIs)

A build-up of lactic acid in the body (*lactic acidosis*) and severe liver enlargement (*hepatomegaly*) with fatty liver (*steatosis*), including fatal cases, have been reported with using NRTIs alone or in combination. Fatal lactic acidosis has been reported in pregnant women who took d4T (stavudine, Zerit) and ddI (didanosine, Videx) with other anti-HIV drugs. The combination of d4T and ddI should be used with caution during pregnancy.

AZT

AZT (zidovudine, Retrovir) has been associated with low neutrophil counts (*neutropenia*) and severe reductions in red blood cells (*anemia*), particularly in patients with advanced HIV disease. Prolonged use of AZT has been associated with muscle weakness (*myopathy*).

Abacavir

Fatal hypersensitivity reactions have occurred in up to 8.5% of people taking abacavir (Ziagen). People with fever, skin rash, fatigue, nausea, vomiting, diarrhea, abdominal pain, and/or respiratory symptoms are advised to call their doctor *immediately* and stop using abacavir if directed, as soon as a hypersensitivity reaction is suspected. Once abacavir treatment is stopped, it should be permanently discontinued as a more severe reaction may recur within hours if it is restarted and may include life-threatening symptoms and death.

d4T/ddI

Fatal and non-fatal inflammation in the pancreas (*pancreatitis*) has occurred with the combination of d4T and ddI. Neither d4T nor ddI should be used in people with suspected or confirmed pancreatitis.

Enfuvirtide

Nearly 100% of people using enfuvirtide (T-20, Fuzeon) will have injection site reactions including redness, inflammation, pain and hardening of the skin.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)

Side effects chart of drugs used to treat common OIs

This chart may not adequately reflect the percentages of side effects seen in women due to the limited number of women in many studies of these drugs.

	MAC/MAI			PCP			CMV			FU GA
	Azithromycin	Clarithromycin	Rifabutin	Bactrim/Septra	Dapsone	Aero. Pentamidine	Cidofovir	Ganciclovir (IV)	Foscarnet	Fluconazole
DRUG SIDE EFFECTS										
Abdominal pain	◇	◇	◇	◇					◉	◇
Altered taste		◉	◇			◇			◇	
Anorexia (reduced appetite)			◇	◉			■	◉	◉	
Arthralgia (joint pain)				◇					◇	
Chills							■	◉		
Constipation									◇	
Depression									◉	
Diarrhea	◉	◉	◇				■	■	■	◇
Dizziness						◇			◉	
Fatigue									◉	
Fevers			◇			◇	◉	■	■	
Headache	◇	◇	◇	◇	◇		■		■	◇
Insomnia (sleep problems)			◇						◇	
Malaise										
Menstrual Irregularities										
Myalgia (muscle pain)			◇	◇					◇	
Nausea	◇	◇	◉	◉	◇	◉	■		■	◇
Nephrolithiasis (kidney stones)										
Neurological Symptoms										
Neuropathy (pain/tingling in arms/legs/hands/feet)								◉	◉	
Pancreatitis (inflammation of pancreas)									◇‡	
Paresthesia (numbness, prickling, tingling)									◉	
Rash	◇‡	◇c‡	◉‡	◉‡	◉‡	◇‡	■‡			◇‡
Seizures									◉	
Vomiting	◉c	◉c	◇	◉	◇		■	◉	■	◇
DRUG EFFECTS ON LAB VALUES										
Anemia (low red blood/hemoglobin count)	◇		◉	◇	◇	◇	■	■	■	
Leukopenia (low white blood cell count)	◇		■	◇	◇	◉		■	◉	◇
Neutropenia (low neutrophil count)	◇		■	◇			■			◇
Thrombocytopenia (low platelet count)	◇		◉			◇		◉		◇
Elevated Alkaline Phosphatase (liver)			◇						◇	
Elevated Amylase (pancreas)										
Elevated Bilirubin (liver)	◇			◇						
Elevated Cholesterol										
Elevated Creatinine (kidney)	◇					◇	■		◉	
Elevated Glucose (blood sugar)	◇									
Elevated Liver Functions	◇		◉			◉				
Elevated Triglycerides (cholesterol)										

EXPLANATION OF BULLETS

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HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)

Dry Mouth

Dry mouth can result from taking certain medicines. It is an uncomfortable condition, making chewing, swallowing and talking difficult. Dry mouth can affect your sense of taste and can promote mouth problems, like tooth decay and oral yeast infections (*thrush*). Treating dry mouth can be as simple as drinking plenty of liquids during or between meals. Avoid sugary or sticky foods or caffeinated drinks as they can make your mouth even drier. Chewing sugarless gum can stimulate saliva. If these things don't work, your doctor can prescribe a synthetic saliva or other medicine, like pilocarpine.

TIPS FOR DRY MOUTH

- Rinse your mouth throughout the day with salted warm water.
- Try *slippery elm* or *licorice tea* (available in health food stores)—they lubricate the mouth and taste great!
- Suck on sugarless candies, lozenges or crushed ice to cool the mouth and give it moisture.
- Ask your doctor to prescribe products or mouth rinses to treat dry mouth.

Headache

The most common cause of headache is tension, something most people have at some point! Different kinds of medicines can also cause them. Headaches are mostly just a pain and can be eased by over-the-counter medicines like aspirin, acetaminophen, ibuprofen, or naproxen sodium. They can also be helped, and prevented, by reducing stress.

TIPS FOR HEADACHE

- For on-the-spot headache relief: try resting in a quiet, dark room with your eyes closed; place cold washcloths over your eyes; massage the base of your skull with your thumbs and massage both temples gently; take hot baths.
- To prevent headaches from recurring: try to anticipate when pain will strike. Avoid or limit foods known to trigger headaches, especially caffeine (from coffee, tea, soft drinks or some medications), chocolate, red wine, citrus fruit (if more than 1/2 cup a day), food additives (like monosodium glutamate, or MSG), nuts, onions, hard cheese and vinegar.

Hair Loss

Most people experience hair loss as they get older. This is normal and affects some people more than others, especially if baldness runs in the family. Hair loss can be disturbing nonetheless and can damage one's self-confidence.

Sudden or abnormal hair loss can result from taking certain drugs (like some used to treat HIV, cancer, circulatory disorders, ulcers or arthritis).

TIPS FOR HAIR LOSS

- To protect your hair from further damage and loss: avoid or decrease damaging hair care practices or use them infrequently. These include dyeing, perming, straightening, braiding, corn-rowing, using hair dryers, etc.
- Don't be fooled by fraudulent claims for products that promise to cure baldness. They do not exist! The only remedy that comes close is the medication Rogaine, available over-the-counter. It has shown promising results for some (but not many) cases of baldness.
- Stress can make hair loss worse, so taking steps to reduce stress and anxiety often help.

Anemia

Anemia is low red blood cells. Those are the cells that deliver oxygen to different parts of your body. When your body is short on oxygen, you feel fatigued. Long-term or severe anemia can cause damage to your body. Most people with HIV have anemia at some point. HIV can cause it. So do many drugs used to treat HIV, like AZT (Retrovir). For women, problems with periods can also be a cause or symptom of anemia.

To check for anemia, have blood work done at least every three months, even if you're not using anti-HIV drugs. A change in diet or nutritional supplements can lower the risk of developing anemia. Using medication to correct moderate anemia (Procrit, Epogen) can also help. In some cases, stopping or changing the drugs that are causing anemia may be necessary. Treating severe anemia requires a blood transfusion.

TIPS FOR ANEMIA

- Know your red blood cell (hemoglobin) count! Get it checked regularly.
- Fish, meat, and poultry are high in iron and vitamin B-12, both of which may lower risk of anemia.
- Spinach, asparagus, dark leafy greens, and lima beans are high in folic acid, another nutrient that may lower risk of anemia.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 3 of 5 (cont.)

Nausea and Vomiting

Feelings of nausea and the urge to vomit vary greatly among people. The two symptoms often occur together. Certain medications used to treat HIV or related conditions can cause nausea. (See the Drug Side Effects Chart on pages 4–6 to identify drugs that may commonly cause nausea.)

Persistent vomiting can lead to serious medical problems, like dehydration, chemical imbalances and even tearing of the esophagus (throat). Call your doctor if you vomit repeatedly throughout the day or if nausea or vomiting is persistent and/or interferes with your ability to take your medication.

- The BRAT Diet (Bananas, Rice, Applesauce, and Toast) helps with nausea and diarrhea.
- Leave dry crackers by your bed. Before getting out of bed in the morning, eat a few and sit in bed for a few minutes. This can help reduce nausea.
- Try some peppermint, chamomile or ginger tea—they can calm the stomach.
- Sip cold carbonated drinks like ginger-ale, 7-Up or Sprite. They can help avoid nausea.
- Avoid hot, spicy, strong-smelling and greasy foods.
- If vomiting occurs, replenish fluids with broth, carbonated beverages, juice, Jell-O or popsicles.
- Talk to your doctor about the benefits/risks of anti-nausea medications (such as Compazine, Marinol, Ativan, Tigan, Zofran and Phenergan).

Weight Loss

Weight loss can be a serious problem in HIV disease. It can result from some of the side effects discussed in this section—like vomiting, nausea, dry mouth, anemia or fatigue.

Unfortunately, even though the signs of weight loss can be obvious, it is not always seen as a problem. In fact, many positive women who lose weight due to HIV-related problems are praised and told they "look good".

If you're losing weight and it's not because you altered your diet or exercise patterns for that purpose, it's ***never*** a good thing. Talking to a doctor to identify its cause is critical to treating unwanted weight loss.

TIPS FOR WEIGHT LOSS

- Monitor your weight. If you are losing weight, work with your doctor to determine the cause. Is it stress-related? Is it accompanying nausea or vomiting? Has it occurred after starting a new medicine? What other things are going on?
- Try high protein shake mixes, like Med-Rx or Metabol. Look for products high in protein and low in sugar. These are available at most health food and vitamin stores.
- Ask about discounts at health food and vitamin stores. They sometimes provide people with life-threatening diseases special savings on nutritional products.

Period Problems

Period problems are common in all women, but particularly in women with weakened immune systems. These problems include irregular, heavier, lighter and/or painful periods or the end of menstrual bleeding altogether. Problems with periods can be a side effect of some medications. Most recently, excessive menstrual bleeding has been seen when using ritonavir (Norvir).

More research is needed to determine which anti-HIV drugs have an effect on menstruation. Meanwhile, it's a good idea to track your periods, noting changes if they occur, particularly around the time of beginning a new anti-HIV drug.

TIPS FOR PERIOD PROBLEMS

- Consider what else is happening in your life. Have you lost weight? Are you stressed out? These factors might give you clues as to why you're having period problems. Addressing them might help in more ways than one!
- For menstrual cramps, hold a hot water bottle or a heating pad over your lower stomach or back. Or take a hot bath. This reduces stress, too!
- Do mild exercise, like walking or stretching. Exercise may increase blood flow and decrease period pain.
- Oral contraceptives (the Pill) are sometimes used to regulate abnormal periods. Some anti-HIV drugs interact with the Pill. A list of drug interactions can be found in Project Inform's publication, GYN Conditions in Women Living with HIV/AIDS.

MEDITATION ON TAKING MEDICATION WITHIN

By Stephen Levine

(To be read slowly to a friend or silently to oneself)

Sitting comfortably in a chair or lying easily in bed, pick up the medicine container and just feel it there in your hand. Feel its shape, its denseness, its texture, its quality of coldness or warmth. Let your hand make contact, feel the sensations generated there. Let the fingers open the container with awareness. Notice any strain or urgency and soften all about it. Feel the medications, the pills, as they drop onto the palm of your hand. Take a moment to look at the pills.

Take a moment to notice if the pill is regarded wholeheartedly as a medium of healing, or if there is a modicum of shame or failure that accompanies it.

Focusing on the healing quality with the medication, look on the medicine as a healing potential to enter fully into the area of discomfort, its power to bring equanimity and balance. See the pills there in your hand. Feel their slight weight against the sensitive nerve endings in your palm.

Listen to the medicine. Does it have something to say? What is it tone of voice? Is there any sense of helplessness in your relationship to the medicine? Just notice it. Meet with mercy and awareness any resistance we may have previously ingested along with our treatments. Look on these medications with loving kindness and gratitude.

Thank the pills for whatever healing they may have to offer and place them gently in your mouth. Feel your tongue, feel the liquid taken to swallow it entering across your lips. Feel the tongue moving the pills into position to be swallowed. Feel the swallowing. Let the pills be drawn past the heart into the awaiting stomach. Feel the medication settling into your stomach, radiating like a soft golden light. Feel the medication conveyed into the place of need.

With loving kindness, direct its healing quality to the area of greatest need. Feel the area absorb the healing. Let it in. Receive the medication as a blessing. Find an image that opens you to the healing in your medication. See it as a gift from a great teacher, as a sacred communion between the outer and inner worlds, as a smile of unbearable compassion. Let it in. Absorb it.

Allow the loving kindness to combine with the treatment and direct it into the area that calls for healing. Allow the medication to be drawn in, mercy and awareness binding to each molecule sent wholeheartedly into the cause of suffering.

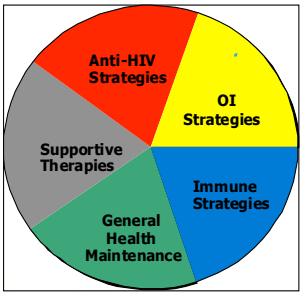
Feel the medication dissolving the resistance of a lifetime, dispelling the tension and difficulty around illness. Feel it enter directly. Feel it melting the injury and illness. Let the medication heal you and make you whole again.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 5 of 5

HIV Treatment 101

A Holistic Approach To Your Health



Making a Treatment Decision

- Choose and develop a relationship with a doctor
- Get informed
  - ? Learn about HIV
  - ? Understand anti-HIV treatment and how to take care of your health.
  - ? Know your body! Know yourself
- Plan for the long term
- Find a support network
- Ask, ask, ask until you understand

Fundamentals

against infections and diseases.

- HIV infects CD4+ T cells *(a key component of the immune system)* and other cells.
- Loss of CD4+ cells and other factors cause the immune system to weaken gradually.
- Body *gradually* loses ability to fight off infections.
- Other factors can further weaken the immune system
  - Active infections, stress, poor nutrition, other lifestyle factors

Goals of Anti-HIV Therapy

- PROLONG and improve the quality of life.
- SUPRESS the amount of HIV produced (viral load).
- OPTIMIZE your options for Anti-HIV therapy.
- MINIMIZE drug toxicity and manage side effects and drug interactions.

HIV Medications

- **Entry Inhibitors**
  - ? Fusion Inhibitors
- **Reverse Transcriptase Inhibitors**
  - ? Nucleoside Analog Reverse Transcriptase Inhibitors
  - ? Non-Nucleoside Analog Reverse Transcriptase Inhibitors
  - ? NucleoTIDE Analog Reverse Transcriptase Inhibitors
- **Protease Inhibitors**
- **Integrase Inhibitors**
- **Multi-class Combination Drugs**

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 5 of 5 (cont.)

The Toolbox of HIV Medications

- Ziagen (abacavir, ABC)
- Epivir (lamivudine,3TC)
- Emtriva (emtricitabine)
- Epizicom (Ziagen + Epivir)
- Truvada (Retrovir+ Epivir+Ziagen)
- Zerit (stavudine, D4T)
- Videx/Videx E-EC (didanosine, ddI, ddI-EC)
- Trizivir (AZT+ 3TC+ abacavir)
- Viread (tenofovir DF)

NNRTIs
- Sustiva (efavirenz)
- Viramune (nevirapine)
- Rescriptor (delavirdine)
- Intelence (etravine)

- Fosamprenavir (Lexiva)
- Kaletra (lopinavir/ritonovir)
- Viracept (nelfinavir)
- Norvir (ritonavir)
- Invirase, Fortovase (saquinavir)
- Lexiva (Fosamprenavir)
- Prezista (Darunavir)
- Reyataz (atazanavir)

Fusion Inhibitors
- T20 (Fuzeon, enfurvirtide)
- Seizentry (maraviroc)

Integrase Inhibitors
- Isentress (raltegravir, MK-0518)

Combination/Multi-class drugs
- Atripla (Sustiva +Viread+Emtriva)**

When To Start Medication?
Page 55-62

- Viral load
- CD4+ cell count
- General health/symptoms
  - Co-infection/Other illnesses
- Drug Interactions
- Drug Resistance

Readiness to Start

- Disclosure
- Dealing with HIV
- Understanding Anti-HIV therapy
- Belief in therapy
- Side effects
- Adherence

Federal Guidelines

- Issued by Department of Health and Human services.
- Guidelines to help doctors treat people with HIV in the U.S.
- Guidelines for adults, adolescents, children, pregnant women, treating opportunistic infections
- Topics include: goals of therapy,when to start treatment, monitoring, side effects, medications during pregnancy

What to start with?

- Varies from individual to individual
- Highly Active Antiretroviral Therapy (HAART)
  - ? At least 3 medications
  - ? From at least 2 classes
- Most impact on virus—undetectable viral load
- Keep in mind side effects and toxicities

How do I know if it's working?

- Viral Load
- CD4+ T-cell count
- General health and symptoms

Remember!
There is no cookbook answer....
Listen to your body

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 5 of 5 (cont.)

Viral Load

- Reduce HIV levels as low as possible
  - Undetectable
  - At least below 5,000 copies
  - Minimal change is 3-fold reduction
  - (Many physicians believe a 10 fold decrease is necessary)
- Trends are important
  - Consider at least two consecutive test
  - Is viral load going up? Unchanging? Going down?

CD4+ T-Cell Count

- Keep/Get CD4+ T-cell count above 200
- People with initially low CD4+ cell counts may take longer to see increases
- People with initially high CD4+ cell counts might not see dramatic increases

General Health and Symptoms

- How do you feel?
- Are your symptoms changing?
  - Getting better? Worse? Unchanged?
- Side effects

Medication Side Effects Page 61-70

- Not everyone will experience side effects
- **Short term**
  - First 3-6 weeks of starting
  - Nausea, headaches, diarrhea, menstrual irregularities
- **Long term**
  - Lipodystrophy
  - Peripheral neuropathy
- **Strategies to cope:** diet, rest, over the counter medication, change regimen, talk with your doctor

Time for change?

- Viral Load
  - Undetectable Detectable
  - Remains detectable 4-6 months after starting therapy
  - 3x or greater increase from lowest level
- Persistent decrease in CD4+ cell count
- Unable to tolerate side effects
- Symptoms of HIV
- Adherence

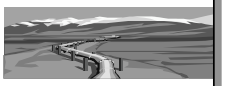
When is it time to change anti-HIV Therapy?

- Based on two viral load tests spaced about 2 weeks apart.
- Consider what other factors may be affecting viral load/and or CD4+ cell counts.
- Consider, if appropriate, the option to wait and get another CD4+ cell count, viral load test or resistance test before deciding.

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 5 of 5 (cont.)

The Pipeline
HIV Drugs in development



NRTI's
- Racivir (RCV)
- Amdoxovir (AMDX,DAPD)
- Apricitabine (SPD754, AVX754)
- Elvucitabine (ACH-126, 443, Beta-L-Fd4C)

NNRTI's
- Ripivirine (TMC-278)

Fusion/ Entry Inhibitors
- Vicriviroc (SCH-417690, SCH-D)
- PRO 140
- TNX-355

Integrase Inhibitors
- Elvitegravir (GS-9137)

Maturation Inhibitors
- Bevirimet (PA-457)

Cellular Inhibitors
- Droxia or Hydrea (hydroxyurea, HU)

Immune- based Therapies
- Immunitin (HE2000, alpha-ebibromide)
- Proleukin (aldesleukin, Interleukin-2, IL-2)
- Remune (HIV-1 Immunogen, Salk vaccine)
- BAY 50-4796
- IR103

Anti-HIV Treatment and Women

- Lower viral load levels at similar CD+ cell counts as men
- Higher levels of drug found in blood
  - ? Increased or varied side effects
    - More nausea, vomiting and malaise, more severe rash
    - Candidiasis, changes in menstrual cycle
- Protease inhibitors may increase or decrease levels of estrogen.

Other Resources

- UC San Francisco HIV Insite
  - ? www.hivinsite.ucsf.edu
- Project Inform
  - ? www.projectinform.org
- AIDS meds
  - ? www.Aidsmeds.org
- The Body
  - ? www.thebody.com
- The Well Project (for women)
  - ? www.Wellproject.org
- Department of Health and Human Services
  - ? www.aidsinfo.nih.gov

Scenario 1

You have a client who has just been told by her doctor that she will have to start taking HIV medications. She is very nervous and scared. She has heard lots of stories from other women in her support group and most of them are not good.

- ? What are 2 open ended questions that you can ask your client to get more information from her?
- ? What information or resources can you provide for her?

Scenario 2

You have a client who started HIV medications 2 months ago. She has been having very bad nausea and diarrhea. She wants to stop taking her meds and calls you crying one day.

- ? What are two affirming statements that you could give your client to encourage her to continue taking the medications?
- ? What information or resource can you give to your client in this situation?

Peer Advocate Role In Helping Clients with Treatment Regime

- Support client where she is at
- Information, education, and resources
- Share your experiences (good and bad) but remind them that they are YOUR experiences
- Serenity Prayer
- Do a trial run
- Go with her to the doctor
  - ?List of questions

HIV MEDICATIONS: SIDE EFFECTS, ADHERENCE, & GOALS OF MEDICATION

SESSION HANDOUT # 5 of 5 (cont.)

Empower yourself...

"You gain strength, courage and confidence by every experience in which you really stop to look fear in the face. You must do the thing you cannot do.."

Eleanor Roosevelt

ASK THE EXPERT: FIGHTING THE VIRUS ROLE PLAY*

ABOUT THIS ACTIVITY

Time: 35 minutes

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

- Understand the implication of medication non-adherence on the development of drug resistance.
- Understand how resistance may affect CD4 cell count, viral load and clinical symptoms of HIV.
- Understand the purpose of some HIV medications.

Training Methods: Large group Discussion, Role Play

In This Activity You Will…

- Facilitate a group discussion using the basic HIV review questions at the end of this section (15 minutes).
- Facilitate a role play on fighting the virus (20 minutes).

Materials:

- Handout – HIV Basic Information Review
- Five prepared cards (one for each role)
- Masking tape
- Five hats for each person playing a role (optional)
- Trainer Script – Fighting the Virus Role Play

Preparation:

- Print handouts
- Prepare cards (one role on each card)
- Review Trainer Script for role play activity

Instructions

1. Facilitate a group discussion using the *HIV Basic Information Review* handout. Facilitator should select a few questions and pose to the group one at a time.

2. Link to role play.

   Now that we've reviewed some basic HIV information, let's try some acting skills.

3. Before the role play begins, set up two chairs in front of the room.

4. Ask for five volunteers to act out parts in a skit.

5. Provide each volunteer with a hat (optional) and give each person a card with one of the following roles and ask them to tape their role on their front like a name tag:

- HIV
- CD4 Cell
- Viral Load
- Combination Therapy
- Drug Resistance

6. Ask volunteers to stand in front of the group near the chairs, and then explain the activity.

   In a moment, the volunteers will be acting out a role play while the rest of us provide cues. Each volunteer will be acting out HIV, a CD4 cell, viral load, combination therapy or drug resistance.

7. Begin the role play by reading the trainer script at the end of this module.

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

ASK THE EXPERT: FIGHTING THE VIRUS ROLE PLAY

▶ TRAINING TIP

This module requires careful facilitator preparation because of the complexity of the material and the importance of sequencing, particularly for the skit.

8. After role play has been performed, thank the actors for acting out the roles and the rest of the group for their participation. Ask everyone to sit down.

Summary

- Process the activity with the following questions:
  What were some of the main points covered in the skit?
  What questions do you still have about HIV?
- Wrap up session.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

ASK THE EXPERT: FIGHTING THE VIRUS ROLE PLAY

SESSION HANDOUT

HIV BASIC INFORMATION REVIEW

What is HIV?

HIV stands for Human Immunodeficiency Virus. It is the virus that causes AIDS, which stands for Acquired Immune Deficiency Syndrome.

What does HIV positive mean?

HIV positive means a person has been infected with HIV. A person is considered to be HIV positive when s/he has a positive HIV antibody test. There are two blood tests that are needed to confirm HIV infection. The first test is called an ELISA test. If the ELISA test is positive, the second test, called a Western Blot, is performed. A person is considered to be HIV positive when both the ELISA and the Western Blot are positive.

What are the symptoms of being HIV positive?

Sometimes HIV positive individuals have no symptoms at all. Most people who are HIV positive have some fatigue, and may have difficulty gaining weight. When a person is first infected with HIV they may experience flu-like symptoms such as rash, fever, night sweats, and diarrhea.

How do people get infected with HIV?

HIV is transmitted from one person to another through blood or body fluids. HIV is found in blood, semen, vaginal fluid, and breast milk. People usually get exposed to HIV by having sex without a condom with someone who is HIV positive. HIV is not spread through casual contact such as hugging, kissing, or eating and drinking after someone who is HIV positive. HIV can also be spread from one person to another by sharing needles for injecting drugs. Infants can get HIV from the mother before or during birth, or through breastfeeding.

Is there more than one kind of HIV?

There are two types, or strains, of HIV. HIV-1 and HIV-2. Most people in the U.S. are infected with HIV-1, the most common strain of the virus. HIV-2 is more common in parts of Africa. The strains are similar, and both can lead to AIDS.

HIV BASIC INFORMATION REVIEW (CONT.)

Is it okay for two HIV positive individuals to have sex without a condom, or share needles?

No. There are other serious diseases that can be spread through blood and body fluids, such as hepatitis. Also, HIV positive persons can spread resistant strains of the HIV virus by sharing blood or body fluids. A "resistant strain" of virus means that the virus has changed in a way that makes it resistant to certain HIV drugs, meaning the drugs won't work anymore.

What is AIDS?

AIDS stands for Acquired Immune Deficiency Syndrome. AIDS is caused by HIV—Human Immunodeficiency Virus. HIV infects and kills T cells, also called CD4 cells, which are white blood cells that are the cornerstone of the immune system. An HIV-infected person is considered to have AIDS when the total T cell count drops below 200, or when a person develops an HIV-related disease, called an opportunistic infection, such as PCP pneumonia.

Is there a cure for AIDS?

No. At this time there is no cure for HIV infection or AIDS. However, people with HIV infection can often lead normal lives by taking medications, called antiretrovirals, which kill the HIV and keep it from destroying T cells and leading to AIDS.

Do HIV medications work for everyone?

Unfortunately there are some people with HIV infection that do not get better with HIV medications (antiretrovirals). When a person does not get better with HIV medications, it usually means the virus has become resistant, and the medications are no longer effective. Resistance to HIV medications develops when there is not enough medication in the blood. That is why it is so important to always take the HIV medications as directed and not skip doses.

What are the side effects of HIV medications?

Most medications used to treat HIV have some side effects. Some people experience more side effects than others. Some common side effects include nausea or indigestion, diarrhea or loose stools, headache, fatigue, and muscle aches. Fever is not a common side effect of HIV medications, and may indicate a serious condition. A person with HIV or AIDS who develops a fever should contact their provider, especially if the T cell count is below 200.

HIV BASIC INFORMATION REVIEW (CONT.)

Does everybody with HIV infection have to take drugs?

Not everyone who is HIV positive has to take medications. Some people can live with HIV for many years without losing a significant number of T cells. These individuals are called "long term non-progressors." Other people with HIV infection may not have to take medication for many years after becoming HIV positive. The U.S. Department of Health and Human Services Guidelines for HIV Treatment (November 2008) recommend that antiretroviral medications should be offered to people:

- with a T-cell count under 350 or,
- with a history of AIDS or,
- who are pregnant.

What are universal precautions?

Health care workers who may be exposed to blood or body fluids practice what is called "universal precautions". This means that ALL blood and body fluids are considered to be potentially infected, no matter who the patient is. Health care workers practice universal precautions by always wearing latex gloves when handling blood or body fluids.

ASK THE EXPERT: FIGHTING THE VIRUS ROLE PLAY

SESSION TRAINER SCRIPT

FIGHTING THE VIRUS ROLE PLAY

Note to trainer: Script is in italics; roles are in bold and answers and instructions are in parentheses.

*The **CD4 Cell** count is below 500 and the **Viral Load** is high.* (Instruct the CD4 Cell to sit down and the Viral Load to remain standing.)

***HIV** is reproducing at a rapid rate.* (Instruct HIV to act as though it is reproducing at a rapid rate.) *How might a person with HIV feel at this point?*

*Who/what part could be asked to come help **HIV**, and why?* (Combination Therapy)

Note: Answers may include a type of monotherapy. Be prepared to discuss the potential benefits and risks of monotherapy vs. combination therapy. Stress that combination therapy leads to a higher and more sustained rise in CD4 count and a greater, more sustained decrease in viral load, decreased risk of resistance and decreased risk of clinical disease progression. Combination therapy has been shown to prolong survival in some patients. Patients at different stages of HIV infection may respond differently to antiretroviral therapy.

*What might happen to **HIV** after combination therapy is initiated?* (It starts to reproduce more slowly. Instruct HIV to move slowly or fall down.)

*What might happen to **Viral Load** after **Combination Therapy** is initiated?* (It goes down. Instruct Viral Load to sit down.

*What might happen to **CD4 Cell** after combination therapy is initiated?* (It goes up. Instruct CD4 Cell to stand up.

*What do you think a person with **HIV** might feel like on **Combination Therapy**.* (S/he could experience bad side effects; feel tired; feel better, etc.)

*Imagine that the person with **HIV** has stopped taking his/her medication as prescribed, either because of the medication side effects; because s/he feels good; or because s/he does not understand the need to continue therapy.* (Instruct Combination Therapy to come and go. Emphasize that it is important to talk about the potential risks of antiretroviral therapy, side effects of medications and drug interactions with the health care team. It is important to work with the health care team in managing any side effects.

SESSION TRAINER SCRIPT (cont.)

FIGHTING THE VIRUS ROLE PLAY (CONT.)

Stress that although one may feel well and have no symptoms, one needs to continue the therapy recommended by the health care team because HIV can still cause damage to the immune system during this time.)

What could happen as a result of not taking antiretroviral therapy as prescribed (HIV could become resistant to the drugs. Instruct Resistance to stand next to Combination Therapy. Other possible answers include no clinical or lab benefits.

*What might happen to **HIV** now?* (It begins to reproduce again. Instruct HIV to move rapidly again.)

*What might happen to **Viral Load** now?* (It goes up. Instruct Viral Load to stand up.)

*What might happen to **CD4 Cell** now?* (It goes down. Instruct CD4 Cell to sit down.)

*How might a person with HIV know that s/he has developed **Resistance**?* (S/he may feel sick, develop an OI or notice that the Viral Load goes up and the CD4 Cell count goes down.)

*How can **Resistance** be prevented?* (Take medications as prescribed. Treat HIV infection like a chronic infection that must always be treated, even though you may feel well. Discuss potential side effects and drug interactions with your treatment team.)

(Adapted from T.H.E. Course (Tools for Health Empowerment), produced by Glaxo Wellcome, now GlaxoSmithKline.

HIV CASE STUDIES*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- Feel empowered to provide HIV information to clients.

Training Method: Case Studies

In This Activity You Will…

- Divide the group into four smaller groups and assign each a case study (20 minutes).
- Facilitate report-outs by the groups for full group discussion (40 minutes).

Materials:

- Flipchart
- Markers
- Handouts - HIV Case Studies (4)

Preparation: None

Instructions

1. Divide the participants into 4 groups.
2. Assign each group a case study and have them answer the questions attached to the case study. Give the groups 20 minutes to work on this. Tell them they can use their handouts or other resources if they don't know the answers.
3. Have each group pick one person who will read the case study to the larger group.
4. Have each group pick one person who will write their responses on flipchart paper.
5. Have one person read their case study out loud to the group and report back the answers to their case study questions. Invite the other groups to ask questions or comment after each report.

Summary

Wrap up session by pointing out how much shared knowledge there is in the group, and that even if each person here didn't have all the answers, someone did. In the same way, in the real world, we don't have to have all the answers, but we do need to know where to go to get them.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

CASE STUDY: EDIE

Edie's CD4+ cells have been dropping and her viral load has been increasing. Her doctor let her know that she would have to start HIV medications. Edie was feeling apprehensive and nervous about the side effects, but she was willing to get started. Her doctor prescribed Atripla that she would take once a day at bedtime. After a week of being on medication, Edie had side effects like strange dreams, felling dizzy, depressed, and emotional.

She shared her medication experience at support group. She was upset and was crying, saying she would not keep taking these meds with these side effects. Participants talked with her, telling her that the side effects would last possibly one to two weeks more, but to hang in there.

Her CD4+ cells are now in the 450's and her viral load is less than 95. She was elated to share her results with the support group after her visit with her doctor.

Questions

1. What medications are in Atripla?
2. Which medication in Atripla may cause some of the symptoms that Edie is experiencing?
3. What class of medications is Atripla in?
4. There is one thing that makes Atripla different from all the other HIV medications. What is that?
5. What can you say or do to encourage or affirm Edie's decision to start medications?
6. What are two suggestions that you can give to Edie to deal with the side effects?

HIV CASE STUDIES

SESSION HANDOUT # 2 of 4

CASE STUDY: IVY

Ivy, a 39 year-old Caucasian woman who recently returned from Africa is 3 ½ months pregnant. She also has an 8-year-old son. She was diagnosed with HIV in February 2006. Ivy has no income, is living with friends, and has debt from when she left the United States. Ivy says she practiced safe sex and tested regularly; however, she had one incident where the condom broke.

Ivy's CD4+ is 1130 and she has an undetectable viral load. She feels there is no need for her to take medicine because her doctor cannot tell her if there will be any long lasting side effects to her unborn child. Ultimately, Ivy decides not to take meds during her pregnancy or AZT at the time of delivery.

Ivy's baby tested negative at birth. However, Ivy hasn't contacted you (her peer advocate) for seven months, so you don't know how or where Ivy is.

Questions

1. What steps can you (the peer advocate) take to find Ivy?
2. What can you tell Ivy about HIV medications and pregnancy?
3. Which HIV medication(s) should Ivy avoid?
4. At what age can doctors confirm a baby's HIV status?
5. What kinds of concerns may come up for you as the peer advocate? How can you deal with them?

HIV CASE STUDIES

SESSION HANDOUT # 3 of 4

CASE STUDY: LINDA

Linda has a triple diagnosis: HIV+, paranoid schizophrenia, and alcoholism. Linda was referred to you by her social worker. Linda has given you permission to accompany her to doctor visits and visits to her payee at a mental health clinic. Linda is not taking any medications for either HIV or her mental diagnosis. She refused to take them. Her social worker, doctor, and you have all notice her psychosis as she speaks and rambles.

She lives in a group home, and has become friends with John, who lives there also. She drinks a couple of half-pints of hard liquor every day.

She has started threatening John that if he doesn't have sex with her, she will accuse him of raping her.

You go to visit Linda one day. When you get there, she shows you her lab results. Her CD4+ count is 130 and her viral load is 500,000.

Questions

1. How can you support Linda?
2. What kind of support or resources can you get for yourself?
3. What HIV meds should Linda avoid and why?

CASE STUDY: MARIA

Maria is a 49-year-old Puerto Rican woman who was diagnosed HIV+ in 1999. She was later diagnosed with Hodgkin's Lymphoma, and is currently in remission. Over the past six to eight months she has been suffering from vomiting, intense and sometimes debilitating headaches, and diarrhea that keeps her home-bound from time to time. Maria's doctor has looked at everything that could be causing these symptoms, from environmental and physical to psychosocial. She is currently taking Sustiva and Combivir daily. Her T-cells continue to be between 700 and 800 and her viral load is undetectable.

Maria is concerned that her doctor cannot figure out why she is getting the headaches and diarrhea. She has recently become a part of the Consumer Group, but her headaches sometimes stop her from attending the meetings and being involved in her community as much as she wants to. Maria is very frustrated and has expressed interest in switching doctors. She is afraid that she might be dying. Maria has lost 1 brother and 2 sisters from HIV.

Questions

1. What are 3 things you can do to support Maria with her concern about her doctor? (List three options.)
2. What can you tell Maria about her fears of death?
3. What class of medications are Sustiva and Combivir?

HOW MEDICATIONS WORK ACTIVITY*

ABOUT THIS ACTIVITY

Time: 25 minutes

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

- Identify the 7 stages in the Viral Life Cycle (AFRI-TAB - Attachment, Fusion, Reverse Transcription, Integration, Transcription, Assembly, Budding);
- Identify the 5 different classes of HIV medications;
- Recognize HIV terminology used in HIV treatment;
- Understand why HIV medications are used in combination and why one must be adherent to meds for them to work.

Training Method: Individual Activity, Large Group Discussion

In This Activity You Will…

- Distribute and lead activity "How Medications Work" (10 minutes).
- Ask participants to share what medications they take and where they work to slow down replication (10 minutes).
- Summarize in a large group the importance of taking medications and the impact on viral replication (5 minutes).

(continued next page)

Instructions

Note: This session should come after a session on the Viral Life Cycle and HIV Medications.

Talking Points

Now that we've gone through the Viral Life Cycle, the 5 classes of medications and we've showed you where those medications work at slowing replication of the virus at all stages. Let's pull out the HIV drug medications chart and check off the medications that you currently take.

1. Give each participant two handouts; HIV Antiretroviral Agent – Drug Chart and the Medications at Work in the HIV Life Cycle. The HIV Antiretroviral Agent.

2. Participants (specifically participants on HIV medications) will be asked to look at the list and put a check beside the medications they are currently taking.

3. The participant will then identify the stage where their medications are working in the Viral Life Cycle (AFRI¬TAB).

4. 3-4 participants will be asked to volunteer to give the following information from the drug chart:

- Name of HIV medications they are taking;
- Identify which of the 5 classes the medications are in;
- Identify the stage where their medications are working.

5. Ask participants the following questions to facilitate discussion:

Discussion Questions

- What happens when one forgets to take medications?

- What happens if some medications are taken and not others?

* This module comes from the Missouri People to People Training Manual, 2008.

HOW MEDICATIONS WORK ACTIVITY

ABOUT THIS ACTIVITY (CONT.)

Materials:

- Handout – HIV Antiretroviral Agent Drug Chart
- Handout – Medications at Work in the HIV Life Cycle
- Handout – Side Effects and Possible Treatments

Preparation:

- Obtain drug chart from a pharmaceutical company or web resources such as acria.org or aidsmeds.com. Be sure to obtain most recently updated version of drug chart for every training session.
- Print handouts

- Are there certain levels of medications that must be maintained in the body?
- Since the fusion inhibitors block the door to the cell, why isn't this drug prescribed first?
- There are a number of medications now approved by the FDA, are there other meds on the way for people that have taken everything and nothing works – have no options?

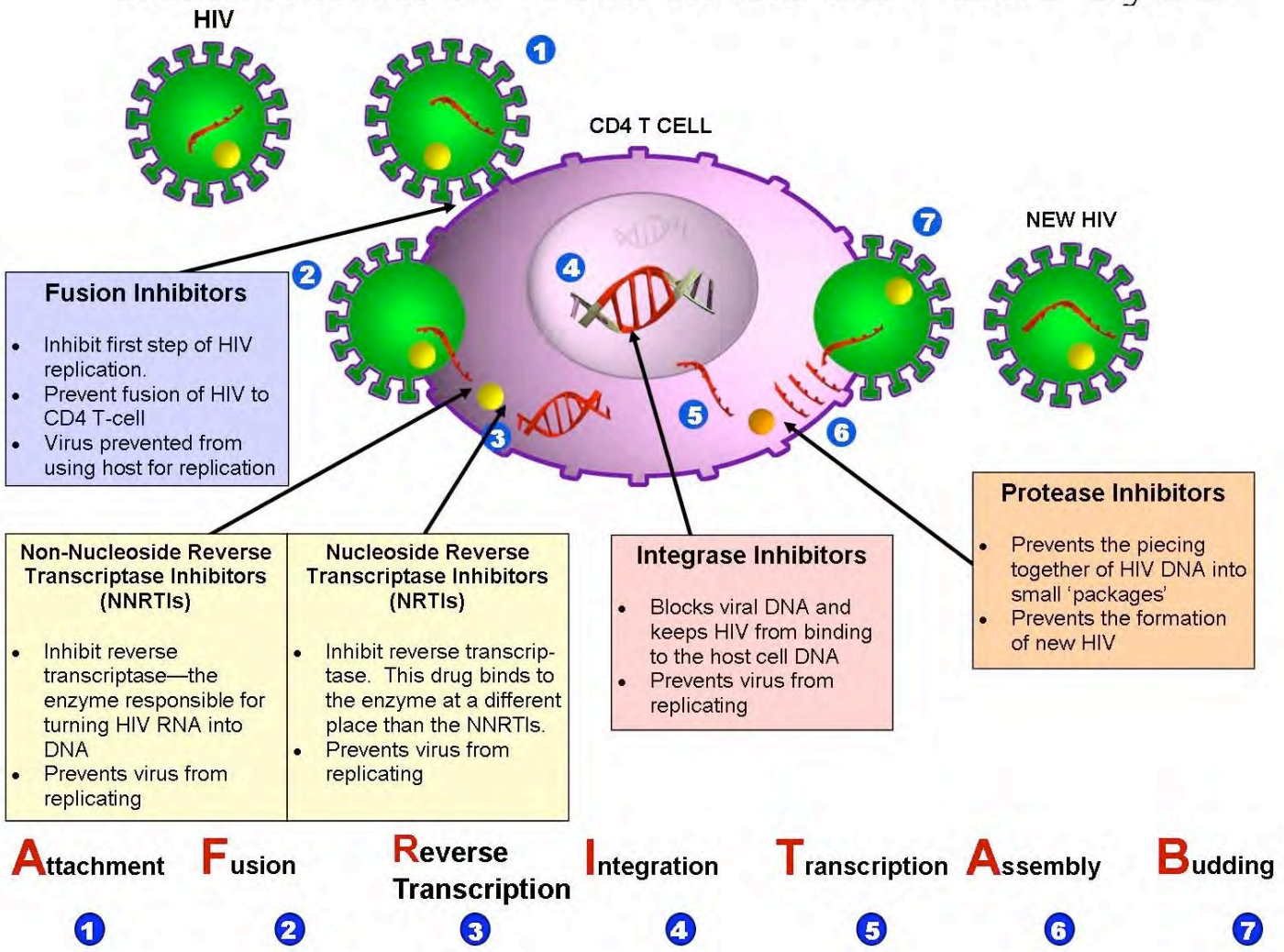
Summary

Now with this knowledge you have power to influence those that you work with to be adherent to their regime or if they are not on meds to explain the role of the different classes and how it is significant to treatment.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

SESSION HANDOUT # 1 of 2

Medications at Work in the HIV Life Cycle



HOW MEDICATIONS WORK ACTIVITY

SESSION HANDOUT # 2 of 2

Side Effect	Possible Treatments
Fat Redistribution-Lipodystrophy, Lipatrophy and Lipadiposity	Currently there are no treatments that have been proven effective for body-shape changes. Switching regimens might be an option. Serostim-reduces fat buildup not FDA approved for Lipodystrophy. Liposuction Sculptra-Injection of fat or fat substitutes
Fatigue, tiredness, weakness, lack of energy	Discuss with doctor, change in diet, rest and sleep.
Nausea, vomiting	Antiemetics-Compazine, Zofran Eat small meals, Eat bland foods (low in fat and high in starch/carbohydrates) Relax before meals, eat slowly
Loss of appetite due to nausea and vomiting	Antiemetics-Compazine, Zofran Megace to treat anorexia. Marinol to stimulate appetite Some people opt for marijuana
Diarrhea /watery stools	OTC-Imodium AD, Kaopectate, Metamucil, Lomotil These meds work best if taken 30-45 minutes before taking medications that cause diarrhea. Dietary change using the BRATT diet-Bananas, Rice (white), Apple juice or sauce and Toast and Tea (herbal) Drink water to combat dehydration.
Gas and bloating	Dietary changes by eliminating gas producing foods such as broccoli, beans, vegetable skins. OTC-Gas-X
Heartburn/acid reflux	Dietary changes-avoid foods that are spicy or fatty, vinegar, peppermint, pickles, alcohol, caffeine (soda, tea, coffee, chocolate), citrus fruits and juices (orange, grapefruit, lemon, tomato) Avoid aspiring, ibuprofen that irritate the stomach OTC-Mylanta, Maalox, Tagamet, Zantac, Pepcid
Liver damage	Discuss with doctor-possibly change in ARVs Decrease alcohol consumption
Kidney stones	Possible change in medications, Increase in water intake,
Fungal Infections	Anti-fungal such as Monistat, prescription-Diflucan
Skin rashes/Stevens-Johnson Syndrome	Consult with doctor, antihistamines-Benadryl Good skin moisturizer if dry skin
Peripheral Neuropathy	Consult with doctor-change in ARVs Anti-inflammatory meds-Ibuprofen Applying topical creams-Ben Gay Prescribed Medications-Neurontin
Muscle decrease or weakness, muscle pain or joint pain	Anti-inflammatory drugs-Tylenol
Anemia	Procrit and Epogen. Doctor may want to change medications

STUMP THE PEER*

ABOUT THIS ACTIVITY

Time: 40 minutes

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

- Formulate 3 review questions relating to care and treatment, HAART, side effects.
- Answer at least 3 review questions relating to care and treatment, HAART, side effects.

Training Method: Game

In This Activity You Will…

- Ask the participants to prepare 3-5 questions that will stump the other team. (20 minutes)
- Ask the teams to take turns asking and responding to the questions that have been designed. (20 minutes)

Materials:

- Note paper
- Pens/pencils
- Prizes for both teams (15 nice and 15 smaller prizes)

Preparation: None

Instructions

Note: This exercise should be done after you have covered HIV care and treatment, HAART and side effects of medications. However, this exercise can be used for any topic.

1. Divide participants into two teams.

2. Instruct the teams to take 20 minutes to prepare 5 questions about HIV care and treatment, HAART and side effects of medications.

3. Once questions are prepared, have the teams take turns posing a question to the other team. If the team answers the question correctly, that team receives one point. If the team does not answer the question correctly, the team asking the question gets one point. After 20 minutes of play, the team with the most points is the winner. The session facilitators serve as referees and fact-checkers.

Summary

Wrap up session.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Comprehensive Peer Worker Training, Peer Advanced Competency Training (PACT) Project Harlem Hospital Center, Division of Infectious Diseases, 2008.

ADHERENCE VERSION 1*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- List factors that may be barriers for people to do what is good for them.
- Brainstorm ways to help peers address those barriers and solve adherence problems.
- Follow a peer-centered approach for discovering what motivates another person to change.

Training Methods: Small Group Activity, Large Group Discussion

In This Activity You Will…

- Facilitate a group discussion on what adherence is and why it is difficult (20 minutes)
- Conduct a small group activity on creative strategies to overcome barriers to adherence (20 minutes)
- Share creative strategies with the larger group (20 minutes)

Materials:

- Flip chart
- Markers
- Masking tape
- Colored paper clips for breaking people into groups (5 paper clips in four different colors—20 total)

Preparation: None

Instructions

1. Ask the group why it is important to have access to an HIV care provider.

   We have discussed being a partner with our provider. Why is it important to have access to an HIV care provider?

2. Allow for responses. Responses may include:

- Folk medicine is not always safe; we need to make sure that it does good and does not cause harm.
- Health care is expensive; care through an HIV care provider may in the long run be cheaper.
- The community cannot pay for emergency room care for too many of its citizens.
- HIV providers may also be linked to other services that the clients might need.
- A single HIV provider better provides continuity of care. Although wellness is the ideal, we all get sick. Only doctors and specialists can treat illness.

3. Begin the discussion on adherence.

   What does adherence mean to you?

4. Allow for responses and record on flip chart.

   Adherence can mean doing your best to be faithful to a plan or agreement set by you and your HIV provider to take your medicine as prescribed, keep and make appointments, eat right, exercise and do what is necessary to feel your best.

   Basically adherence means sticking to whatever you and your provider decide for you to have the best health possible. It is just like this tape that is sticking or adhering to this piece of paper/wall. That is what adherence can mean.

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

ADHERENCE VERSION 1

▶ TRAINING TIP

Things to stress:

- Remember that the number one reason for lack of adherence is depression.

5. Ask the group why it is important to continue treatment and adhere to the medication schedule that your provider has prescribed.

   Why is it important to continue treatment and adhere to the medication schedule that your provider has prescribed?

6. Allow for responses.

   Many people know that it is important to go to the doctor and to take prescribed medication but there are many things that make it difficult.

   Some possible answers suggested by the pilot group include:

- Medications keep us healthy.
- It's important not to miss doses of medications because we can build up drug resistance.
- It's important to avoid drug resistance because then the medications won't work.
- It will keep us from losing services. It's hard to get these services, so we don't want to lose them.
- It will keep the doctors and other health care providers from yelling at us or being mad at us.
- It will help us to avoid side effects or help tolerate side effects.
- It helps us to know the difference between "normal" side effects and life threatening ones.
- It helps you feel better about yourself by meeting your goals and being responsible and accountable to yourself.
- It helps you live longer and have better quality of life.

7. Ask the group to brainstorm some of the things that make adherence difficult.

   Based on HIV research, we know that there are some factors that do not influence adherence. These include: patient demographics such as race, gender, history of substance abuse, socioeconomic status, educational level, culture or ethnicity and marital status.

   What are some of the things that make adherence difficult?

Allow for responses and record on the flip chart. Record one "barrier" per page.

Some possible answers include:

- Being uninsured;
- Not knowing where to go;
- Having had bad experiences in the past;
- Not being ready;
- Having/fearing negative side effects/Bad taste of medications;
- Having to change activities to take pills;
- Not making it a habit;
- Being homeless or lacking resources;
- Feeling healthy and not wanting to take medications until sick;
- Being sick with other diseases;
- Finding it hard to get medications/costs;
- Dealing with complex drug regimens;
- Having disclosure issues;
- Feeling tired of taking medications;
- Having mental illness/active drug use;
- Traveling;
- Believing drugs won't work or body won't tolerate;
- Wanting to avoid chemicals in your body (thinking that medicines are poison chemicals);
- Lacking social support.

8. Explain that we are now going to explore creative approaches to overcoming barriers.

   We are now going to think of creative ways to overcome these barriers.

9. Divide the large group into 4 small working groups by passing out different colored paper clips. Co-trainer can count these soon after session has begun.

   We are going to get into groups and discuss ways to overcome some of these barriers.

   Please take a colored paper clip and all the people with the same color will form a group.

10. Give each small group a piece of flip chart paper with a barrier from the brainstorm session. Ask each group to think about what clients can do to overcome these barriers. Encourage the group to "think outside the box" and to be creative. Give the groups 15 minutes to come up with some creative and specific solutions for their barriers.

    On this paper provided, you will have a barrier listed. You will have 15 minutes to discuss your barrier. Please think of creative ways to overcome this barrier. You need to be specific in your solutions to the barrier.
    Think of places you may suggest they go, things that could make adherence easier.

11. Ask that each group assign a recorder to write the group's responses on a piece of flip chart paper and a reporter to share the small group's work with the larger group.

    You will need to have someone serve as a recorder for the group, and someone who will share it with the larger group when time is called. You have five minutes to complete this.

12. Circulate among the groups to make sure they understand the instructions and are on task. At the end of 10 minutes, give them a 5-minute warning.

13. Call the large group back together and ask each group, one by one, to report out on their barriers and solutions. Ask that subsequent groups not repeat strategies that have already been mentioned by another group.

    Okay, time is up. Let's get started with our ways to overcome barriers to adherence. Try not to repeat anything that another group has stated.

    Some examples of suggestions from the pilot group include the following:

Examples of Flip Chart Barriers

Suggestions for Helping Clients Seek Service

BARRIER – Client is not ready.

- Find out why s/he's not ready.
- Respect client's decision to postpone seeking wellness care.
- Provide acceptable options for clients in need of attention.
- Depending on her/his reasons, share other people's examples of how they have overcome these fears or beliefs.
- Make a referral in case s/he needs professional help.

BARRIER – Negative side effects.

- Let the doctor know. If it is a case of nausea, there are medications available that may be helpful. As a peer educator, you can say, "there are medications out there that can help. Why don't we ask the doctor what some might be."
- Provide advice (nutrition advice, alternative therapies, suggest relaxation, teas (herbs,), suggest diet changes, cut down work hours).
- Always consult with a health care provider if these side effects are severe.
- Go to the hospital if symptoms persist or are incapacitating.

BARRIER - Mental illness/active drug use.

- Let the client know the risks of taking drugs with medications (interactions, hard to remember when high).
- Refer client for the treatment of substance abuse.
- Avoid chemicals; explain to the client that all medications, foods, and drinks have chemicals that may interact or cause problems with judgment or memory.
- Increase your social support; state role of peer educator is to provide support.
- Seek out support groups and counseling services for referrals.
- Let the client know that he is not alone, that there are resources available (self –help and support groups): find buddies (mentors in AA, NA).

BARRIER – Lack of Motivation

- Constantly monitor the clients' progress and reward it.
- Give them examples of positive effects of taking medications.
- Remind them to remember their loved ones.
- Remind client that medications reduce the chance of getting infections.

Summary

During the report out, ask clarifying questions that encourage participants to think very specifically about ways to address barriers.

Wrap up with key points:

- Taking your medications regularly and as prescribed by your doctor will keep your viral load down and avoid drug resistance.
- Adherence is important for your own health and the health of others.
- Adherence is a challenging process and we should understand how hard it is.

Thank everyone for their creative and good thinking.

Thank you for your creativity and good thinking. You may be able to use these strategies as a peer educator.

Some responses adapted from US Mexico Border Health Association *Promoteres* Training Program, September 1999.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

ADHERENCE VERSION 2*

ABOUT THIS ACTIVITY

Time: 45 minutes

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

- Define what adherence means.
- Identify common reasons for adherence challenges.
- Identify and describe common side effects.
- Walk away with strategies for managing side effects.

Training Methods: Lecture, Brainstorm

In This Activity You Will…

- Share definitions with group (25 minutes).
- Provide different adherence tools that are used (10 minutes).
- Lead a group discussion to summarize (10 minutes).

Materials:

- PowerPoint slides – Adherence
- Projector with screen or blank white wall
- Laptop

Preparation: None

Instructions

1. Follow the PowerPoint presentation on adherence.
2. Use slide notes as a reference during presentation:

Talking Points (PowerPoint Slides)

Slide 2: What is adherence?

- Adherence refers to how closely you follow a prescribed treatment regimen.
- Partnership between the patient and doctor/provider.
- It is a skill to be learned.
- Client must be able to do the following to be adherent to their therapy:

Understand the regimen
The Who, What, When, Where, Why? of treatment
Believe they can adhere
Remember to take medications
Integrate medications into current lifestyle
Problem-solve changes in schedule and routines

Slide 3: Why is adherence so important?

- Adherence affects how well anti-HIV or Anti-Retroviral (ARVs) medications decrease viral load and increase CD4 cells.
- Skipping medications allows for replication of the virus
- Prevents drug resistance: development of HIV strains that are resistant to the medications you are taking now and potential drugs you maybe prescribed in the future.

* This module comes from the Missouri People to People Training Manual, 2008

ADHERENCE VERSION 2

Slide 4: Factors affecting adherence

Follow the flow of the diagrahm explaining several factors that affect adherence.

Slide 5: Probes for assessing adherence

- What is the reason you are taking this drug?
- How do you take this medication?
- Are you taking this medication with food?
- Where did you receive information about this medication?
- What do you use to help you remember to take your medication?
- What do you do when you miss a dose?
- What problems have you encountered while taking this medication?

Slide 6: Client factors affecting adherence

- Knowledge of treatment regimen
- "Fits" with lifestyle
- Stage of disease, level of wellness
- Support system
- Belief in HAART effectiveness (Note: HAART stands for highly active antiretroviral therapy)
- Fear
- Ability to control side effects
- Mental health
- Substance abuse
- Stigma
- Believing the drugs were ineffective
- Denial of HIV status

Slide 7: Environmental factors that affect adherence

- Transportation
- Housing
- Food
- Drug treatment
- Mental health service
- Social network
- Child care
- Addressing cultural norms

Slide 8: Non-adherence can take many forms

- Not having prescription filled
- Taking an incorrect dose
- Taking medication at wrong time
- Missing doses
- Stopping therapy too soon
- Taking OTC medications that interfere with prescribed medication (Note: OTC stands for over-the-counter)

Slide 9: What tools can peers use to support adherence with clients?

- Self-monitoring (pill boxes, tracking booklets)
- Pharmacy automatically refills medications
- Location of pill boxes
- Create individual adherence plan
- Develop problem-solving skills
- Habit building/cueing (integrating adherence into daily routines)
- Reinforcement (accountability coach, reviewing lab values)
- Incentives (better health, staying in relationships, connecting to values)
- Electronic reminders (Cadex watches, pagers, cell phones)
- Research on the medication options and a lengthy discussion with your doctor
- Reduced pill burden
- Scheduling medications based on dietary requirements, such as taking them at snack times or when your stomach is empty

ADHERENCE VERSION 2

TRAINING TIP

Things to stress:

- There is no gold standard or consensus on the best interventions to promote adherence to PLWHA
- Resources for Peer Educators and Clients include the following:

  Informed and skilled providers

  Continuous client education

  Continuous support

  Multidisciplinary team approach to health care

- Scheduling particular dates monthly on the calendar to request refills of medications
- Planning ahead if you are going to be out of town to ensure you have sufficient medications

3. Ask questions provided and facilitate group discussion.

Discussion Questions:

- What are some of the common side effects you have experienced?
- What strategies have you used that have not been mentioned during this presentation?

Summary

- As you can see, there are common side effects that patients experience with the medications.
- Not everyone will experience the same side effects and to the degree that another person will
- It is important to have open communication with your provider as you decide treatment options
- Become knowledgeable about the possible medications you will be prescribed and the side effects; that way, you will know what symptoms to track.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

ADHERENCE VERSION 2

SESSION HANDOUT # 1 of 1

Adherence

Adherence

What is Adherence?

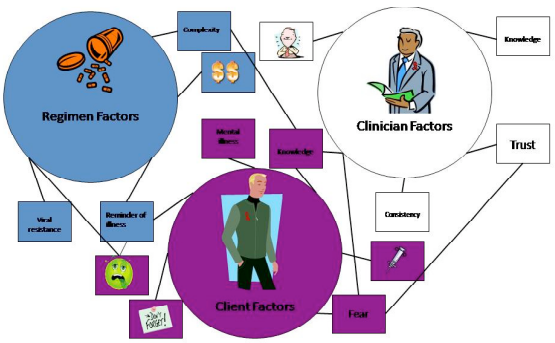
- How closely you follow a prescribed treatment regimen
- Partnership between patient and provider
- It is a skill to be learned
- Client must be able to do the following to be adherent to their therapy:
  - Understand the regimen
    - The Who, What, When, Where, Why? of treatment
  - Believe they can adhere
  - Remember to take medications
  - Integrate medications into current lifestyle
  - Problem-solve changes in schedule and routines

Adherence

Why is adherence so important?

- Affects how well ARVs decrease VL and increase CD4
- Missing meds allows for replication of the virus
- Prevents drug resistance

Factors Affecting Adherence



Adherence

Probes for Assessing Adherence

- What is the reason you are taking this drug?
- How do you take this medication?
- Are you taking this medication with food?
- Where did you receive information about this medication?
- What do you use to help you remember to take your medication?
- What do you do when you miss a dose?
- What problems have you encountered while taking this medication?

Adherence

Client Factors Affecting Adherence

- Knowledge of treatment regimen
- "Fits" with lifestyle
- Stage of disease, level of wellness
- Support system
- Belief in HAART effectiveness
- Fear
- Ability to control side effects
- Mental health
- Substance abuse
- Stigma
- Believing that the drugs are ineffective
- Denial of HIV status

ADHERENCE VERSION 2

SESSION HANDOUT # 1 of 1 (cont.)

Adherence

Environmental Factors That Effect Adherence

- Transportation
- Housing
- Food
- Drug treatment
- Mental health service
- Social network
- Child care
- Addressing cultural norms

Adherence

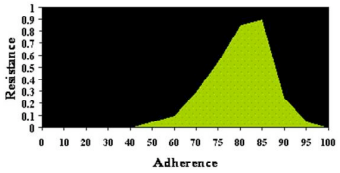
- **Non-adherence Can Take Many Forms**
  - Not having prescription filled
  - Taking an incorrect dose
  - Taking medication at wrong time
  - Missing doses
  - Stopping therapy too soon
  - Taking OTC medications that interfere with prescribed medication

Adherence

What tools can peers use to support adherence with clients?

- Self-monitoring (pill boxes, tracking booklets)
- Location of pill boxes
- Create individual adherence plan
- Develop problem-solving skills
- Habit building/cueing (integrating adherence into daily routines)
- Reinforcement (accountability coach, reviewing lab values)
- Incentives (better health, staying in relationships, connecting to values)
- Electronic reminders (Cadex watches, pagers, cell phones)
- Pharmacy can automatically refill medications
- Research on the medication options and a lengthy discussion with your doctor
- Reduced pill burden
- Scheduling medications based on dietary requirements, such as taking them at snack times or when your stomach is empty
- Scheduling particular dates monthly on the calendar to request refills of medications
- Planning ahead if you are going to be out of town to ensure you have sufficient medications
- There is no "gold standard" or consensus on the best interventions to promote adherence to PLWHA

What Is The Relationship Between Adherence & Resistance?



Adherence Activity

ADHERENCE STRATEGIES*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- Understand common side effects of the different Anti-HIV drug classes.
- Offer clients options to manage drug side effects.

Training Methods: Small Group Brainstorm, Large Group Discussion

In This Activity You Will…

- Assign participants to 3 groups, give instructions and pass out activity sheets (15 minutes).
- Lead a group discussion about responses to addressing adherence vignettes (10 minutes).
- Lead a group discussion to summarize (5 minutes).

Materials:

- Newsprint
- Markers
- Masking tape
- Handout – Adherence Matters Activity Sheet

Preparation:

- Print handout

Instructions

1. Introduce the activity by explaining that the participants will be assigned to small groups to brainstorm ways a patient on ARVs can manage side effects.

2. Assign participants to 3 groups. Assign a space in the room for each group. Ask participants to go to their assigned group in the respective space. Assign 1 scenario to each group.

3. Give each group a sheet of newsprint and markers. Instruct each group to appoint a recorder and a reporter.

4. Instruct each group to brainstorm answers to scenarios and write their answers on the newsprint. Tell the group they will have about 5 minutes to do this activity.

5. Bring the entire group back together and ask each reporter to go over his or her group's work.

6. Ask open-ended questions to draw out their thoughts on how a peer might be of service to a person living with HIV.

7. Discuss any other brainstorming answers to all the questions.

Summary

- Ask participants if they now understand some common side effects of ARVs, how to problem solve ways to manage the effects to achieve greater than 90% adherence to medications.
- Explain to participants that strategies to manage side effects will be different with different patients based on their daily routines, ability to manage side effects and patient's past experiences with ARVs.
- Inform participants that managing side effects is possible if there is an open working relationship between provider and patient, knowledge about drugs and side effects is understood and there is a plan to manage the side effects.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from the Missouri People to People Training Manual, 2008.

ADHERENCE STRATEGIES

SESSION HANDOUT # 1 of 1

ADHERENCE MATTERS ACTIVITY SHEET

Scenario A

Joe is a 32-year old who started medications 3 weeks ago. The Peer Educator gives Joe a call to see how he has adjusted to his medications. Joe tells the Peer Educator that he was prescribed Sustiva and Truvada. He reports that he is taking his medications faithfully. The peer educator asks Joe if he has been experiencing any side effects since starting the medications. Joe reports that he had mild dizziness and vivid dreams.

Scenario B

Carmen is a 36-year old who has been prescribed Viramune, Zerit and Epivir. Carmen states that she had only missed 1 dose of medications since starting them 6 weeks ago. Carmen reports that she had been experiencing some tingling in her feet and her boyfriend thinks that her face is thinning. She is not sure what she should do.

Scenario C

Michael is a 25-year old male who has been prescribed Kaletra and Combivir. Michael is having mild diarrhea. During the conversation, Michael tells the peer educator that he has been smoking marijuana about once a week and that he has the habit under control-"it's to help me chill out after I get home from work".

Please answer the following questions in your assigned group. Please refer to the resources you have.

1. What questions would the Peer Educator ask?

2. What strategies would the Peer Educator suggest?

3. What is the outcome?

SIMULATED ADHERENCE TREATMENT EXERCISE*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- Define the importance of adhering to an HIV treatment plan;
- Review barriers to being adherent;
- Experience the challenges of another person's HIV treatment plan.

Training Methods: Lecture, Brainstorm, Small Group Activity

In This Activity You Will…

- Explain the role of a peer educator in helping peers to adhere to medications (15 minutes)
- Break into small groups to conduct a pill box activity and report back on the experience (30 minutes)
- Debrief the activity (15 minutes)

Materials:

- Flip chart with adherence-related terms
- Flip chart with adherence issues
- Markers
- Sets of colored chips (five different colors)
- Medication cards (ComboCards may be ordered from www.combocards.com.)
- Pens
- Pill boxes
- Skittles® or M & Ms®

Preparation: Prepare flip chart.

Instructions

1. Explain that one of the roles of a peer educator is to help peers become more adherent to their treatment plans (Steps 1 & 2: 15 minutes).

- We now know that taking your HIV medications properly and taking every dose is crucial to keep your medications working properly and to avoid resistance to medications. One of your roles as a peer educator is to meet with people who are having trouble with adherence. Let's start by reviewing some terms from the skit in the previous exercise.

2. Show flip chart with the following terms and define as a group. **[Note: Ask group to define each term, one at a time, then add missing information from the list below.]**

- **Adherence:** Adherence can mean doing your best to be faithful to a plan or agreement set by you and your HIV provider to take your medicine as prescribed, keep and make appointments, eat right, exercise and do what is necessary to feel your best. Basically adherence means sticking to whatever you and your provider decide to do for you to have the best health possible.

- **Viral Load:** The term "viral load" refers to how much of the virus is present in your bloodstream. There are tests like the PCR that measure the amount of new HIV released into the bloodstream.

- **Undetectable:** The best viral load test result is "undetectable." This doesn't mean there is no virus in your blood; it just means that there is not enough for the test to find and count.

- **Resistance:** This term refers to HIV's sensitivity to a particular drug. Resistance is thought to result when the virus mutates or changes. In HIV, such mutations can change the structure of viral enzymes and proteins so that an antiviral drug can no longer bind with them as well as it used to, and as a result, the drug may not work for you any longer.

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

SIMULATED ADHERENCE TREATMENT EXERCISE

3. Explain the next activity (Steps 3 - 6: 10 Minutes).

- *It's human nature to "know better than we do." In other words, we often know the right thing to do in a situation, but we choose an option that is not in our best interest. Based on the idea that we know better than we do, let's think about our motivations—what are some reasons we don't always make good decisions about keeping medical appointments, taking our medicine, practicing safer sex and using substances?* [Allow a few responses.]

- *We're going to do an activity now where we'll ask you to put your own adherence experiences aside and explore how someone else might feel. In a moment, we'll get into groups where we'll be filling pill boxes for a simulated HIV treatment plan.*

4. Distribute colored chips and ask participants to form groups according to their colors. There should be five groups of three.

5. Provide instructions. Facilitators should be available to help each group as they get started.

- *Each group will need to load their boxes for the week. The note taker should record the adherence issues:*

  How many times a day;
  The number of pills;
  Full or empty stomach;
  Water issues;
  Side effects.

  [Note: Provide adherence issues on a flip chart for reference.]

6. Give each group a pill box and a treatment card and ask them to identify a recorder.

7. Give groups 10 minutes to load their pill boxes and discuss the issues they noted. After 10 minutes, call them back and have each group present their medication. Each group should have two minutes to present.

8. Process by asking the following questions (15 minutes).

- *What are some messages from this exercise?*
- *What is the big picture?*

Summary

Thanks for your hard work. We are assuming that, by attending this training, you are serious about your drug regimen, and that you are as adherent as possible. If you have issues with the medications you have been prescribed by your doctor, you are either taking them, or you feel comfortable advocating for yourself to your health care provider. If you are taking a drug holiday without communicating with your provider, please talk to one of the staff here at this meeting. We will help you find a way to talk to your provider.

Although peer educators are not doctors, you can be active listeners and appreciate the issues involving adherence that each client has. You can also offer to help to communicate with providers regarding issues relating to their clients adherence.

SIMULATED ADHERENCE TREATMENT EXERCISE

▶ TRAINING TIP

Things to stress:

Through these different exercises, each person can see how difficult it is to load pill boxes. You have to think through:

- Whether the medications need to be taken with food or without
- Whether the medications need to be taken more than once a day
- Whether there are likely to be difficult side effects such as nausea, headaches and diarrhea.

As peer educators, it is important to validate the difficulty of being adherent, while also being a cheerleader and advocate.

Wrap up with key points:

- Taking medications regularly and as prescribed by your doctor will keep viral load down and prevent drug resistance;
- Adherence is important for your health and the health of others;
- Adherence is a challenging process and it is important to understand these challenges.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

ADHERENCE TOOLS*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- List 4 common adherence tools and how they are used.

Training Methods: Brainstorms, Large Group Discussion

In This Activity You Will…

- Demonstrate and discuss various adherence tools (30 minutes)

Materials:

- Flip chart and easel
- Markers
- Eraser
- Samples of adherence tools such as pill box, Cadex Watch, calendar, pager, individual pill pack, key chain, cell phone as timing device, etc.

Preparation: Make sure you have samples of adherence tools.

Instructions

1. Introduce session.
2. Ask participants to brainstorm adherence tools that they and their clients have used.
3. Discuss the usefulness of each.

Summary

Wrap up session

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from the Comprehensive Peer Worker Training, Peer Advanced Competency Training (PACT) Project Harlem Hospital Center, Division of Infectious Diseases, 2008.

ADHERENCE CASE STUDIES*

ABOUT THIS ACTIVITY

Time: 45 minutes

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

- Discuss the importance of adherence to HIV treatment regimens and the risks of non-adherence.
- Identify 3 common barriers to treatment adherence.
- Plan solutions to counteract barriers to adherence.

Training Methods: Case Studies, Large Group Discussion

In This Activity You Will…

- Distribute case studies to be read and discussed by groups. (5 minutes)
- Ask groups to read and discuss each case study. (15 minutes)
- Lead a group discussion on the points raised in each case study focusing on the role of the peer. (25 minutes)

Materials:

- Handout - Adherence Case Studies
- Trainers Guide - Key Points for Processing Case Studies

Preparation: Print handouts

Instructions

1. Break participants into four small groups.
2. Give out Adherence Case Studies to all participants and assign each case study to 2 groups.

   Give groups 10 minutes to analyze and discuss their case studies. Remind participants to consider the question "What is your role as the peer?"

3. Instruct groups to think of ways to:

- Acknowledge how difficult adherence can be;
- Encourage the client for the steps he or she has made toward adherence, and;
- Strategize with the client on how to improve adherence to treatment.

4. When time is up, read case study aloud so both groups hear it.
5. In large group, discuss each case study. Give both groups a chance to explain their responses to the case study.
6. Repeat for second case study.

Summary

Wrap up session.

Source: AIDS Education and Training Center, Coping with Hope: HIV Treatment Decisions/Adherence, A Multi-Disciplinary Mental Health Services Curriculum, 2000

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SESSION HANDOUT # 1 of 2

CASE STUDIES

Case Study #1 – Tammy

You are the peer worker assigned to help this client with adherence issues.Tammy is a 42-year-old woman living in a large urban city. Eight months ago Tammy discovered that her husband Dante tested positive for HIV; soon after, Tammy also tested positive. Being diagnosed HIV-positive and following a HAART regimen have been challenging when caring for herself, Dante and her children. Her four children are from a previous marriage. Dante has to visit the emergency room frequently due to opportunistic infections.

Tammy has experienced many side effects associated with her HAART regimen. The side effects she finds most difficult to tolerate are the itching and nausea. Because of all the added stress, Tammy had to quit her job. Although Tammy doesn't live far from the clinic where she receives care, her compliance with clinic appointments has been suffering because of Dante's jealous fits. Dante accuses Tammy of cheating on him; often making it difficult for her to leave the house to attend her clinic appointments. Because of all the chaos at home, Tammy sometimes forgets to take her HIV medications.

Her most frequent missed dose of medication is usually in the morning when preparing the kids for school and caring for her husband. The pressure of keeping her HIV status a secret from her mother, sister, and children is becoming a heavy burden. There are times when she feels alone in this world; she has no one to turn to for support. She no longer attends support groups because of Dante's jealousy; however, she prays often and attends church services as a form of support in dealing with her illness.

How would you address Tammy's concerns and work with her on adherence issues?

CASE STUDIES (CONT.)

Case Study #2 – Jesse

Jesse is a 22 year-old man who tested positive for HIV two years ago. His suspicions are that he's been HIV positive since his adolescence. You are the peer worker assigned to help Jesse with adherence issues. You have been seeing him for the past nine months. During the sessions, he has shared his concerns about his increasing alcohol/drug use and depression. Over the past month, Jesse has frequently mentioned his fear of failing his HAART regimen. The thought of having to switch medications because of failing his current regimen has caused Jesse to feel depressed; he has been on the current regimen for one year. The combination of fear of failing his HIV treatment in addition to disappointing his doctor has caused Jesse's depression to worsen.

Over the past nine months, Jesse has also been concerned with his body image. Although he works out in the gym regularly with weights, he's never satisfied with his physique. He has noticed changes in body fat buildup throughout his body, loss of fat in the face area, and his limbs have thinned. Jesse has also expressed concern about the effects of long-term treatment. Jesse recently read an article in a HIV/AIDS magazine that heart disease is another side effect of long-term treatment.

Besides his cousin, Jesse does not have anyone else he can talk to about his HIV status. But he rarely shares with cousin his sex life involving men he meets at parks or in clubs. He admits to his peer worker that he often finds extra pills in his bottles at the end of the month. Jesse feels healthy, but his doctor has told him that his CD4 count (T-cells) are dropping and his viral load is increasing.

How would you address Jesse's concerns and work with him on adherence issues?

KEY POINTS FOR PROCESSING CASE STUDIES

Key Points for Case Study #1 (Tammy)

- Assess Tammy's beliefs about HIV, treatment, and the impact that missing doses may have on her health.
- Congratulate Tammy for her many strengths and for how well she is handling her situation, including taking care of Dante, her four children, and herself.
- Acknowledge and validate the ways in which she gets support – through prayer, for example.
- Help Tammy to develop strategies that she thinks will improve adherence. Help Tammy to think about ways she can incorporate taking her medicines into her daily routine. For example, getting up 15 minutes earlier to take some time for herself and to take her medication; putting the medication and water and/or food on her bedside table every night after the kids are in bed so that it is the first thing she sees in the morning. Let her brainstorm and see what other solutions might work for her.

Key Points for Case Study #2 (Jesse)

- Assess how Jesse is currently coping with his treatment plan and ask what his biggest concerns are (drug use, treatment plan, depression) and goals. Review treatment plan and discuss goals. Discuss barriers to treatment.
    - If drug use is a concern of his, offer referrals for substance abuse treatment programs
    - Offer Jesse referrals for mental health services for his depression
- Assess how Jesse might develop more support for himself (he has a supportive cousin he lives with, but others do not know about his HIV status).
- Help Jesse identify the barriers to a frank discussion with his doctor (e.g., wanting to be the "perfect patient") and help him develop the skills and strategies to be more open with his doctor.
- Help Jesse strategize about ways to account for missed doses, like using a pill box, which will help identify when missed doses are occurring, or find out if the pharmacy is providing "extra" pills in the prescription. Offer adherence tools to improve adherence. Demonstrate how to use tools effectively for optimum benefits.
- Think about what exactly your role as a peer is: giving information, rather than offering advice helps Jesse make choices he can "own" and is more likely to follow through on.

PLAY IT SAFE PART 1: INTIMACY AND HIV*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- Discuss the differences between sexual intercourse (exchanging body fluids) and other ways to have sexual pleasure.
- Practice touching sex equipment in order to become familiar with how it may be used, how it can malfunction, and to describe the pleasure it can provide.
- Discuss sexually satisfying alternatives to sexual intercourse.
- Practice discussing sex and intimacy with others.
- Recognize that abstinence does not mean abstaining from sexual pleasure.

Training Methods: Small Group Activity and Discussion, Large Group Discussion

In This Activity You Will…

- Explain the activity and break into groups (10 minutes).
- Facilitate group discussion during the activity (10 minutes).
- Facilitate discussion about the results of the activity (10 minutes).

(continued next page)

Instructions

1. This session will allow participants to discover how to use all of their senses to relate more intimately with themselves and others. Introduce the activity.

- *We know that having sex is a part of life. It is healthy and needed. While we know having sex and being intimate are important, it is equally important to be as safe as possible.*

- *Reducing risky sexual behaviors is an important step in protecting and being loyal to yourself and your partner. Just as important is the need for pleasure and sensuality. This exercise is designed to increase your awareness of satisfying and safer sexual activities.*

- *We also need to be aware that sex and intimacy mean different things to people. We should not be judgmental about things we do not do or know about.*

- *We also know that, for some people, abstinence--not having or refraining from penetrative sex--is their choice. But abstinence from sexual intercourse does not mean that you cannot be intimate or loving with a partner.*

2. Have participants form 4 separate groups by having them pick from presorted playing cards. Have them form 4 groups based on the suit of the card they draw (clubs, diamonds, spades and hearts). Make sure to have the same number of cards as participants and an equal number of each suit. Provide each group with a "sensuality sack" for each group to examine.

- *We are going to discuss sexual pleasure, intimacy and safer sex. This would include ways to use our five senses. What are your five senses? (allow responses) The five senses are sight, smell, touch, sound, and taste.*

- *Too often "safer sex" is only connected with giving up or interrupting sexual pleasure. For many, "safer sex" means sacrificing desire and romance.*

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

PLAY IT SAFE PART 1: INTIMACY AND HIV

ABOUT THIS ACTIVITY (CONT.)

Materials:

- Flip chart with five senses
- Sensuality Sacks—contents may include:

  Sight: candles, erotic videos, magazines, photos, posters, tattoos, fingernail/toe nail polishes, body paints, scarves, high heels, massage/sex books, note cards, paper, pictures, mirrors, sex toys, edible underwear, uniforms, and colored condoms.

  Smell: candles, perfume, colognes, flowers, bath oil, incense, food, scented oils, work clothes.

  Touch: velvet, silk and satin materials, feathers, massage oils, bubble baths, love lotions, dental dams, condoms, spray bottles, dildos, latex gloves, sponges, loofah, towels, hair brushes, hands, belts, straps, whips, ice, and hair (wigs).

  Sound: music, love poems to be read, whispering, drums, breathing, moaning, fountain, relaxation tapes, and dirty talking.

  Taste: chocolates, honey, whipped cream, sour candy, mints, flavored massage oil, flavored condoms, and candy.

- Playing cards to divide people into four groups

Preparation:

- Prepare flip chart
- Prepare Sensuality Sacks

3. Have participants pick a sack and look inside at the contents. Contents may be placed on the table so everyone in the group can view them. During this exercise, it is important to be aware of any negative feelings that may occur with using or seeing some of the items. Observe group interactions carefully. The teams should choose 2 of the items to explore and explain to the group.

- *Look at the items in your sack. These items may be used to enhance intimacy and sensuality with a partner. This is a fun exercise that will allow you to be creative.*

- *As a team, discuss how the items can be used to enhance sexual pleasure and intimacy. Be sure to think about safer sex. After your team discussion, each group will share 2 of the items and explain what and how we could use the 2 items in their sack. You will have 10 minutes in your team before we come back together as a large group.*

4. Move around the room and engage groups in discussion or listen to their discussion about the items.

- *Remember, while this discussion may be personally uncomfortable to you, as a peer educator you need to be prepared to hear about and be asked about many different kinds of intimacy and sex, and you need to work towards being non-judgmental and understanding.*

- *The items may be used in many ways to enhance sexual pleasure and intimacy. Be sure to be creative in your descriptions, and think of being safe as well. Remember that people have sex in different ways.*

- *There are women who have sex with men; men who have sex with men; women who have sex with women; you can masturbate; or you can masturbate with someone else. There are many ways to have sex and be intimate with someone else.*

- *Think about how someone can use these items safely. Think about the types of penetrative sex: oral, anal, and vaginal, as well as masturbation and other non-penetrative ways to give and receive sexual pleasure. How can these items be used in place of penetrative sex, to enhance intimacy and to be used safely?*

- *You are going to have to be REALLY creative in your thinking, and think beyond what you like, and think of what other people may enjoy as well.*

5. Allow 10 minutes for the groups to examine and discuss the contents of the sensuality sacks. Then call them back together. Ask for one group to volunteer to be first.

- *I need you to pick someone from your group who will tell us about the 2 items you chose. I will go first and describe the many uses of this candle for sexual pleasure and intimacy.*

- *This candle can have many purposes in my mind. You can light it for romantic lighting. If it is scented, you can use it to enhance your sense of smell. You can also blow it out and allow the warm wax to be poured on your body or someone else's.*

- *As far as safety, I would say not to pour extremely hot wax on your skin, because you do not want a severe burn. Other than that, a warm candle is a great item to enhance intimacy. The candle should not be used as a penetrating object (anal, vaginal). Now, we will need one team to go first in sharing what was in the "sack of sensuality". Who would like to go first?*

6. Trainers should be sure to discuss safety with oils, condoms, and sharing of sex toys. Oils can damage and weaken the latex in condoms, diaphragms and dental dams. Condoms, if not used correctly, can break or tear. Sex toys, if shared, can also transmit other infections such as trichomonas. They should be washed with warm, soapy water.

- *When using oils, condoms and sex toys, it is important to know that oils can damage and weaken the latex in condoms, diaphragms and dental dams; if you do not use condoms correctly they can break or tear, and you should never share sex toys without first cleaning them before and after each use because they can transmit other bacteria/ viruses such as trichomonas or hepatitis.*

- *Thank you for sharing your creativity. Now we can discuss more issues about safer sex, pleasure and intimacy and how to use items that may prevent transmission of diseases.*

Activity adapted from T.H.E Course Tools for Health and Empowerment Curriculum by Glaxo Welcome, 1997.

Summary

Wrap up with key points:

- People living with HIV/AIDS, like all people, want information and skills in talking with sex partners about intimacy and sex;
- There are many ways to have sex safely, and there are alternatives to having penetrative sexual intercourse that are both pleasurable and satisfying;
- Sex means different things to different people and everyone should respect the choices others make regarding sex/intimacy. Anal, vaginal and oral penetrative sex are ways in which HIV is transmitted;
- It is okay to talk about abstinence but be sure you understand what your peer really means by that. There are many ways to be intimate without penetration.
- Sex is a healthy part of life and abstinence is a valid choice and does not mean avoiding intimacy and sexual pleasure.

* This module is part of the online toolkit *Building Blocks to Peer Success*. For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS*

ABOUT THIS ACTIVITY

Time: 30 minutes

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

- Practice touching safer sex equipment in order to become familiar with how it is used, how it can malfunction, and to describe what it is and what it does.
- Overcome reluctance to talk about safer sex and safer drug use.
- Brainstorm strategies to encourage partners and others to use risk reduction equipment.
- Help others understand barriers to using these materials.
- Discuss ways that condoms and dental dams can be part of foreplay, rather than a barrier to satisfying sex.

Training Methods: Small Group Activity, Demonstration and Discussion

In This Activity You Will…

- Introduce the concept of the 4 stations and break the group into 4 smaller groups (10 minutes).
- Demonstrate the use of items at each station four times (20 minutes).

(continued next page)

Instructions

1. During this exercise it is important to be aware of any negative feelings that may occur with using or seeing some of the items. Be sure to continue to observe and respect the participants' rights to try out the various items. Before beginning this session, set up four demonstration stations, one each for the male condom, female condom, dental dam, and safe injection equipment.

2. Stations should have been prepared earlier — the male condom station with penis models, dildos, condoms, and lubricant. Equip the female condom station with pelvic models, female condoms, and lubricant. Equip the dental dam station with dental dams, original household wrap, female pelvic model, and lubricant. Equip the safe injection station with syringes and bleach kits. Assign a member of the training team to each station. Place handouts with instructions for correct use of each type of barrier/ equipment at each station.

- As you've just demonstrated, there are many pleasurable ways to have safer intimacy. Now we're going to talk about specific ways to make sexual intercourse and injection drug use safer.

- Please take a look at your ABCs of Safer Sex handout.

A- Abstinence. Not having sex at all or using masturbation to meet sexual needs.
B-Being Monogamous. Having only one lifetime partner.
C-Condoms and other barrier methods such as dental dams.
S- Safer sex. Non-penetrative safer sex practices that you and your partner are willing to engage in.

- In order for us to have a conversation about safer sex it is important to know what we are talking about. This also means knowing what items are available and how to use these items.

- Some of these methods may be difficult to use for some people, or may not be realistic for others. The important thing is to know what the methods are and to find one that is most suitable for you.

* This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

ABOUT THIS ACTIVITY (CONT.)

Materials:

- Four stations
- Flip chart/ markers
- Pelvic/Penis models
- Female and various male condoms, Dental dams, Bleach kits
- Lubricants, Dildos, wipes/paper towels, trash bag
- Method for dividing people into four groups
- Handout – The ABC's of Safe Sex
- Handout – How to Use a Condom
- Handout – Condoms – Do's and Don'ts
- Handout – How to Use a Female Condom
- Handout – How to Use a Dental Damn
- Handout – Cleaning Needles and Works

Preparation:

- Set up four stations in room
- Print handouts

Then you will be able to discuss these with your peers when you are trying to help. Try thinking of these methods in creative ways.

- For this activity we are going to discuss condoms, dental dams, and cleaning works.

- STD/HIV sexual prevention methods are called "barrier methods" because you use an object that you put between you and your partner in order to prevent the exchange of body fluids or skin-to-skin contact. This includes using condoms, dental dams, etc…

- These methods are very effective when people use them correctly. The major problem is that some people have never learned how to use them the correct way. The best way to learn how to use them properly is to practice.

- I think we sometimes view condoms and dental dams or other barrier methods as punishment or to prevent pregnancy, spreading disease etc. If we need to change the way we think about these items and think of them as enhancing sexual pleasure and fun by making them a regular part of foreplay, then we and others may be more likely to use them.

- We are all going to take turns talking through or demonstrating the proper use of safe sex items. You will go to each station to view demonstrations on the male condom, female condom, dental dams and cleaning syringes.

- We are going to split you into four groups. Each group starts at a different station. If you choose not to go to a station, you do not have to, but please do not distract the other participants.

  Station One: Male Condom
  Station Two: Female Condom
  Station Three: Dental Dam
  Station Four: Cleaning Syringes

- After your group has been at your station for about 6 minutes, we'll call time and you can move to the next station.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

TRAINING TIP

Things to watch for:

- Watch for anxiety levels because many are uncomfortable with needles. Some have a strong fear of needles, and for former injecting drug users needles may be a "trigger."

At Station 1:

- Demonstrate how to use each condom following the proper steps. During the demonstration, trainers will discuss what each item is made of, proper storage of condoms, how to tear the condom package, application of lubrication, etc…
- Before you use a condom what do you want to check for? (expiration date, tears, etc…)
- Discuss latex allergy and use of polyurethane condoms such as Avanti® by Durex. After demonstrating, have participants practice putting condoms and lubrication on penis model. Have various condoms available to discuss which condoms are best for oral, vaginal and anal sex. Think of ways condom use can add to pleasure.

At Station 2:

- Demonstrate how to use a female condom following proper steps. Using the female model demonstrate use of Reality and discuss proper female condom and penis insertion into the vagina. Have participants practice inserting the female condom into the model. Discuss how and when to use lubricant. Distribute diagrams and instructions (in manuals).
- Discuss new World Health Organization suggestions about reuse of female condoms (1-12 parts bleach then gentle wash - 4 uses ok [because of the expense]).
- Discuss importance of knowing where someone can get female condoms.

At Station 3:

- Demonstrate how to use both dental dams and household plastic wrap to cover a female partner's genital area by applying the dam to the female pelvic model. Discuss how and when to use lubricant, how to avoid suffocation risks. Distribute diagrams and instructions (in their manuals).

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

- Dental Dams and household plastic wrap can also cover the anal area for rimming. While this may be surprise to some, it won't be to others. Cover all the areas/openings.

- How can the use of a dental dam add to sexual pleasure?

A. Smell, when you use flavored dental dams
B. Friction with lubrication can add to sexual pleasure

At Station 4:

- Policies and laws about needles vary from state to state. It is important to know the current laws where each training is held.
  This station should include handouts about ways to obtain sterile needles such as needle exchange programs, pharmacies, etc.

- We know that HIV and hepatitis can be spread through blood. It is important to know that sharing and reusing needles and works is risky. This is especially important with hepatitis C because many are infected within the first year of needle use.

- There are other uses for needles besides injecting drugs. For example, tattooing and injecting steroids to "bulk up." Some Latinos believe medicine is most effective when injected.

- Any reuse of needles, cookers, cotton, or other paraphernalia. is a risk. The best choice is to use new sterile syringes and works each and every time. Disinfection does not sterilize, but it is a back up plan to reduce and/or inactivate some portion of HIV and hepatitis B & C. Laboratory studies have shown that disinfection works against hepatitis B and scientists think it can also inactivate hepatitis C.* (*Dr. T. Steve Jones, MD, Centers for Disease Control and Prevention)

- Drug injectors use syringes, cotton, cookers, and water. These are known as "works." EVERYTHING that comes in contact with blood can be contaminated.

"Shooting the Works" Demonstration

- Have 5 clear cups marked "arm," "drug," "first rinse," "bleach," and "rinse."

- Fill the "arm" cup with water with red food coloring; fill the others with clear water. Add a piece of cotton to the "drug" cup.

- Draw the "drug" up into the syringe through the cotton.

- Put syringe in "arm" cup. Say, "People draw some blood into the syringe to make sure they have hit a vein and because it is part of the ritual."

- Push the "drug" out into the "arm cup" (Note: This is particularly difficult for some former IDUs.)

- Say, "The needle looks clean, but is it?" Draw up some clear water into the syringe and show it is colored red.

- Demonstrate needle-cleaning practices with each of the cups.

- Say, "It is important to also clean the cooker by soaking it in full strength bleach, to use new cotton, and to keep the tourniquet clean."

- Encourage participants to use syringes (without needles) to practice these techniques.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

TRAINING TIP

Things to stress:

- Discuss with participants discomfort that many feel with needles. Some have extreme discomfort, an aversion, to needles and will want to move away. Some recovering needles users who describe themselves as "addicted" to needles need to address this in recovery. This may be particularly important with medications that need to be injected.

Cleaning instructions:

- Flush the syringe three times with fresh, clean water to clear most of the blood away. This step is especially important for hepatitis B because of the relatively large levels.
- Fill the syringe with full strength bleach. Shake for 2 minutes to get the bleach into all the spaces and give it time to work.
- Squirt the bleach out of the syringe through the needle.
- Repeat steps 2 and 3 two more times.
- Rinse the "bleached" syringe and needle well with clean water. Draw the water up through the needle into the syringe and push out.
- Repeat step 5 two more times.
- Review the three steps: Step one gets the red out; step two gets the virus out; and step three gets the bleach out.
- Soak cooker in full strength bleach and rinse well.
- Do not reuse cotton.
- Keep tourniquets clean.

3. Be sure to call "time" every six minutes until each group has visited each station. Trainers should be sure to discuss all known ways to use the items such as female condom for anal sex, gloves for digital play, cut condom or glove and household plastic wrap for oral contact, etc. The discussion should be inclusive of all sexual activity options.

4. Trainers should be sure to ask the following questions to each group:

- What makes it hard to use these items?
- What can go wrong with using these items?

5. Allow for responses, and remind participants that safer sex doesn't just involve buying and using condoms or barriers, but also includes communication with partners.

- Buying and using barriers is important. However, safer sex also involves communicating with partners. We all need to be able to communicate with our partners as well as others. It can be very difficult to talk about sex, our feelings and our bodies. Practice and the approach to these methods are keys to successful communication.

- You'll find some prevention information handouts in your notebooks.

Summary

Wrap up session with key points:

- If a person living with HIV/AIDS has unprotected sex with a partner who is also HIV-infected, he/she can exchange different strains of the virus, which can make them both sicker.

- Safer sex practices protect against other sexually transmitted diseases. STDs can cause additional stress on an HIV-positive person's immune system.

- Safer sex practices, such as condom use, can be fun and exciting.

- Cleaning your works is important to reduce the transmission of HIV and Hepatitis B and C.

* This module is part of the online toolkit Building Blocks to Peer Success. For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from Duke University, Partners in Caring; Center for Creative Education, 2006.

SESSION HANDOUT # 1 of 6

The ABC's of SAFE sex

Abstinence. Not having sex at all *or masturbation to meet sexual needs*.

Be Monogamous. Have only one lifetime partner.

Condoms and other barrier methods such as dental dams.

Safer sex. Non-penetrative safer sex practices that you and your partner are willing to engage in.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

SESSION HANDOUT # 2 of 6

HOW TO USE A CONDOM

1. Open package at one corner, being careful not to tear into the condom... sharp fingernails or rough handling can damage the latex. Be sure package and condom appear to be in good condition. Check the expiration date if it has one.

2. Squeeze the tip of the condom. This is to eliminate air bubbles as you unroll it onto an erect penis. Leaving the tip empty helps reduce the chance of breakage and allows room for the ejaculation fluid (cum).

3. Unroll the condom fully, to base of penis, if possible. The proper fit is important and there are a lot of different styles available. There ARE different sizes of condoms available. You may apply a water-based lubricant if needed.

4. After intercourse, withdraw while the penis is still erect, and hold onto the base of the condom to prevent contents from spilling.

SESSION HANDOUT # 3 of 6

CONDOMS - DO'S AND DON'TS

Do's:

- DO use only latex or polyurethane (plastic) condoms.
- DO keep condoms in a cool, dry place.
- DO put the condom on an erect (hard) penis before there is any contact with a partner's genitals.
- DO use plenty of water-based lubricant (like KY Jelly® or Astroglide®) with latex condoms. This reduces friction and helps prevent the condom from tearing.
- DO squeeze the air out of the tip of the condom when rolling it over the erect penis. This allows room for the semen (cum).
- DO hold the condom in place at the base of the penis before withdrawing (pulling out) after sex.
- DO throw the condom away after it's been used.

Don'ts:

- DON'T use out of date condoms. Check the expiration date carefully. Old condoms can be dry, brittle or weakened and can break more easily.
- DON'T unroll the condom before putting it on the erect penis.
- DON'T leave condoms in hot places—like your wallet or in your car.
- DON'T use oil-based products, like baby or cooking oils, hand lotion or petroleum jelly (like Vaseline®) as lubricants with latex condoms. The oil quickly weakens latex and can cause condoms to break.
- DON'T use your fingernails or teeth when opening a condom wrapper. It's very easy to tear the condom inside. If you do tear a condom while opening the wrapper, throw that condom away and get a new one.
- DON'T reuse a condom. Always use a new condom for each kind of sex you have.

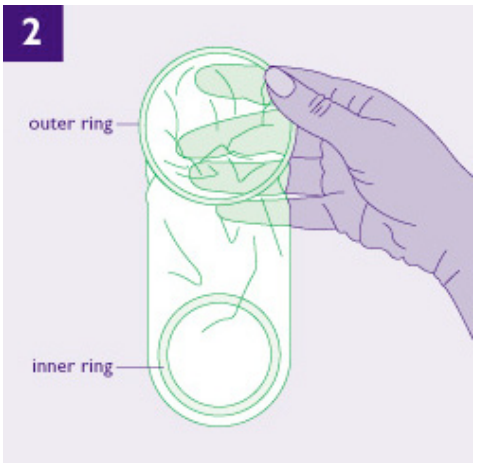
More information

If you have additional questions about the right way to use a condom, call CDC Health Information Line at 800-CDC-INFO (232-4636) 24 hours/7 days per week.

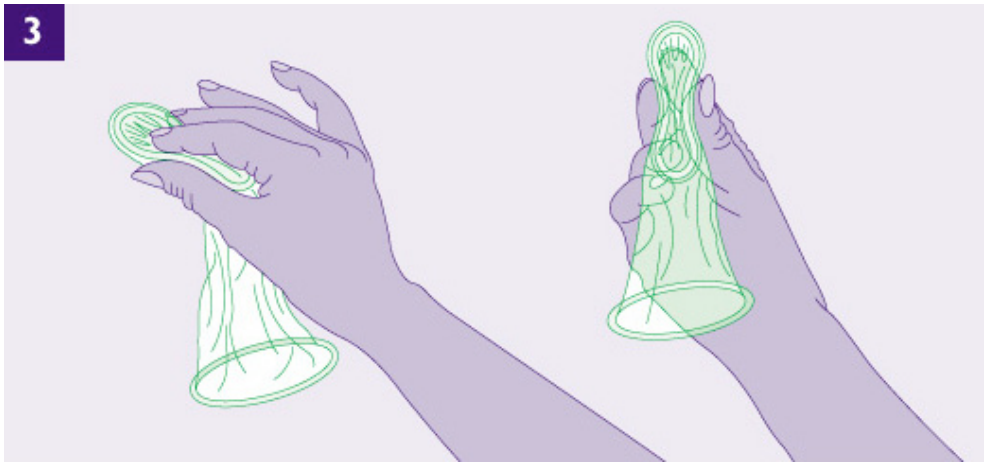
SESSION HANDOUT # 4 of 6

HOW TO USE A FEMALE CONDOM

Open the package carefully; tear at the notch on the top right of the package. Do not use scissors or a knife to open.



The outer ring covers the area around the opening of the vagina. The inner ring is used for insertion and to help hold the sheath in place during intercourse.

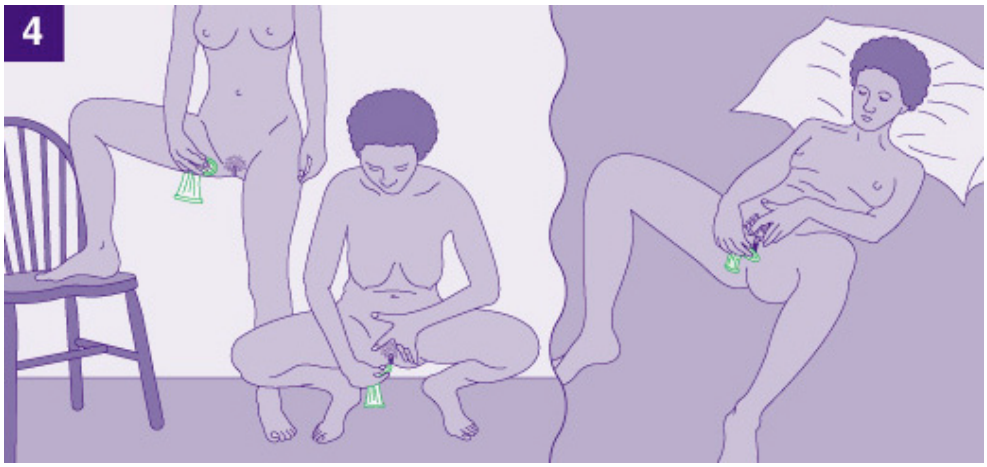


While holding the sheath at the closed end, grasp the flexible inner ring and squeeze it with the thumb and second or middle finger so it becomes long and narrow.

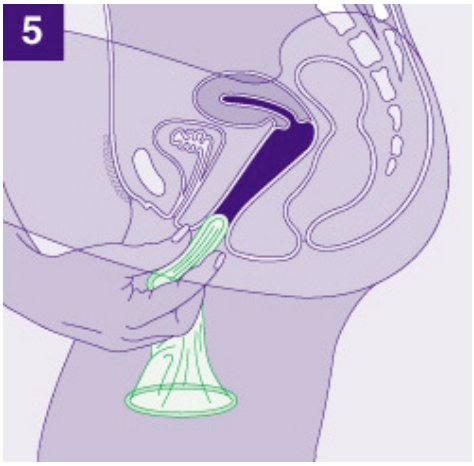
*Factss and pictures provided by the Female health company http://www.femalehealth.com/.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

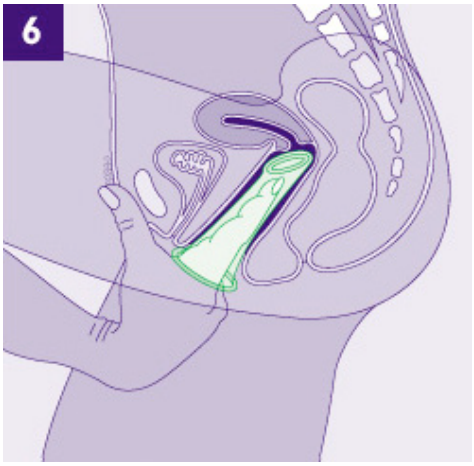
SESSION HANDOUT # 4 of 6 (cont.)



Choose a position that is comfortable for insertion – squat, raise one leg, sit or lie down.



Gently insert the inner ring into the vagina. Feel the inner ring go up and move into place.

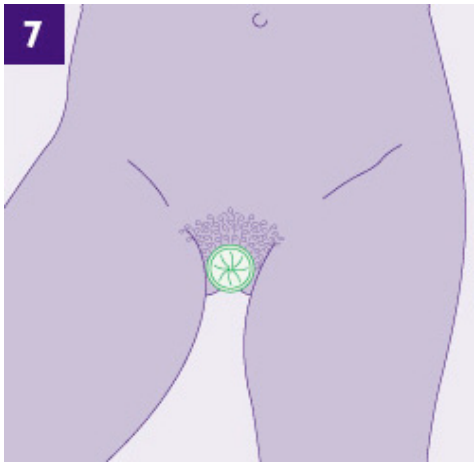


Place, the index finger on the inside of the condom, and push the inner ring up as far as it will go. Be sure the sheath is not twisted. The outer ring should remain on the outside of the vagina.

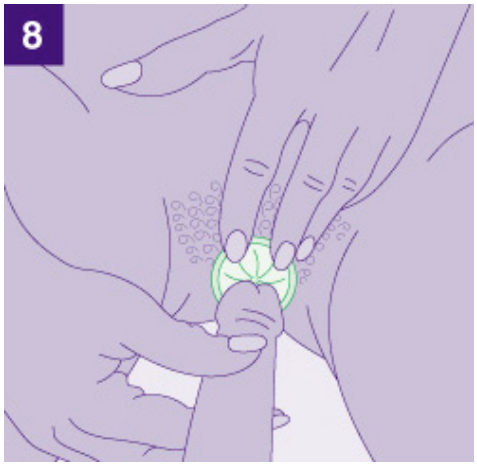
*Factss and pictures provided by the Female health company http://www.femalehealth.com/.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

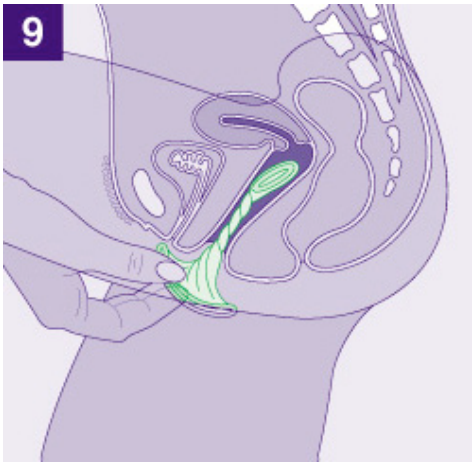
SESSION HANDOUT # 4 of 6 (cont.)



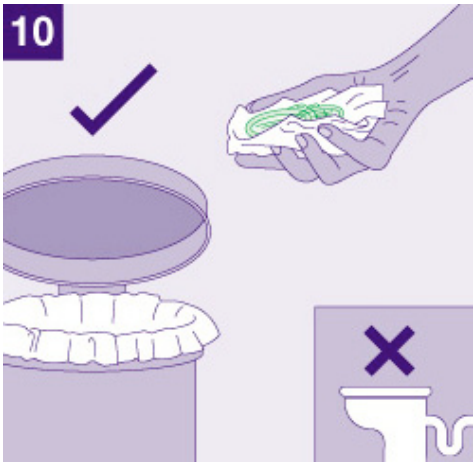
The female condom is now in place and ready for use with your partner.



When you are ready, gently guide your partner's penis into the sheath's opening with your hand to make sure that it enters properly – be sure that the penis is not entering on the side, between the sheath and the vaginal wall.



To remove the condom, twist the outer ring and gently pull the condom out.



Wrap the condom in the package or in tissue, and throw it in the garbage. Do not put it into the toilet.

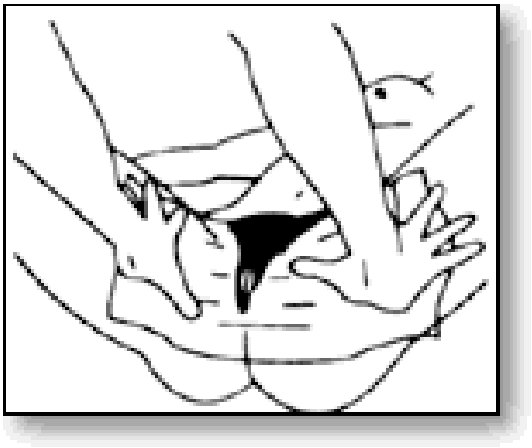
*Facts and pictures provided by the Female health company http://www.femalehealth.com/.

PLAY IT SAFE PART 2: PREVENTION EXERCISES AND DEMONSTRATIONS

SESSION HANDOUT # 5 of 6

HOW TO USE A DENTAL DAM

1. Like condoms, dental dams should be handled with equal care. Check that the dental dam does not have holes in it.
2. Rinse off the talc with water as it may cause irritation. Talc is usually applied during the manufacturing process.
3. You may use some water-based lubricant on the vagina or anus to increase the stimulation for the receiver. Do not use oil-based products such as lotion or baby oil. Oil can weaken the latex.
4. Holding the latex barrier firmly with both hands, spread the barrier over the vagina or anus.
5. One method is for the partner who is performing the oral sex to hold the dam while the recipient just enjoys the sensation. Another method is for the receiver to hold on to the dam so that the performer can stretch his imagination.
6. Be sure to keep one side toward you and one side toward your partner. Don't forget which side is which.
7. Never use the same latex barrier more than once. When finished, throw the barrier away.



Hints for Using Dental Dams

- Do not use dams for vaginal or anal intercourse, only for oral/vaginal or oral/anal sex.
- You can use a condom as a dam by cutting the tip off then slitting it open the long way.
- You can also use a latex glove as a dam by cutting all the fingers off (leave the thumb) and cutting down the side opposite the thumb.
- You can also use household plastic wrap as a dental dam by tearing a piece as large as you like and placing it over the vagina or anus.

CLEANING NEEDLES AND WORKS

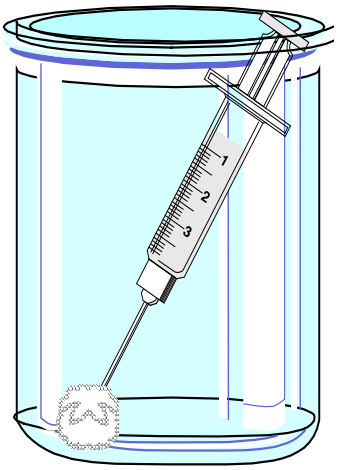
It is best to use sterile needles and works every time. Do not share works, including cotton, cookers, etc.

STEP 1: Flush with Water – Do this 3 times.

Flush the syringe 3 times with fresh, clean water. This is especially important for Hepatitis B, because of the large levels of virus.

STEP 2: Use 100% Chlorine Bleach - Do this 3 times

- Fill syringe to the top with clean, 100% chlorine bleach.
- Shake the syringe with bleach in for 2 minutes to get bleach in all the spaces and give it time to work.
- Squirt out.
- Repeat two more times using fresh bleach.



STEP 3: Rinse with Water – Do this 3 times.

- Fill syringe to the top with clean water.
- Shake the syringe and squirt out.
- Repeat two more times

STEP 4: Works

- Soak cooker in full strength bleach and rinse well.
- Do not reuse cotton or cooking water.
- Keep tourniquets clean

"LET'S TALK ABOUT SEX" ICEBREAKER*

ABOUT THIS ACTIVITY

Time: 15 - 20 minutes

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

- Start thinking about bodies, sex and relationships and how to create awareness and respect around each.

Training Methods: Lecture, Brainstorm, Small Group Activity

In This Activity You Will…

- Lead a pairs activity (10 minutes)
- Process and debrief (5-10 minutes)

Materials:

- Easel
- Marker
- CD player and CD of song: Let's Talk About Sex

Preparation:

- Write each word on its own newsprint and post around the room:

Vagina	Penis
Clitoris	Breasts
Sexuality	Lips
Tongue	Orgasm
Woman	Vaginal sex
Anal sex	Oral sex
Virgin	Abstinence
Gay	Lesbian
Transgender	Bisexual
Partner	Masturbation

Instructions

1. Introduce activity.
2. Ask everyone to pair up with one other person.
3. Give each pair a marker.
4. Ask each pair to walk around the room and write other words that they have heard or used for each word written on the poster board paper. Play the CD while they're doing this.
5. Tell the group that these can be positive or negative words.
6. Encourage them to be as open and creative as they like--there are no right or wrong answers.
7. After 10 minutes lead a brief discussion:

- *How did that feel?*
- *What did you notice as you were doing this exercise?*
- *Why do you think we asked you to do this exercise?*

Through discussion, make sure the following points are made:

- This exercise was to get you to start thinking about our bodies, sex and relationships and to create awareness and respect.
- There are many different words and phrases used within the community when we talk about sex.
- Some of them are positive and can be uplifting and empowering. Others can be very negative and have a disempowering effect on us.

* This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

- Remember that there are many different factors that can impact a woman's view of herself, her sexuality and her body.
- As a peer advocate, we must have an open mind. Keep this in mind as you work with clients. No one deserves disrespect.
- Seek support if you need it.

Summary

Wrap up by reminding participants that we should use the proper terminology without putting down a client for using jargon or slang, and while making sure we're both talking about the same thing! We can do this by simply saying something like, "When you say xyz, are you talking about (whatever)?" or "I just want to make sure we're both talking about the same thing …" It's all in our tone of voice – keep it respectful and open.

* This module is part of the online toolkit *Building Blocks to Peer Success*. For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

PREVENTION EDUCATION FOR PLWHAs*

ABOUT THIS ACTIVITY

Time: 20 minutes

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

- Understand rationale for CDC's Advancing HIV Prevention Strategies;
- Understand the importance of prevention messages;
- Discuss options to increase safer sex choices.

Training Methods: Lecture, Discussion, Demonstration

In This Activity You Will…

- Ask questions to elicit answers and share definitions with group (10 minutes).
- Demonstrate how to a use and teach risk reduction tools (10 minutes).

Materials:

- Computer/Laptop and Projector
- Screen
- Condoms
- Penis models
- Optional: dental dams and female condoms for examples
- Handout- Steps to putting on a condom the right way
- Handout- STD chart
- Handout- PowerPoint Slides

Preparation:

- Print handouts

Instructions

1. Lead the discussion by following the PowerPoint slides and instructor notes. Pass out all handouts.

Talking Points for PowerPoint Slides

Slide 2: What we know

- In the US there are approximately 1.106 million people living with HIV as of 2006[1]
- 21% of HIV-infected people do not know they are infected[1]
- CDC estimates 55,000-58,000 new HIV infections annually in the US[2]
- CDC goal is to reduce number of new HIV infections in the US by at least 10% through 2010[3]

Slide 3: Providing prevention to clients living with HIV/AIDS

Why are prevention messages importatn to an HIV-positive person?

- Supports HIV-positive persons from becoming infected with a co-infection such as sexually transmitted diseases (STDs) further break down the immune system.
- Reduces chance of developing another strain of HIV.
- Decreases opportunity for drug-resistance mutation.
- Prevents spread of new HIV infections.

Slide 4: What are the barriers to prevention

- Client is HIV-positive so there is no need for prevention because they already have the virus.

- Client has a multitude of issues--depression, substance abuse,

* This module comes from the Missouri People to People Training Manual, 2008.

[1]CDC. HIV Prevalence Estimates—United States, 2006. MMWR 2008;57(39):1073-76.)
[2]CDC. HIV Incidence [online]. 2008. [cited 2008 Aug 15]. Available from URL: http://www.cdc.gov/hiv/topics/surveillance/incidence.htm.
[3]http://www.cdc.gov/hiv/resources/reports/psp/goal_objective.htm

domestic violence or sexual compulsivity-- so prevention is not a priority.

- Needle exchange programs for intravenous drug users (ID users) are illegal and unavailable.
- Client fears that asking their partner to use a condom will result in the partner thinking that there is a question of infidelity.
- Fear of disclosing status.
- Access to condoms (male and female), dental dams, drug-works (ID Users).
- Assumption that if sex partner did not ask to use a condom, it means that they are also HIV-positive.
- Prevention burnout-people are tired of hearing the same messages.
- Changing demographics-prevention messages need to target specific populations.
- Providers are not always comfortable talking about risk behaviors, not trained, have time only to focus on medical care and lack resources to refer their patients to services needed.

Slide 5: What tools support safer behaviors?

- Anal sex-correctly use a latex condom with water-based lubricant and new condom with each new partner or each act of intercourse.
- Vaginal sex- correctly use a latex condom (male or female) with water-based lubricant and new condom with each new partner or each act of intercourse.
- Oral sex-Dental dams or non-microwaveable plastic wrap for oral sex on a woman or rimming and a condom for male oral sex.
- Other penetrative sex (fisting, handballing or fingering) - use a latex glove and water-based lubricant.
- Sex toys-Use condoms or clean with soap and water after using with each person.
- Making small steps to support risk reduction.

Slide 6: Condom demonstration

- Ask participants to take out Steps to putting on a condom the right way handout.

Summary

CDC's goal of reducing the number of people becoming infected with HIV is going in the right direction. They have developed strategies such as making HIV testing a routine part of medical care, rapid HIV testing in non-traditional settings, working with HIV-positive persons to develop risk reduction plans to prevent future infections and decreasing perinatal HIV transmission by encouraging testing of the mother and infant.

- Talking about sexual behaviors is sometimes difficult or uncomfortable but very important. Encouraging providers to talk with their patients about safer sex choices is critical to reducing HIV infection. Because a person tests HIV positive does not mean they will abstain from sex.
- There are options to choose to continue safer sexual relationships.
- Reducing risk by cleaning drug works and using needle exchange programs is a positive choice.
- Providing information about substance abuse treatment options supports reducing transmission rates.

* This module is part of the online toolkit *Building Blocks to Peer Success.* For more information, visit http://www.hdwg.org/peer_center/training_toolkit.
This module comes from the Missouri People to People Training Manual, 2008.

SESSION HANDOUT # 1 of 3

STEPS TO PUTTING ON A CONDOM THE RIGHT WAY

1. Talk to your partner.
2. Buy condoms.
3. Check the expiration date of the condom.
4. Check for any holes in the package.
5. Push condom inside the package to one side, and tear open.
6. Blow into the condom to get the sombrero look.
7. Penis is erect.
8. Add water based lubricant to the inside of condom if desired.
9. Massage penis with lubricant if desired.
10. Pinch tip of condom to remove air.
11. Unroll condom down to base of erect penis.
12. Gently smooth out air bubbles.
13. Enjoy having safe sex.
14. Hold the base of the condom when he pulls out to keep the condom from slipping.
15. Remove the condom carefully to keep contents from spilling.
16. Throw the used condom away. (Never use a condom twice).

SESSION HANDOUT # 2 of 3

Sexually Transmitted Disease Chart

STD	Cause (Pathogen)	Symptoms	Treatment	Special Conditions
Chancroid	*Haemophilus ducreyi* (bacterium)	Women: Painful ulcers at entrance to vagina and around anus; may cause pain on urination or defecation, rectal bleeding, pain on intercourse, vaginal discharge; may have no symptoms Men: Painful ulcers on penis or tenderness in groin	Antibiotics	
Chlamydia women, inflam- infer-	*Chlamydia trachomatis* (bacterium-like organism)	Women: Vaginal discharge, pain on urination, spotting after intercourse, dull pelvic pain, bleeding; up to 80 percent have no symptoms Men: Urethral discharge, pain on urination; up to 50 percent have no symptoms	Antibiotics	If left untreated in can lead to pelvic matory disease (PID), tility, ectopic (tubal) pregnancy
Gonorrhea women, inflam- infer-	*Neisseria gonorrhoea* (bacterium)	*Women:* Vaginal discharge, pain on urination, spotting after intercourse, pelvic pain; may have no symptoms Men: Urethral discharge (pus), pain on urination	Antibiotics	If left untreated in can lead to pelvic matory disease (PID), tility, ectopic (tubal) pregnancy
Hepatitis B ongoing	Hepatitis B Virus	Women and Men: Jaundice (yellowing of the skin and eyes), fatigue, abdominal pain, loss of appetite, nausea, vomiting; may have no symptoms	Preventable with a Vaccine	Symptoms may be can result in cirrhosis, cancer of the liver
Herpes skin- more	Herpes Simplex Virus (HSV) types 1 and 2	Women and Men: Painful, blister-like sores (usually in genital area or around mouth), when sores are present pain on urination, headache, backache, fever, malaise	Acyclovir (Zovirax), to lessen the severity of future outbreaks	Can be spread by to-skin contact; is contagious
Syphilis the	*Treponema pallidum* (spirochete)	Women and Men: Primary-chancre (single, firm, painless, bump) on vulva, cervix, penis, nose, mouth, or anus Secondary-skin rash, fever, sore throat, headache, swollen lymph nodes Tertiary-cardiovascular problems, motor disturbances, paralysis, insanity	Antibiotics	Can cause congenital syphilis in newborns if mother is not treated
Trichomoniasis "official" researchers	*Trichomonas vaginalis* (protozoan)	Women: Thin, green or yellow, frothy discharge with foul odor, itching, pain on urination, pain on intercourse Men: Usually without symptoms but may involve urethral discharge, pain on urination, itching	Antibiotics	Not considered an STD by some
Genital Warts skin-	Human Papilloma Virus (HPV)	Women and Men: Small, firm, painless, cauliflower-like bumps that may appear in Clusters; may have HPV with no visible warts	Topical solutions, laser surgery, cryotherapy (freezing)	Can be spread by to-skin contact

Sources: American Social Health Association Internet website: http//sunsite.unc.edu:ASHA/

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SESSION HANDOUT # 2 of 3 (cont.)

James K. Jackson, M.D., Wellness: AIDS, STD, and Other Communicable Diseases, The Dushkin Publishing Group, Inc., 1992. Population Reports, Controlling Sexually Transmitted Diseases, Series L, Number 9, June 1993.

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U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, Division of STD/HIV Prevention 1994 Annual Report.

U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, Factsheet:

Series on Sexually Transmitted Diseases: Genital Warts.

U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, Sexually Transmitted Disease Surveillance, 1994; 1995.

American Red Cross I February 2003

PREVENTION EDUCATION FOR PLWHAs

SESSION HANDOUT # 3 of 3

Prevention Education for People Living with HIV/AIDS

Prevention Education for PLWH/As

What we know:

- In the US there are approximately 1.106 million people living with HIV as of 2006[1]
- 21% of HIV-infected people do not know they are infected[1]
- CDC estimates 55,000-58,000 new HIV infections annually in the US[2]
- CDC goal is to reduce number of new HIV infections in the US by at least 10% through 2010[3]

[1] CDC. HIV Prevalence Estimates—United States, 2006. MMWR 2008;57(39);1073-76.)
[2] CDC. HIV Incidence [online]. 2008. [cited 2008 Aug 15]. Available from URL: http://www.cdc.gov/hiv/topics/surveillance/incidence.htm
[3] http://www.cdc.gov/hiv/resources/reports/psp/goal_objective.htm

Prevention Education for PLWH/As

Providing prevention to clients living with HIV/AIDS

1. Why are prevention messages important to HIV+ persons?

- Reduces risk of co-infections (STDs)
- Reduces chance of developing another strain of HIV
- Decrease drug-resistance mutation
- Prevents spread of new HIV infections

Prevention Education for PLWH/As

2. What are the barriers to prevention?

- Client is already HIV+
- Psychosocial issues-depression, substance abuse, domestic violence, sexually compulsive d/o
- Needle exchange programs illegal and unavailable
- If I ask my partner to use a condom he/she will question infidelity
- Fear of disclosing
- Access to condoms, dental dams, needle exchange
- If partner didn't ask to use a condom that means they are also HIV+
- Prevention Burnout-tired of hearing the same messages
- Changing demographics-target specific prevention messages
- Providers not comfortable talking about prevention, only have time to talk about medical care, lack resources to refer the patient

Prevention Education for PLWH/As

3. What tools support safer behaviors?

- Anal Sex - correctly use a latex condom, use water-based lubricant, new condom with each new partner or each act of intercourse
- Vaginal Sex - correctly use a latex condom, use water-based lubricant, new condom with each new partner or each act of intercourse
- Oral Sex - dental dams, non-microwaveable plastic wrap on a woman or for rimming, a condom for male oral sex
- Other penetrative sex (fisting, handballing or fingering) - use a latex glove and water-based lubricant
- Sex Toys - Use condoms or clean with soap and water after using with each person
- Make small steps to support risk reduction

Condom Demonstration

SAFER SEX & HARM REDUCTION*

ABOUT THIS ACTIVITY

Time: 60 minutes

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

- Understand the importance of prevention messages;
- Discuss options to increase safer sex choices.

Training Methods: Brainstorm, Demonstration, Game

In This Activity You Will…

- Lead a discussion about safer sex (15 minutes)
- Discuss correct condom use and condom race game (15 minutes)
- Discuss other safer sex resources and activities (30 minutes)

Materials:

- Newsprint, markers
- 2 cucumbers or condom demo models
- Safer Sex Kits for demo including condoms, female condoms, dental dams, latex gloves, and water-based lubricant
- Safer Sex Kits for Distribution (if possible)
- Box of latex gloves and bottle of lube

(continued next page)

Instructions

1. Ask *"What is safer sex?"* Safer sex means having sex in ways that make it less likely that the STDs and HIV can be passed between sex partners.

2. Ask *"What is harm reduction?"* Harm reduction is a set of practical strategies that reduce negative consequences of drug use, incorporating a spectrum of strategies from safer use, to managed use to abstinence. Harm reduction strategies meet drug users "where they're at," addressing conditions of use along with the use itself.

3. *What is on the market now that can help with reduction of risk of spreading HIV and STDS?*

4. *What are the safest behaviors?* (Acknowledge that it is not always realistic.):

- Abstinence
- Not sharing injection drug needles or "the works".
- Not using drugs.

5. The behaviors that have no risk of HIV:

- Hugging
- Massaging
- Mutual masturbation
- Clothed sex where no body fluids are shared

6. Some risk reducing behaviors IF you are engaging in high-risk behaviors:

- Using latex condoms from start to finish, EVERY time, and using them correctly. If not all the time, then as much as possible.
- Using water-based lubrication
- Using dental dams and other materials from your Safer Sex Kit
- Not sharing your "works," needles, paraphernalia (like straws,

* This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

ABOUT THIS ACTIVITY (CONT.)

Materials (cont.):

Note: These handouts can be distributed as take-home resources:

- Handouts- Risk Meter
- Handout- How to Use a Condom
- Handout- How to Use a Female Condom
- Handout - How to Use Dental Dams and Other Latex Barriers
- Handout - 10 Things You Can Do to Practice Harm Reduction If You Use Drugs (can be found online at http://www.thebody.com/content/art31296.html)
- Handout - Project Inform's Safer Sex Handouts (can be downloaded from Project Inform website http://www.projectinform.org/info/sex/sex.pdf)

Preparation: Print out handouts

Assemble Safer Sex Kits

cookers, cotton), etc with ANYONE ELSE. If this is not possible then cleaning your "works" or needles with bleach and water (three times).

- Negotiating safer sex BEFORE you start to become sexually aroused.
- Having oral sex which can be safer than vaginal or anal sex.

7. Condom Race:

Ask 4 people to come up to the front of the room. Two people will be blindfolded while the other two will hold the dildo or penis models or cucumbers. The blindfolded persons will be handed a condom after they have been spun around 3-4 times and will be asked to put the condom on their partner's model. The 2 teams will race against each other. Facilitator will determine who has put it on correctly and explain the steps below.

Condoms

a. Use a condom each and every time you have a sexual interaction.

b. Handle the condom carefully, making sure not damage it with your teeth, fingernail, or other sharp object.

c. Place the condom on a "hard" penis before it touches you anywhere near your vulva/vaginal area/down there. If the man is uncircumcised, roll down the foreskin before you put the condom on.

d. If you use extra water-based lubrication, place some on the inside of the tip of the condom before placing the condom on the penis. Additional lubrication may be used on the outside of the condom and on the vaginal area; this helps if there is a break in the condom. Note that spermicides, Vaseline, oils, lotions, etc are not recommended. They can irritate the skin and create cuts in the skin and break latex condoms, allowing infections to spread.

e. Do not pull the condom tightly against the tip of the penis.

f. For a condom without a reservoir tip, leave a small empty space-about a half-inch-at the end of the condom to hold semen. Some condoms come equipped with a reservoir (nipple) tip that will hold semen.

g. Unroll the condom all the way to the bottom of the penis.

h. If the condom breaks during intercourse, withdraw the penis immediately and put on a new condom and use more lubrication.

i. After the guy ejaculates (comes), carefully withdraw the penis while it is still hard.

j. Hold on to the rim of the condom as the penis is withdrawn from the vagina to prevent the condom from slipping off.

k. Remove the condom carefully from the penis, making sure that semen doesn't leak out.

l. Wrap the used condom in a tissue and discard it in the garbage. Do not flush it down the toilet, as condoms may cause problems in the sewers.

m. Women are encouraged to wash their vaginas with warm water instead of douching or using other chemical materials.

n. Wash your hands thoroughly with soap and water.

8. Demonstrate other safer sex productions such as dental dams, gloves, finger cots, female condoms lubrications.

Latex Glyde/Dental Dams

Latex glyde/Dental dams are squares of latex used by dentists to isolate a particular tooth during dental procedures. They can usually be obtained at family planning clinics, women's clinics, or AIDS organizations. During sex, dams can be used over the vagina or anus while it is being orally or manually stimulated. The following suggestions may help you with your latex dam:

a. Before you try using a dam with a partner, experiment with it yourself. Try stretching it, tasting it, and rubbing it against your skin.

b. You may want to wash the dam before using it to improve its flavor. Use a mild soap, and rinse it well.

c. For increased sensitivity, consider using a water-based lubricant on the genital side of the dam.

d. Because the dam may slip during use, keep track of which side is which. Consider keeping several dams nearby in case one slips off and you lose track of which side is which. Partners can take turns using it.

e. `Although you can wash dams thoroughly and reuse them once or twice, it is safer to discard them and use a fresh one each time.

Other Options Besides Dams

a. Saran wrap or other plastic wrap of good quality can be used. Efficacy of this has not been tested, but it may provide similar protection to that of the dental dam. Do not expose it to heat or hot water. Do not reuse it. DO NOT USE the kind that says MICROWAVABLE or that is the stores' generic brand since it is usually made up of material that does not protect.

b. A condom or latex gloves may be cut in half and used like a dam.

c. In addition, finger cots (condoms for fingers) and latex gloves can be used if someone has open sores or cuts on their fingers.

Other Safer Sex Items Demonstration

Other activities to do if have time:

1. Group stands in circle with gloves on both hands and hold hands. Ask how does that feel? Then put lube on everyone's hands and everyone holds hands again. Ask how does that feel? Activity shows that lube can really make it fun and it feels better.

2. Condom relay race. Put condom on dildo with mouth using no hands. Create 2-3 teams and race.

Summary

Wrap up session by reminding participants that it's very important for us, as role models, to have a positive attitude about safer sex.

* This module is part of the online toolkit *Building Blocks to Peer Success*. For more information, visit http://www.hdwg.org/peer_center/training_toolkit. This module comes from the Lotus Women's Peer Education Training Manual, Center for Health Training and Women Organized to Respond to Life Threatening Diseases (WORLD), 2008.

RISK METER

Risk Meter (highest risk to the lowest risk) for passing HIV:

1. Sharing needles for drugs, medicine, hormones. – very high risk.
2. Receptive (receiving) anal sex without condom – very high risk. The lining of the rectum is very thin. It is damaged very easily during sexual activity. This makes it easier for HIV to enter the body.
3. Receptive (receiving) vaginal sex without condom – very high risk. The lining of the vagina is stronger than in the rectum, but it can still be damaged by sexual activity. All it takes is a tiny scrape that can be too small to see. The risk of infection is increased if there is any inflammation or infection in the vagina.
4. Insertive (giving) anal sex without condom – high risk. It's possible for HIV to enter the penis through any open sores, or through the moist lining of the opening of the penis.
5. Insertive (giving) vaginal sex without condom – high risk. It's possible for HIV to enter the penis through any open sores, or through the moist lining of the opening of the penis.
6. Oral sex – low risk. Risk is increased if there are bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth. Other diseases such as syphilis can be transmitted through oral sex.
7. Sharing sex toys – low risk. It is recommended that toys be cleaned between users.

SESSION HANDOUT # 2 of 4

HOW TO USE A CONDOM

1. Use a condom every time you have a sexual interaction. Make sure the condom has not been stored in a warm place (in a car, pocket, etc). Heat can damage the condom.
2. Check the expiration date on the back of the condom.
3. Handle the condom carefully, making sure not to damage it with your teeth, fingernail or other sharp object.
4. Place the condom on a "hard" penis before it touches anywhere near your vaginal area. If the man is uncircumcised, roll down the foreskin before you put the condom on.
5. Do not pull the condom tightly against the tip of the penis.
6. For a condom without a reservoir tip, leave a small empty space-about a half-inch-at the end of the condom to hold semen. Some condoms come equipped with a reservoir (nipple) tip that will hold semen.
7. Unroll the condom all the way to the bottom of the penis. Add lubricant on the top of the condom, if needed.
8. If the condom breaks during intercourse, withdraw the penis immediately and put on a new condom and use more lubricant.
9. After the guy ejaculates (comes),carefully withdraw the penis while it is still hard.
10. Hold on to the rim of the condom as the penis is withdrawn from the vagina to prevent the condom from slipping off.
11. Remove the condom carefully from the penis, making sure that semen does not leak out.
12. Wrap the used condom in a tissue and discard it in the garbage. Do not flush it down the toilet, as condoms may cause problems in the sewers. Wash your hands thoroughly with soap and water.

1-2

3-4

5-7

8-12

HOW TO USE A FEMALE CONDOM

1. Open the package carefully; tear at the notch on the top right of the package. Do not use scissors or a knife to open.
2. The outer ring covers the area around the opening of the vagina. The inner ring is used for insertion and to help hold the sheath in place during intercourse.
3. While holding the sheath at the closed end, grasp the flexible inner ring and squeeze it with the thumb and second or middle finger so it becomes long and narrow.
4. Choose a position that is comfortable for insertion – squat, raise one leg, sit or lie down.
5. Gently insert the inner ring into the vagina. Feel the inner ring go up and move into place.
6. Place, the index finger on the inside of the condom, and push the inner ring up as far as it will go. Be sure the sheath is not twisted. The outer ring should remain on the outside of the vagina.
7. The female condom is now in place and ready for use with your partner.
8. When you are ready, gently guide your partner's penis into the sheath's opening with your hand to make sure that it enters properly – be sure that the penis is not entering on the side, between the sheath and the vaginal wall.
9. To remove the condom, twist the outer ring and gently pull the condom out.
10. Wrap the condom in the package or in tissue, and throw it in the garbage. Do not put it into the toilet.

SESSION HANDOUT # 4 of 4

HOW TO USE A DENTAL DAM OR OTHER LATEX BARRIERS

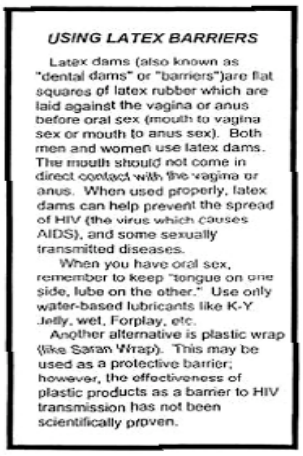
Dental dams or Glyde dams are squares of latex. They can usually be obtained at family planning clinics, women's clinics, or AIDS organizations. During sex, dams can be used over the outside of the vagina or anus while it is being orally or manually stimulated.

The following suggestions may help you with your dental dam:

1. Before you try using a dam with a partner, experiment with it yourself. Try stretching it, tasting it, and rubbing it against your skin.
2. You may want to wash the dam before using it to improve its flavor. Use a mild soap, and rinse it well.
3. For increased sensitivity, consider using a water-based lubricant to the side of the dam that will be put against the genitals.
4. Because the dam may slip during use, keep track of which side is which. Consider keeping several dams nearby in case one slips off and you lose track of which side is which. Partners can take turns using it.
5. Although you can wash dams thoroughly and reuse them once or twice, it is safer to discard them and use a fresh one each time.

Other options other than dental dams:

1. Plastic wrap. This has not been scientifically tested, but it may provide similar protection to that of the dental dam. Do not expose it to heat or hot water. Do not reuse it. Non-microwaveable plastic wrap is recommended.
2. A condom or a latex glove may be cut in half and used like a dental dam.
3. Finger cots (condoms for fingers) and latex gloves can be used if someone has open sores or cuts on their fingers. They will also provide extra protection against genital warts and other STD's.

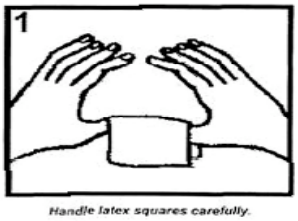


USING LATEX BARRIERS

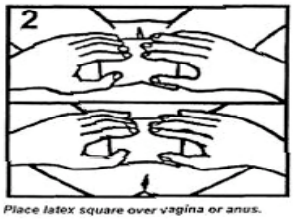
Latex dams (also known as "dental dams" or "barriers")are flat squares of latex rubber which are laid against the vagina or anus before oral sex (mouth to vagina sex or mouth to anus sex). Both men and women use latex dams. The mouth should not come in direct contact with the vagina or anus. When used properly, latex dams can help prevent the spread of HIV (the virus which causes AIDS), and some sexually transmitted diseases.

When you have oral sex, remember to keep "tongue on one side, lube on the other." Use only water-based lubricants like K-Y Jelly, wet, Forplay, etc.

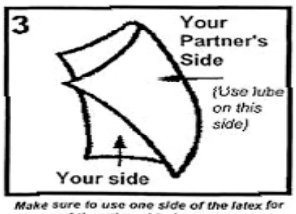
Another alternative is plastic wrap (like Saran Wrap). This may be used as a protective barrier; however, the effectiveness of plastic products as a barrier to HIV transmission has not been scientifically proven.



Handle latex squares carefully.



Place latex square over vagina or anus.



Make sure to use one side of the latex for you and the other side for your partner.

Throw latex away when done. Don't use ir more than once..

Making Your Own Latex Barrier

Dental dams are often available at medical supply stores, some pharmacies, and sex shops.

If you can't find dental dams, here are a couple of ways to make one:

1. Unroll an unlubricated condom and cut off the tip, then cut up along one side.

2. Unfold and put water-based lube on the side facing the vagina or anus.

1. Take a latex glove and cut off all four fingers (not the thumb) and cut along the outside (by the pinky).

2. Now you have a latex barrier. You can stick your tongue in the thumb area!