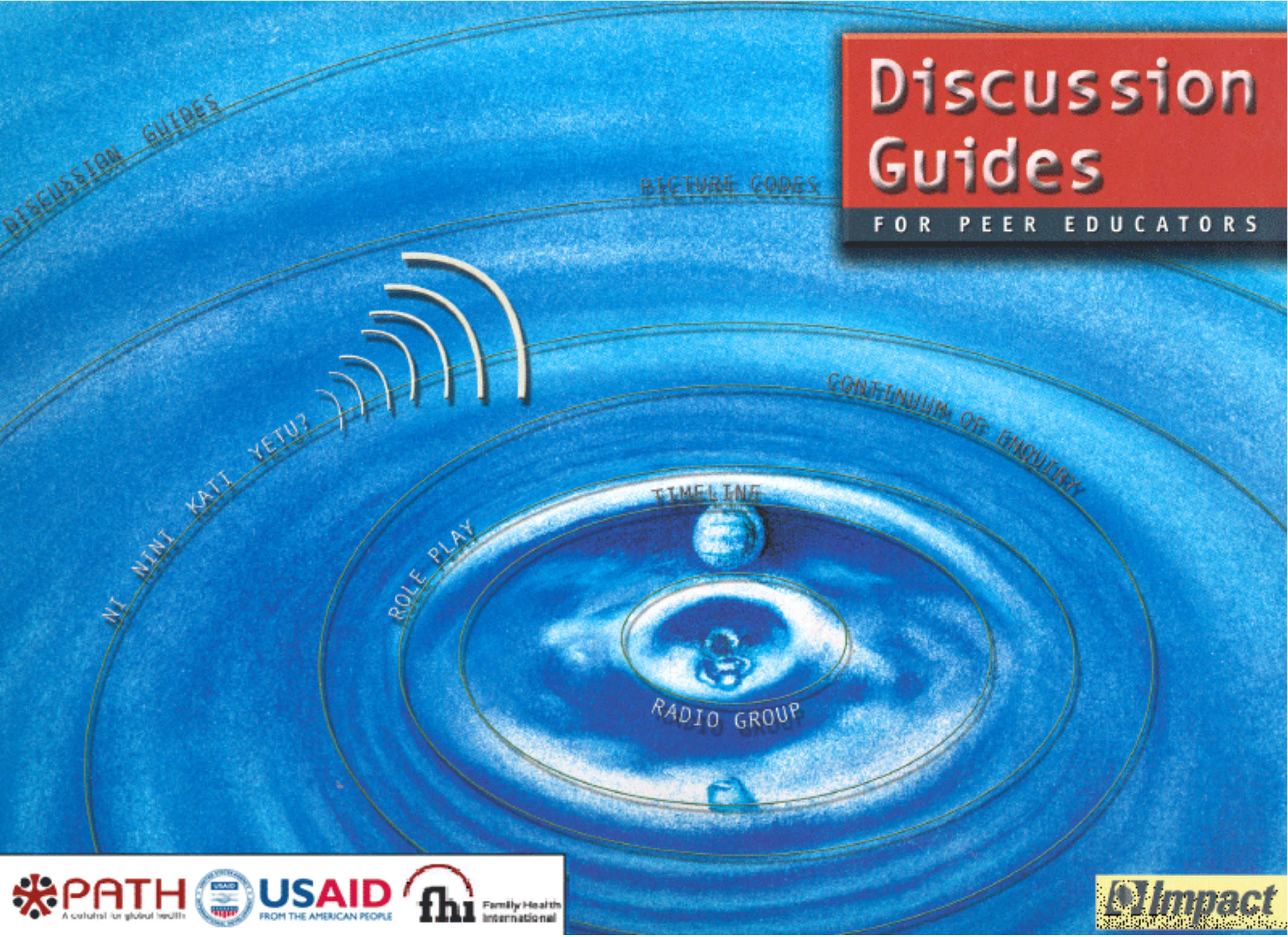
Discussion Guides

FOR PEER EDUCATORS



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Introduction

This series of six Discussion Guides have been designed by the Program for Appropriate Technology in Health (PATH) for use by Peer Educators of Family Health International's IMPACT project in Kenya. They provide systematic, step by step guidance for a peer educator to engage discussion groups in enquiry and dialogue into **the difference between HIV and AIDS.**

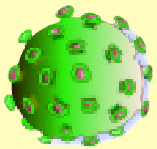
The Discussion Guides are color coded, with different colors for each chapter (as shown alongside). The durable format with thick paper permits Peer Educators to take individual discussions guides out of the file. It also permits specific sheets to be updated as information or knowledge changes.

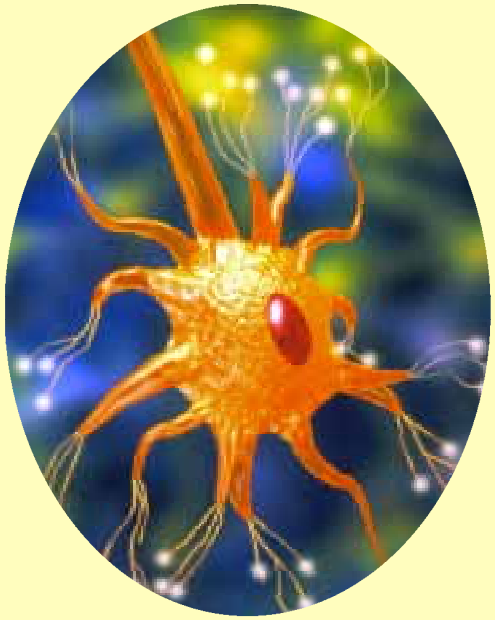
Finally, as new Discussion Guides are created, they can be added to the collection in this file.

January 2003

DISCUSSION GUIDE

1 The invisible world of germs and cells





What is the smallest living thing that you can see with your naked eyes?

OBJECTIVE: To introduce the world of living microorganisms.

GUIDELINES

1. **Ask:** What is the smallest living thing that you can see with your naked eyes? Participants name living creatures that they can see with their naked eyes. Allow a list of 10 to 12 names to emerge. Typical examples:

   Bedbugs

   Lice

   Jiggers

   Human lice

   Chicken lice

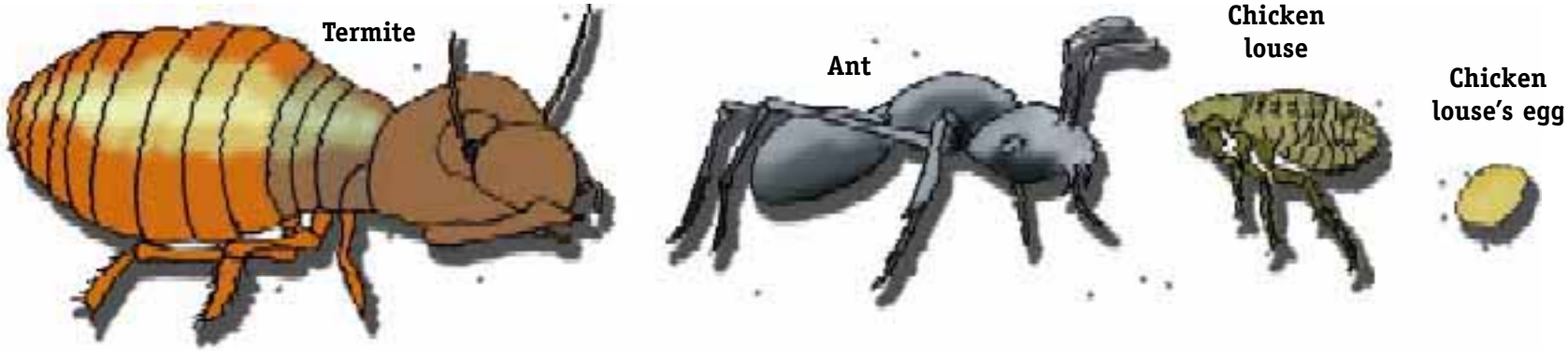
2. **Wait** for someone to mention chicken lice. This is generally named as the smallest visible living creature. Ask what is even smaller than a chicken lice. (**Correct answer**: The eggs of the chicken lice.)

3. **Ask:** What is even smaller than the eggs of the chicken lice? (**Correct answer**: Baby chicken lice within the egg.)

4. **Tell** participants that there is a universe of tiny living organisms, called **microorganisms**, which cannot be seen with the naked eyes. Microorganisms can only be seen with the help of powerful instruments called microscopes.

INFORMATION

1. **Microorganisms are tiny living creatures too small to be seen with the naked eyes. There are thousands of different kinds of microorganisms in the world.**



Where are microorganisms found?

INFORMATION

1. **Microorganisms are everywhere — within our bodies, on our skins, plants, garbage, rivers, homes, food and everywhere else.**

2. **Some microorganisms can only live in freezing temperatures, such as in the north and south poles. Some need extremely hot temperatures, such as hot springs or deserts.**

3. **Some microorganisms, such as the one that causes tetanus in human beings, needs an environment where there is no oxygen.**

Objective: To create the understanding that microorganisms are found inside and outside the human body.

GUIDELINES

1. **Ask**: Where are microorganisms found? List participants' suggestions in two columns on a flip chart sheet. Do not yet write any headings above the columns.

   In the **left column,** write locations that belong to the human body, such as skin, stomach, nails, hair, eyes, and intestines. In the **right column** write locations that are outside the human body, such as plants, soil, garbage, and air.

2. When about 10-15 locations have been named, explain that some microorganisms belong to the body; write the word **Insiders** above the left column. Explain that some microorganisms are **Outsiders**, and live outside the body. Write **Outsiders** above the right column.

3. **Explain:** Microorganisms are everywhere — within our bodies, on the skin, plants, garbage, rivers, homes, food. Some require freezing temperatures, such as in the north and south poles. Some need the extreme heat of deserts. Some, like the one that causes tetanus, need an environment where there is no oxygen.

4. **Ask:** Are microorganisms in stools (feces) insiders or outsiders? (**Answer:** They are insiders who become outsiders.)

5. **Explain:** When outsider microorganisms enter the body, they become insiders, and can make you sick.

6. **Give an example** of the common cold, which is caused when an 'outsider' (the cold germ) enters your body and becomes an 'insider'. When you sneeze, those insiders come out, and become outsiders again. Now they can infect others.

7. **Ask** participants if microorganisms on the skin are insiders or outsiders. (**Answer:** A microorganism on the skin is as much a part of the body as one that is inside.)

What is the human body made of?

Objective: To introduce the concept of **cells**, as the basic unit of life.

GUIDELINES

1. **Ask:** What is the human body made of? Let participants offer their suggestions and note them on a flip chart sheet. Answers may include bone, muscles, teeth, hair, organs, and so on.

2. **Ask** participants what bone, muscles, teeth, hair, organs, and so on are made of. Note their answers on a flip chart sheet.

3. **Introduce the word cells.** Explain that the human body is made of **cells**, which are the basic unit of life**.** There are hundreds of different kinds of cells, and they vary widely in size, shape, and function. Blood cells are different from hair cells, which are different from muscle cells, which are different from skin cells. Even the skin cells of the feet are different from the skin cells of the face.

   Cells regulate each and every activity that makes us human. Saliva is produced by cells, food is digested by juices cells produce, wounds heal because cells repair the damage. The male's sperm cell and the female's ovum can actually create a new human being when they fuse together.

   An average adult human being has about **75 trillion cells** (75,000,000,000,000) in his or her body. There are more cells on the surface of a person's hand than there are people in earth.

Red blood cells

White blood cells

Nerve cells

INFORMATION

1. **Human beings are made of cells. The cell is basic unit of life.**
2. **Cells vary widely in size, shape, and function.**
3. **An average adult human being has about 75 trillion cells (75,000,000,000,000) in his or her body.**
4. **There are more cells on a person's hand than there are people on earth.**
5. **Cells regulate each and every activity that makes us human. Saliva is produced by cells, food is digested by juices cells produce, wounds heal because cells repair the damage. The male's sperm cell and the female's ovum can actually create a new human being when they fuse together.**

What do microorganisms do?

INFORMATION

1. **Some microorganisms are harmful and can cause ill health when they enter the body. Such microorganisms are called 'germs' in common English. A more technical word meaning 'germ' is pathogen.**

2. **When germs invades a body, the person is said to be infected. Infection often leads to disease.**

Objective: To introduce the concepts of useful and harmful microorganisms. To introduce the word **germs**.

GUIDELINES

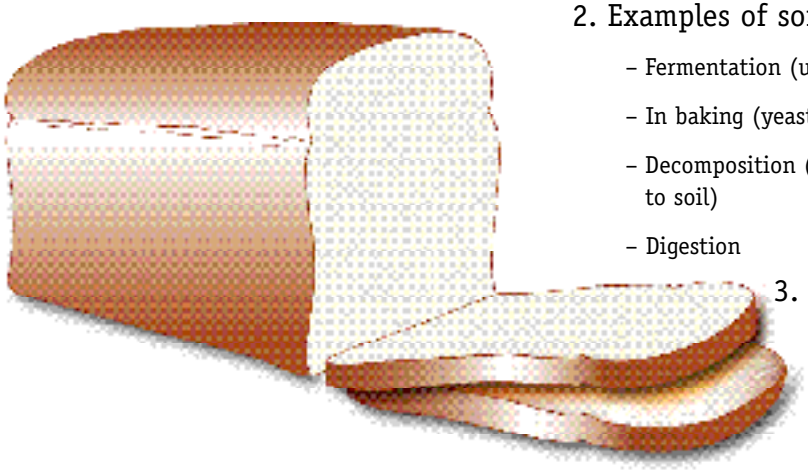
1. **Ask:** What do microorganisms do? Let participants make their suggestions and note their replies in **two columns** on a flip chart sheet. In the left column, write down useful functions of microorganisms, and in the right column, write down harmful functions of microorganisms.

2. Examples of some useful functions are:
   - Fermentation (used to make beer, yoghurt)
   - In baking (yeast used to make mandazi soft)
   - Decomposition (used to convert dead organisms to soil)
   - Digestion

3. The main example of a harmful function of microorganisms is causing disease in human beings.

4. Write the words **Useful** and **Harmful** above the columns.

5. **Introduce the word 'germ'.** Explain that microorganisms that cause infection and disease are called **pathogens**. Explain that we will be using the more colloquial word **germs** to refer to pathogens.



What are the body's gateways or openings through which harmful microorganisms can enter?

Objective: To introduce the concept of body openings through which infection can happen. To introduce the concept of behavior sometimes leading to infection.

GUIDELINES

1. **Ask:** What are the body's gateways or openings through which harmful microorganisms can enter? Let participants offer their suggestions, and write them down on a flip chart sheet. The final list should include the following:
   - Eyes
   - Ears
   - Nose
   - Mouth
   - Vagina
   - Anus
   - Penis
   - Urethra
   - Skin
   - Cuts and wounds
2. If participants misunderstand the previous question and talk about modes of transmission such as infected food, remind them that you are interested in a list of 'gateways' or 'openings' in the body. In the case of infected food, the gateway may be the mouth.
3. **Explain** that **in many cases,** a person's behavior plays a part in enabling infection to happen through one of these body gateways.
   - For example, a person gets food poisoning not because he or she has a mouth but because of eating contaminated food.
   - A person may get a sexually transmitted infection not because he or she has a penis or a vagina but because of having had unprotected sexual intercourse with another person of unknown STI status.

INFORMATION

1. **The body has several gateways or openings through which a germ can enter and infect. These include:**
   - **Eyes**
   - **Ears**
   - **Nose**
   - **Mouth**
   - **Vagina**
   - **Anus**
   - **Penis**
   - **Urethra**
   - **Skin**
   - **Cuts and wounds**
2. **A person may get infected through these gateways because of some act or personal behavior, such as eating contaminated food, or having unprotected sexual intercourse with a person of unknown STI status.**

Which different microorganisms can you name?

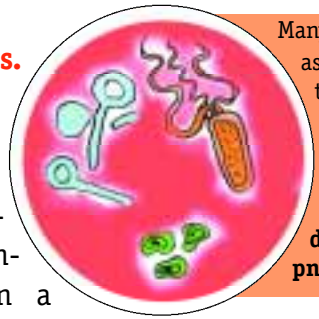
INFORMATION

1. **Some examples of micro-organisms are bacteria (such as bacilli), amoebas, plasmodium, fungi, and viruses.**
2. **Bacteria cause many sexually transmitted infections such as syphilis and gonorrhea, and may also cause diarrhea, meningitis, and pneumonia, among others.**
3. **Some fungi cause infections such as oral thrush (candidiasis). A well-known fungus is the common mushroom, which is cooked and eaten.**
4. **Viruses cause diseases like polio, hepatitis, measles, and chicken pox, and AIDS.**

Objective: To introduce the word **virus.**

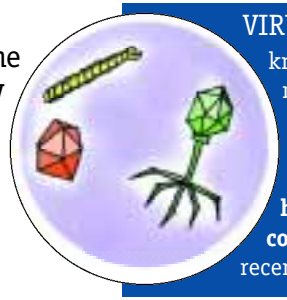
GUIDELINES

1. **Ask:** Which different microorganisms can you name? Allow participants to name different microorganisms, and write them down on a flipchart. The list may include:
   - Bacteria
   - Bacilli
   - Amoebas
   - Plasmodium
   - Fungi
   - Viruses
2. **Discuss** each kind of microorganism in the list, and also the diseases they cause, using the boxes on this page as a guide.
3. **Explain:** Viruses are the smallest of germs. HIV is a virus.



Many BACTERIA are useful, such as those that ferment beer or turn milk into yoghurt. However, many also cause disease. in humans. Some diseases caused by bacteria include **gonorrhea, syphilis, meningitis, diphtheria, diarrhea, pneumonia, and leprosy.**

Examples of FUNGI include mushrooms, molds that grow on bread, and yeast used to make wandazi soft. Diseases caused by fungi include **ringworm** and **athlete's foot.** One yeast-like fungus that lives in the mouth or vaginal tract is called candida and is usually harmless but can cause disease in some situations. Then it can turn into an infection called **candidiasis**, producing an oral infection called **thrush**, or inflammation of the vagina.



VIRUSES are the smallest pathogens known. In order to multiply, viruses must find a home inside some living organism, like a human cell. Some of the diseases caused by viruses include **measles, polio, hepatitis, chicken pox, the common cold, Ebola** — and more recently, **AIDS**.

What is the shape of HIV?

Objective: To introduce HIV in simple terms.

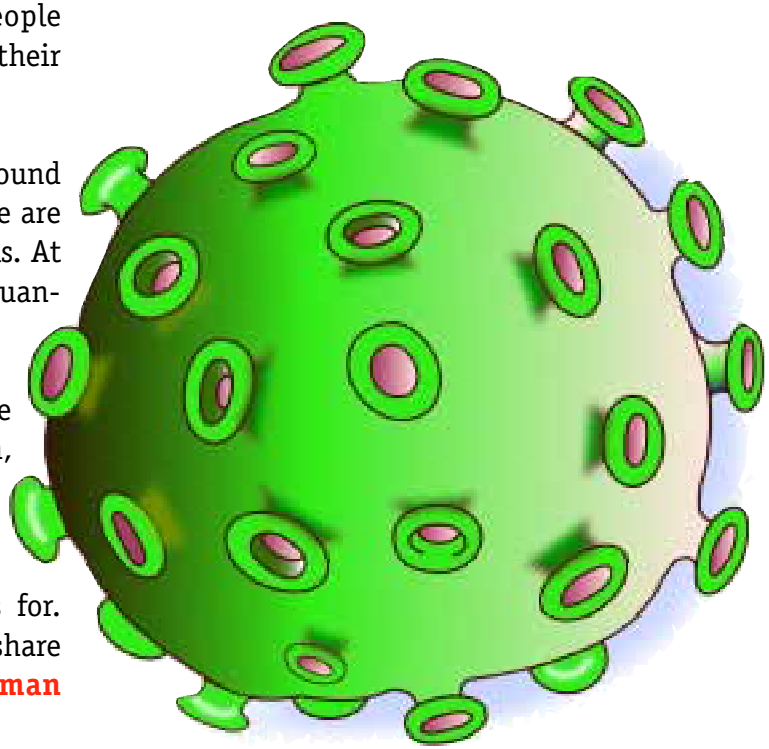
GUIDELINES

1. **Ask** participants what they think is the shape of HIV. Let five or six people speak. There is no need to record their remarks.

2. **Explain** that HIV consists of a round shell, like a little ball. On its surface are **bumps** made up of various chemicals. At the centre of the shell is a small quantity of chemicals.

   NOTE: In this session, **do not** use the words DNA, RNA, CD4, protein, nucleus or any other words that may sound technical.

3. **Ask** participants what HIV stands for. Take five or six answers, and then share with them that HIV stands for **Human Immunodeficiency Virus**.



INFORMATION

1. **HIV consists of a round shell with chemical bumps outside, and a small quantity of chemicals in the centre.**

2. **HIV stands for Human Immunodeficiency Virus.**

How big is HIV?

INFORMATION

1. **A nanometer is one-billionth of a meter. The short way of writing nanometers is NM.**

2. **HIV, the virus that causes AIDS, is only 100 NM.**

Objective: To create an understanding of nanometers and the size of HIV.

GUIDELINES

1. **Ask** participants how long a meter is. (**Answer:** Roughly three feet)

2. **Explore** participants' understanding of a centimeter and millimeter.

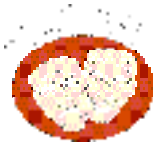
3. **Explain** that a nanometer is a special unit much much smaller than a millimeter, used to measure microorganisms.

4. **Explain** that if a meter were divided into 1,000,000,000 parts, one of those parts would be a nanometer. The short way of writing **nanometers** is NM.

5. HIV is only 100 nanometers in width.

6. HIV exists in the blood and other body fluids of a person. If any of those body fluids finds a way to enter your body, then you are exposed to HIV and may become infected.

Size matters.



Objective: To create an understanding of the relative sizes of different microorganisms.

GUIDELINES

1. Keep all the placards in a large bag.

2. Arrange participants in a 'U' shape.

3. Distribute the placards at random among the participants.

4. **Explain:** Each placard has the name of a microorganism, and the size of that microorganism. Some are human body cells, some are bacteria, some are viruses. The number on each card is the size of that microorganism in nanometers.

5. **Explain** again what a nanometer is (see information on previous page).

6. **Instruction:** Read your placard and note the name of the microorganism on it and its size.

7. **Instruction:** Compare the size on your placard with the size on the placard to your right. If your size is bigger, then exchange your placard with him or her.

8. **Instruction** Repeat this process until the smallest placards are on your left and the largest ones on your right in the group.

9. Go around the group from the right. Identify each cluster of microorganisms and have participants read out the name and size of the microorganism.

10. Move around the group, and as you proceed, compare the sizes of smaller microorganisms with larger ones. Point out that HIV is among the smallest microorganisms, but that polio and hepatitis B viruses are even smaller. Point out that white blood cells and human sperm cells are giant compared to HIV.

MATERIALS NEEDED

1. Using scissors and stiff card paper, cut yourself about six placards for each of the categories below.

Human Sperm
3,000 Nm

Ordinary Human Cell
2,000 Nm

White Blood Cell
800 Nm

Red Blood Cell
500 Nm

HIV
125 Nm

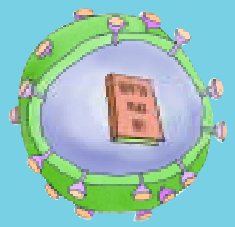
Polio
60 Nm

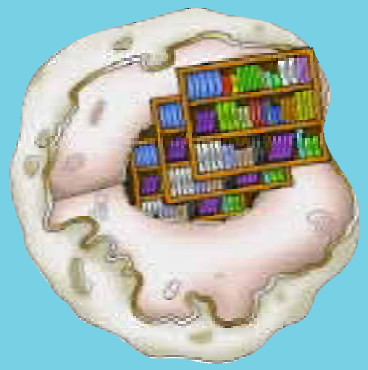
Hepatitis B
40 Nm

DISCUSSION GUIDE

How cells and germs use instructions

2





DG2

Shoetime!

How cells and germs use instructions

MATERIALS NEEDED

1. **A pair of shoes, with shoelaces.**
2. **Two chairs.**
3. **A table.**

Objective: To create an understanding of the role of clear, correct instructions for carrying out an activity. This game sets the foundation for understanding how germs and cells follow chemical instructions.

GUIDELINES

1. **Place a chair on the table.** Climb up and sit on it. The height helps all participants to observe your feet. Place the other chair so that it is facing away from you.

2. **Give instructions, saying:** "In this demonstration, I am an imaginary person living on the moon, and I do not know how to put on shoes." Invite any participant to give you instructions on how to put on and lace a pair of shoes. Tell him or her to be as simple and precise as possible, and that you will follow the instructions literally.

3. **Invite** the participant to sit in the chair facing away from you. Once he or she is seated, remove your shoes and place them before your feet in a disorderly way (that is, keep the left shoe next to the right foot, or let the heels face forward, or let the soles face upward, and so on).

4. **Follow** the participant's instructions exactly.

   Note: If the instructions are vague or too general, then 'misinterpret' them. If the instruction is, "Keep the shoes next to your feet", then place the left shoe near the right foot, and the right shoe near the left foot; or place a shoe pointing the wrong way; place the other shoe with the sole facing up; and so on.

5. **Repeat** the exercise until two to three participants have tried giving you instructions on how to wear the shoes. If a player's instructions are clear and correct, follow them.

6. **Remember:** The objective of the exercise is achieved once you have demonstrated how simple sounding but vague instructions can lead to messy and incorrect results.

How do people pass instructions to each other in real life?

Objective: To introduce the concept of a written 'manual' of instructions. To introduce the word **manual**.

GUIDELINES

1. Ask participants to remember occasions when they had to follow instructions to perform some task. Make a list on a flip chart sheet.

   Tip: Urge participants to think of oral instructions as well as written instructions.

2. **Ask** participants if they know a word which describes a book of written instructions. The word **manual** should emerge from this discussion. Write it on the flip chart sheet.

INFORMATION

1. **Instructions can be oral or written.**
2. **A book of written instructions is called a manual.**
3. **Examples of written instructions include the following:**
   - How to use a video recorder
   - How to use a computer
   - Doctor's prescription
   - Recipe
   - Peer educator's manual

DG2

How cells and germs use instructions

What happens in your mouth when you see a hot plate of nyama choma?

Objective: To create the understanding that the body's cells follow 'instructions' to carry out their tasks.

GUIDELINES

1. **Ask:** What happens in your mouth when you see a plate of nyama choma? Allow participants to give their answers. There is no need to record the answers.

2. Once **saliva** has emerged as the answer, ask participants what makes saliva. (**Answer:** Saliva cells in the saliva glands).

3. **Ask:** Where do saliva cells find instructions for making saliva? Write answers on a flip chart sheet. Typical answers include the brain, blood, the nerves, and the cells themselves.

4. **Explain:** Each cell in our body carries small chemical 'manuals' within itself. The cell that makes saliva finds the instructions in its chemical 'manual' on how to make saliva.

5. Discuss some different body functions for which 'manuals' are required. Examples: Making hair grow, healing wounds, digesting food, producing a baby, breathing, excreting waste, fighting disease. Explain that there are thousands of such functions, with a chemical manual exists for each of them.

6. **Explain** that if all these thousands of manuals were to be translated into Kiswahili and published as books, they would form a stack extending half the distance from the earth to the moon.

INFORMATION

1. **All cells carry out their functions by following the instructions in tiny chemical manuals that they contain.**

2. **The body's cells perform thousands of functions. Each function requires a manual of chemical instructions.**

3. **If all the chemical 'manuals' in a cell were to be published as books, they would form a stack going from the earth half the distance to the moon.**

How many manuals does a microorganism have?

Objective: To create an understanding of DNA, which contains all the chemical manuals of the human body. To introduce the word **library**.

GUIDELINES

1. **Ask:** How many of these thousands of manuals do you think would be there inside a cell whose main job is to make saliva? Let participants make guesses.

2. **Explain:** Each cell in the body contains a complete copy of all the manuals needed by the human body. These chemical manuals exist inside a chemical library in the center of each cell. Introduce the word **library**.

3. **Explain:** The chemical library is called DNA, which stands for Deoxyribonucleic Acid. **Note:** It is advisable not to introduce this technical term unless participants insist.

   Note: Some participants may feel confusion between the 'brain' and the 'manuals'. Doesn't the brain control the body's every activity? **Explain** that the brain is like a supervisor. For example, if a man tells his driver to go to the school and pick up his children, will he also give detailed instructions to that driver on how to drive? Similarly, the brain may tell the mouth that some tasty food is waiting to be digested, but it will not pass on detailed instructions on how to make saliva. For that, the cell will refer to its own 'manual'.

INFORMATION

1. **All of the body's chemical 'manuals' exist in a library in the nucleus or center of the cell. This library is known as DNA.**

2. **DNA stands for DeoxyriboNucleic Acid.**

3. **Each cell contains a complete copy of the body's entire DNA library, even if it may use only one of the 'manuals', such as how to make saliva.**

Does HIV have its own chemical 'manual' like the human body's cells do?

INFORMATION

1. **HIV has its own chemical 'manual'. The manual contains instructions on how to make HIV.**

2. **When HIV infects a person, it breaks into certain white blood cells, and leaves its manual within that cell's DNA library.**

3. **Over the years, as more and more white blood cells begins following HIV's instruction manual, they make millions of HIV, and the person develops AIDS. Until then, he or she is infected with HIV but not sick with AIDS.**

4. **It can take between 2 and 15 years before an HIV positive person develops AIDS.**

Objective: To create a basic understanding of how HIV uses its 'manual' to harm the body.

GUIDELINES

1. **Test:** Is HIV a cell? (**Correct answer:** HIV is a virus, not a cell.)

2. **Test:** What is the size of HIV? What is the size of the average human cell? (**Correct answer:** HIV is 100 nm; the average human cell is 200,000 nm in size.)

3. **Ask:** Does HIV too have a manual? If so, what are the instructions in the manual? Let participants express their views.

4. **Explain:** HIV carries a 'manual' with instructions on how to make HIV.

5. **Explain:** When HIV infects a person, it seeks certain white blood cells and breaks into them. Once inside, it gets rid of its outer chemical shell. All that remains is the 'manual' with instructions on how to make HIV. This manual is inserted into the white blood cell's own DNA 'library'. **Note:** Do not yet use the words Helper T Cell, CD4 cells, or T4 cells.

6. **Explain:** It is like inserting a manual called *How to make a nuclear bomb* into a public library. The day someone opens the manual and follows the instructions, a dangerous bomb will be created.

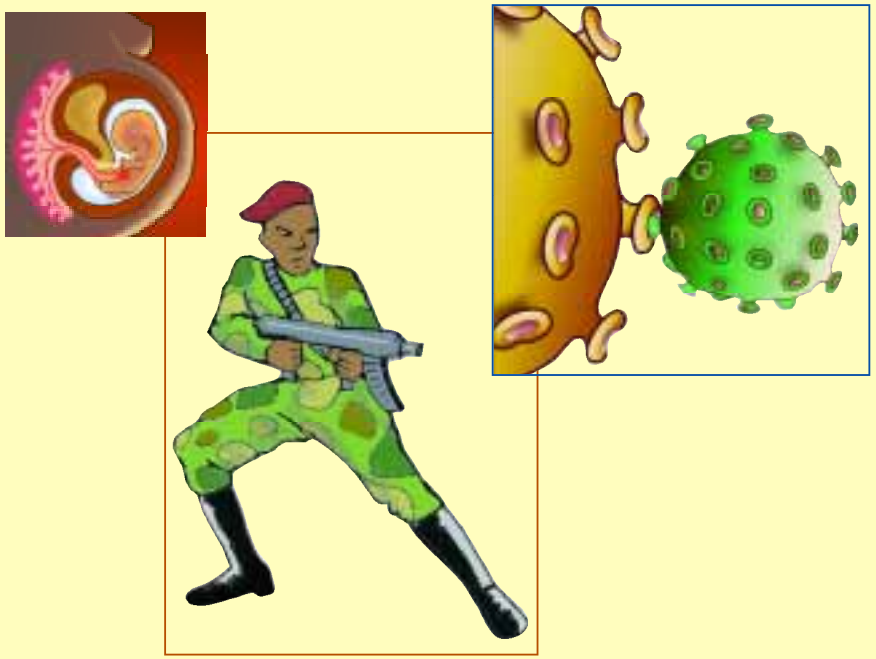
7. **Explain:** As long as HIV's manual has not been opened by too many white blood cells, the individual is infected with HIV but not sick. Between 2 and 15 years later, as more and more white blood cells follow the instructions in HIV's manual, they make millions of HIVs and the person develops AIDS. The white blood cells stop doing their normal work and turn into 'factories' making HIV.

8. **Explain:** A number of factors affect how long HIV's manual will lie unopened in a white blood cell, ranging from health, nutrition, other infections, risk behavior, stress, and attitude.

DISCUSSION GUIDE

3

What is the Immune System?



When was the last time you fell ill and recovered though you took no medicines?

INFORMATION

1. **All human beings are born with an immune system, made up mainly of white blood cells, to protect the body from disease.**

2. **Some people have stronger immune systems than others. During a lifetime, a person's immune system may be stronger or weaker at different times.**

Objective: To create an understanding that the human body has a natural defense system.

GUIDELINES

1. **Ask:** When was the last time you fell ill but recovered though you took no medicines? Ask for examples of illnesses such as malaria, typhoid, and measles. Allow participants to share real life experiences.

2. **Ask:** What does the body have which helps it to recover from sickness without medicines? Write the answers on a flip chart sheet. Typical answers include:
   - Faith
   - Immune system
   - Defense system
   - Antibodies
   - White blood cells
   - Superstitious practices

   If the term immune system or defense system does not come up, add it to the list after asking participants if they have heard of such a thing. Explain that the **immune system** is the name given to the body's natural defense system.

3. **Discuss** the role of faith and prayer versus medicines, by asking:
   - Can faith alone, without drugs, cure a disease?
   - Will a faithless person take longer to be cured than one who has faith?
   - A newborn infant has no faith yet. Will it take her longer to heal with medicines because of this?
   - Will medicines take longer to heal an unconscious person?

4. **Ask:** Where is the immune system found? Let participants share views. Answers may include blood, brain, and white blood cells. Note them on a flip chart sheet.

5. **Explain** that all human beings are born with an immune system, made up mainly of white blood cells, to protect the body from disease. Some people have stronger immune systems than others. During a lifetime, a person's immune system may be stronger or weaker at different times.

How does a country like Kenya protect itself from its external enemies?

Objective: To help participants realize that detection, sounding the alarm and attacking are three important functions of a defense system.

GUIDELINES

1. **Ask** participants to name the activities by which a country like Kenya defends its borders from invasion by an external enemy. Note answers on a flip chart sheet. The final list should include detecting the enemy, communication (signals), sounding the alarm, and attacking the enemy.

2. On a separate flip chart sheet, make three columns and **write the three shortlisted activities in the leftmost column**: 1. Detecting the enemy; 2. Sounding the alarm; and 3. Attacking the enemy.

3. **Ask:** Whose job is it within the armed forces to perform these functions? The following answers should emerge: Patrol regiments (detecting the enemy); Signal corps (sounding the alarm); and soldiers (attacking). **Write these in the middle column of the flip chart.**

4. **Explain** that the immune system in the human body also has its counterparts for detecting the enemy, sounding the alarm and attacking the enemy. **Ask** participants to name the cells that perform these tasks. Note their suggestions on a separate flip chart sheet.

5. **Explain** that the functions of detecting the enemy and sounding the alarm are performed by a white blood cell known as the **Helper T4 Cell.** Other names for this cell are **T4 Cell, T4 Lymphocyte, CD4 cell** and **Helper T Cell.**

6. Explain that **antibodies** attack the invading germs.

7. In the right-most column, **write 'Helper T4 Cell'** against **'Detecting the enemy'** and **'Sounding the alarm'.** Write **'Antibodies'** against **'Attacking'.**

INFORMATION

1. **Invading germs are detected by the Helper T4 Cell. This cell is may also be called T4 Cell, T4 Lymphocyte, CD4 Cell, CD4 Lymphocyte, or Helper T Cell.**

2. **The function of attacking and defeating germs is carried out by antibodies.**

HELPER T4 CELLS

The Watchmen. They detect germs and sound the alarm.

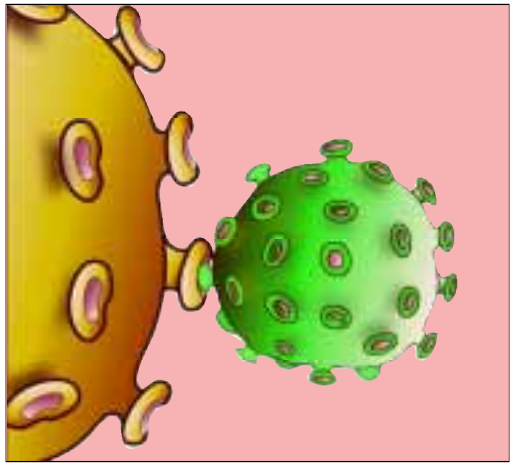
ANTIBODIES

Specific antibodies exist to fight each germ that enters the body.

Cells don't have eyes. So how does a Helper T4 Cell 'recognize' an invading germ?

INFORMATION

1. **Each disease-causing germ has unique chemical markings — like 'bumps' — on its surface.**
2. **Helper T4 Cells have 'receptors' designed to match the chemical markings on the surface of germs.**
3. **For each different type of germ, there exists a different 'brigade' of Helper T4 Cells whose receptors match that germ's chemical markings.**



Objective: To help participants understand how the body recognizes different types of germs.

GUIDELINES

1. **Ask:** How does a Helper T4 Cell, which doesn't have eyes, 'see' an invading germ? Allow participants to express their views. If any participant mentions CD4 receptors, note it on the flip chart sheet, but do not go into any further details yet.

2. **Demonstration:** Ask a volunteer roughly your own height to step forward. Explain that you will represent the Helper T4 Cell, while he or she represents the germ.

3. **Explain** that all germs have certain chemicals on their surfaces. Instruct the volunteer to make two fists and stick them out, one at hip level, and one near the stomach. Tell participants that these represent chemical markings on the germ's surface.

4. Form your hands into open cups in exactly the same positions where the germ player has made fists. **Explain** that the Helper T4 Cell has 'receptors' matching the chemicals on a particular germ's surface, like a key and a lock.

5. **Role play** how the Helper T4 Cell identifies the germ: with eyes closed, and hands in the positions describe at the hips and near the stomach, the Helper T4 Cell and the germ will bump into each other at random until the Helper T4's open fists close around the germ's closed fists.

6. **Explain** that each germ has its own unique chemical markings. For each kind of germ, there exists a kind of Helper T4 Cell with matching receptors. For example, there exists a 'brigade' of Helper T4 Cells whose receptors match the surface markings of, say, malaria, while another would be designed to detect say, TB, or the common cold, or typhoid, and so on.

When a new germ enters the body for the first time, are there already Helper T4 Cells designed to detect it?

Objective: To create an understanding of how the body reacts to new infections.

GUIDELINES

1. **Challenge** participants' understanding by asking them if the human body is fully equipped with Helper T4 Cells to detect every kind of disease. Sample questions:
   - If I have had typhoid, then my body will have typhoid antibodies and Helper T4 Cells designed to detect and fight typhoid in future. What happens when a germ enters the body for the first time? Will the body have Helper T4 Cells and antibodies to detect and fight it?
   - When HIV enters a person's body, are there are already Helper T4 Cells with receptors that fit the chemical markings on HIV's surface?
   - Can a newborn baby's Helper T4 Cells detect any germs? Which germs will a newborn baby be able to detect and fight?

   Allow participants to express their views.

2. **Explain** that when a new germ, such as HIV, infects a person, it takes some time for that person's body to recognize that it is facing a new enemy, and produce Helper T4 Cells and antibodies to detect and fight that particular germ.

3. **Explain** that antibodies are manufactured in 'factories' known as the **lymph glands**, and that Helper T4 Cells are manufactured in the **thymus glands.**

4. **Ask:** Where are lymph glands found? After a discussion, explain that lymph glands are found all over the body, including the **neck, armpits** and **groin.** During sickness, the reason why these parts sometimes swell up and ache a little is because the lymph glands 'factories' are busy producing antibodies.

5. **Explain** that a newborn baby temporarily inherits all his or her mother's antibodies and Helper T4 Cells. These will protect the baby until his or her own immune system develops.

6. If the mother is HIV positive, the child will have her HIV antibodies in all cases. In only 1 out of 15 cases will HIV itself also be present.

INFORMATION

1. **When a new germ infects a person, the human body reacts by creating a new 'brigade' of Helper T4 Cells for detecting that germ, and antibodies for fighting it.**

2. **Helper T4 Cells are produced in the thymus glands.**

3. **Antibodies are produced in the lymph glands, which are found all over the body.**

Can the human body produce antibodies to fight a new disease even before being infected by it?

INFORMATION

1. **During immunization, a weakened form of a germ is introduced into the human body. The germ will be incapable of causing disease, but will stimulate the immune system to develop antibodies against that germ.**

2. **There are no effective vaccines against HIV in the world today. However, many promising vaccine trials are under way.**

Objective: To help participants understand how immunization works.

GUIDELINES

1. **Ask:** Does the human body produce antibodies against a germ only after getting infected? Is there some way that the body can produce antibodies against a disease even before getting infected by it? Note down participants' suggestions on a flip chart sheet.

2. **Explain** that in **immunization**, the body is artificially stimulated to produce antibodies against a germ well before infection happens. This is done by introducing a weakened form of the germ into the body. This germ is incapable of causing disease but gives the immune system an opportunity to identify the new germ and prepare antibodies against it.

3. **Demonstrate:** Ask for a volunteer from the group, and introduce him as a thief who might one day rob your house. Pin the thief's hands behind him, and cover his eyes. In this helpless position, present him to the participants, saying, "Take a good look at this thief. He is helpless to rob you, but now that you've taken a good look at his face, you will recognize him and fight him the next time he tries to enter your house."

4. **Ask** participants if there is a vaccine against HIV. Allow participants to share views. Explain that there is currently no effective vaccine against HIV, though there are several promising vaccine trials going on all over the world. Some may have questions about the Majengo vaccine trials. Share information from the box (*The Majengo Trials: Hope for Kenya?*) alongside.

The Majengo Trials: Hope for Kenya?

The Majengo HIV study began in 1985 when 60 percent of the commercial sex workers in Majengo, a Nairobi slum, tested HIV positive. Five years later, the research team identified a group of prostitutes who remained negative despite having as many as 30 clients per day. That knowledge is now being used to design an experimental vaccine to combat sub-type A of HIV, the most common strain in East Africa. The project is being implemented by the Kenya AIDS Vaccine Initiative (KAVI), working with the US-based International AIDS Vaccine Initiative (IAVI), and researchers from the University of Nairobi, and Oxford University in England.

While ordinary vaccines are designed to stimulate antibodies to disease, this vaccine aims to induce the production of Killer T-cells, which scientists believe are the key to these women's immunity.

Human trials of the vaccine began in Oxford UK in August 2000, while the Kenya trials were to have begun in early 2001. However, the project has been plagued by disputes among the partners and delays in implementation. "The situation now is rather confused," said a senior medic of the University of Nairobi. "KAVI seems to have lost the momentum. . . the vaccine development programme's Nairobi operations seem to be in limbo."

What does HIV do when it enters the body?

Objective: To explain the process of HIV infection.

GUIDELINES

1. **Ask** participants to recall what HIV does when it infects a human being. (**Answer:** It enters the Helper T4 Cell, and leaves a copy of its chemical manual, with instructions on making HIV, in the cell's DNA library.)

2. **Explain** that you will now describe that process in greater detail. **First,** HIV attaches itself to CD4 receptors on the surface of the Helper T4 Cell. **Second,** it punctures the surface of the Helper T4 Cell and enters the cell. **Third,** its outer coat of protein dissolves, leaving a string of chemical instructions on how to manufacture HIV. **Fourth,** such a chemical string is known as RNA, or RiboNucleic Acid. Imagine RNA to be like DNA as it would look in a mirror.

3. HIV's RNA, converted to DNA, now inserts itself within the Helper T4 Cell's DNA library.

4. **Explain:** To understand this, imagine a public library into which someone has added a dangerous book, such as *How to make a Nuclear Bomb*. The book is harmless until the day someone borrows it and begins following the instructions. The result will be a deadly nuclear bomb.

   Similarly, as long as most of the HIV manuals are lying 'unopened' within the Helper T4 Cells, the person is only HIV positive but does not have AIDS.

   Over the years, more and more Helper T4 Cells open the 'manual' and start following its instructions. They become 'factories' manufacturing billions of HIV, which flood into the blood, invading and sabotaging other Helper T4 Cells. The person begins developing AIDS.

5. **Ask** participants to recall the relative sizes of HIV and a White Blood Cell. (**Answer:** HIV = 100 nm; White Blood Cell = 80,000 nm).

INFORMATION

1. **When HIV infects a person's body, it enters the Helper T4 Cell.**

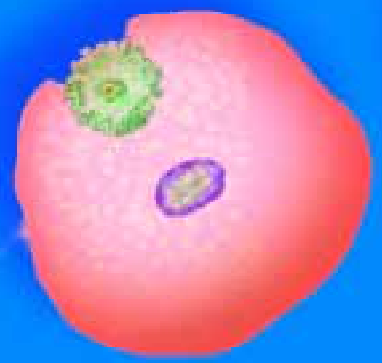
2. **Once inside the Helper T4 Cell, HIV's outer protein shell dissolves, leaving a chemical strand called RNA.**

3. **RNA stands for Ribonucleic Acid. It is a kind of 'manual' containing coded instructions for manufacturing HIV.**

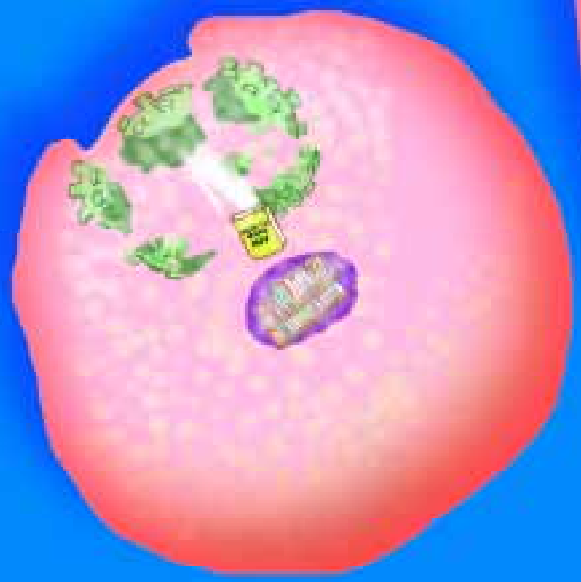
4. **This chemical manual inserts itself into the DNA library of the Helper T4 Cell.**

How HIV causes infection

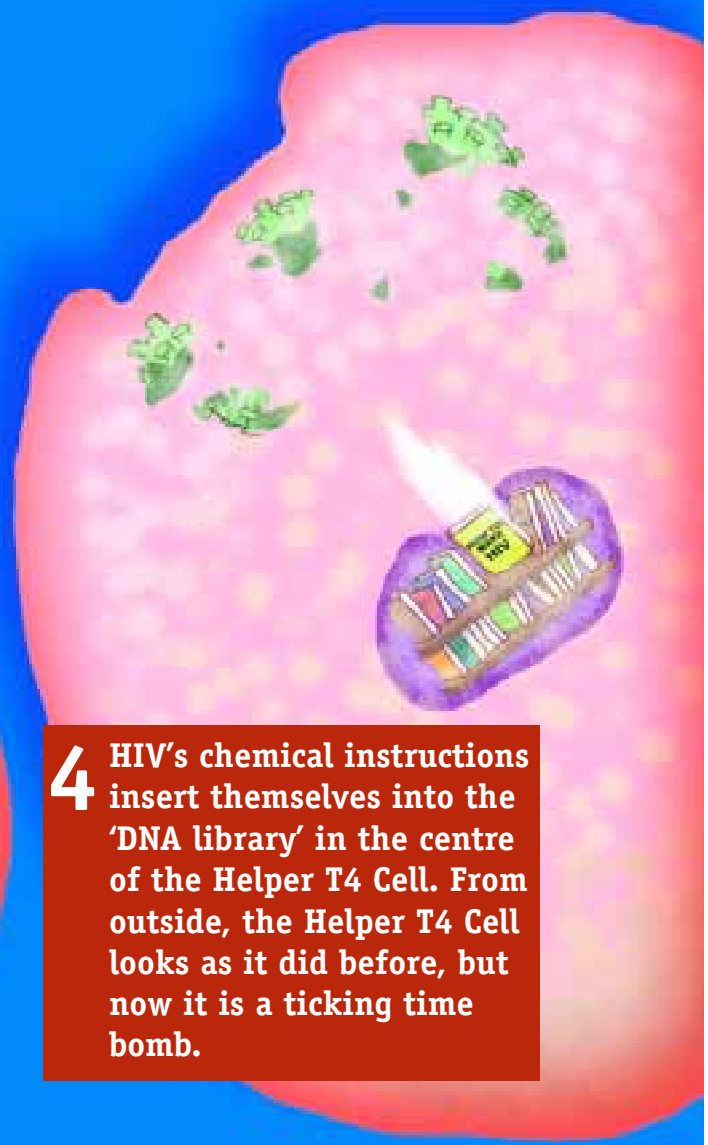
1 HIV attaches itself to the CD4 receptors of the Helper T4 Cell.



2 HIV punctures the Helper T4 Cell and enters it.



3 HIV sheds its outer coat of protein. What remains is a strand of chemical, called RNA, which is like a manual with coded instructions on how to produce HIV.



4 HIV's chemical instructions insert themselves into the 'DNA library' in the centre of the Helper T4 Cell. From outside, the Helper T4 Cell looks as it did before, but now it is a ticking time bomb.

The Immune Game

DG 3

Objective: To understand the process of HIV infection through a role playing simulation.

GUIDELINES

This simulation consists of 6 steps:

1. Setting up
2. Selecting the players
3. Rehearsing the players
4. Enacting the infection process
5. Freezing and reviewing the action
6. Discussion and questions

Setting up

1. **Explain** the following:

- The room in which the session is being held represents a small blood vessel within the vaginal walls. Make sure everyone understands what a blood vessel is.

- The environment outside the room represents the vagina.

- Discuss how the vaginal wall is affected by the friction of sexual intercourse: there will be cuts and abrasions. Will they all be visible? No. The smallest cut can be as small as a few nanometres.

- How big must a cut be for HIV to get through? Participants will recall the size of HIV (100 nanometers). **Point out** that a cut as small as 101 nanometers is sufficient to let in HIV.

- Choose an open door in the room, and define it as a small cut in the vaginal wall. When the door is closed, the vaginal wall is intact. When the door is open, it means that there is a cut, and HIV can enter the body.

Selecting the players

2. **Ask** for volunteers to play the roles of HIV, HIV Antibodies, Lymph Glands, and Helper T4 Cells. There should be a minimum of four to six volunteers for each role.

3. **Hand out** the name placards, and instruct players to wear them around their necks.

Rehearsing the players

4. **Develop** unique and interesting movements for each role.

- **Helper T4 Cells:** These cells should move briskly all over the place, with their hands on their

MATERIALS NEEDED

1. **Placards size 6" x 6" as shown below (4 to 6 sets of each needed).**

HIV

HIV Antibody

Lymph Gland

Helper T4 Cell

foreheads like visors, as though searching for outsiders. Occasionally, one of them should open the door and go outside, representing the fact that Helper T4 Cells are not found only in the blood, but all over the body, including the surface (skin, eyes, nose, etcetera).

- Whenever a Helper T4 Cell is able to clearly read the HIV placard on a player, it should raise an alarm by shouting, "Hatari!! Hatari!!" as loudly as possible.
- Once a Helper T4 Cell is caught by HIV, it will lose the ability to shout, "Hatari!"
- **HIV:** HIV will wait outside the door which represents a cut in the vaginal wall. Whenever the door opens, indicating that a cut has been caused in the vaginal wall, a single HIV should charge in at high speed. HIV should move quickly from point to point, like thieves. They should move in short bursts, freezing from time to time and looking around.
- HIV should sneak up on Helper T4 Cells, and attempt to **catch their shoulders from behind**.
- **Lymph Glands:** These players should stand in a row towards the back of the hall. Standing behind each Lymph Gland should be a number of HIV Antibodies. Each time the Lymph Gland hears the shout "Hatari!", it should release 1 HIV Antibody into the room.
- **HIV Antibody:** HIV Antibodies will march with energy, speed and power, like soldiers. Their objective is to find HIVs. As soon as an HIV Antibody finds an HIV, it **should grip its hands, thus paralyzing it**.

Enacting the infection process

5. Rehearse the different players in their movements in groups once or twice. When you feel they are somewhat comfortable, conduct a full-scale enactment featuring all the players together. The facilitator's position will be near the door, opening and shutting it quickly from time to time, to let an HIV enter into the action, or letting out a Helper T4 Cell. When a Helper T4 Cell goes out, it will return with an HIV on its back.

6. Repeat the enactment a couple of times, asking for greater energy and enthusiasm until everyone is well engaged. At a suitable point, shout ,"**Freeze!"** and ask everyone to freeze where they are.

Reviewing the action

7. Go around the room, and count the number of HIVs and Helper T4 Cells that are still single; the number of HIVs that have caught Helper T4 Cells by the shoulders; and the number of HIV Antibodies that have successfully immobilized HIVs.

Discussion and questions

8. **Explain** that as in the game, in a real infection there are likely to be the same three conditions in the blood at any point soon after infection:

   1. Some HIVs will have infected some Helper T4 Cells. These cells will continue to look normal from outside, but one day will turn into factories for manufacturing HIV.
   2. Some HIVs will have been immobilized by HIV Antibodies. These HIVs are effectively dead, and cannot infect anything any more.
   3. Most Helper T4 Cells will be uninfected and doing their duties as they should.
   4. Many HIVs will be in the blood, looking for Helper T4 Cells to invade.

How can a person know if he or she is infected with HIV?

Objective: To create an understanding that HIV infection has no particular symptoms and can only be detected by a test at the right time.

GUIDELINES

1. **Ask:** How can a person know if he or she is infected with HIV? Are there are any symptoms specific to HIV infection? If yes, then what are they? Note all suggestions on a flip chart sheet without saying if they are right or wrong. Answers you could expect include: fever, persistent cough, body ache, swelling of glands along neck and armpits, and diarrhea.

2. **Explain** that there are no specific and unique symptoms for HIV infection. It is also not possible to detect HIV infection just by the way a person looks. A swelling of lymph glands along the neck or armpits indicates that the body is producing antibodies against *some* infection, and does not specifically mean HIV infection has happened. However, some persons briefly develop flu-like symptoms a few days to a few weeks after HIV infection.

3. The only way to detect HIV infection is by doing an HIV test, which should include counseling before and after the test. Most commonly used HIV tests look for HIV antibodies in the blood sample. It is assumed that in most cases a person who has HIV antibodies will also have HIV.

4. A person who has practiced high-risk behavior should consider going for an HIV test, whether or not he or she develops flu-like symptoms.

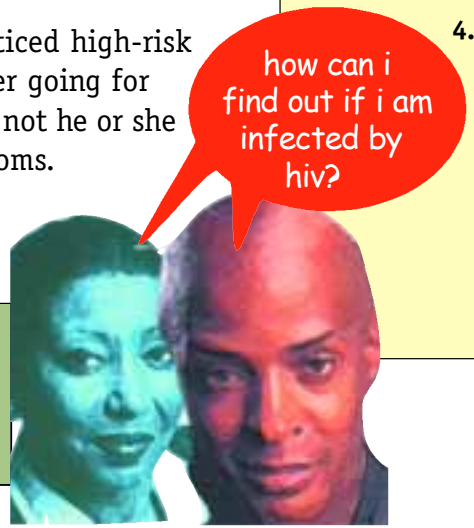
INFORMATION

1. **HIV infection cannot be detected by the way a person looks. There are also no symptoms specific and unique to HIV infection.**

2. **Some people briefly develop some flu-like symptoms a few days to a few weeks after infection by HIV.**

3. **The only way to detect HIV infection is a proper HIV test, which should include counseling before and after the test.**

4. **A person who has recently practiced high risk behavior should consider going for an HIV test, whether or not he or she develops flu-like symptoms.**



The most common tests for HIV are based on detecting the presence of HIV antibodies in a blood sample. It is assumed that if HIV antibodies are present, HIV itself must also be present. **Important**: With most people it can take upto 18 weeks before their blood has enough HIV antibodies to be detected by a blood test, even though HIV will be present. Thus a test taken too soon after infection could give a **false negative** result. That is, the test may indicate that the person is not infected even though the virus may be present.

Can a person have HIV antibodies in the blood but no HIV?

INFORMATION

1. **A mother's placenta protects the fetus from most toxins and germs by filtering them out. It allows nutrients and antibodies from the mother to pass to the fetus.**

2. **An HIV positive mother will always pass on her HIV antibodies to her newborn child. However, in only 1 case out of 15 will the HIV pass to the fetus within the uterus.**

3. **A newborn infant can also get infected by HIV during birth, and after birth through infected breast milk.**

Objective: To create an understanding of the process of mother-to-child transmission of HIV.

GUIDELINES

1. **Ask:** Can a person have HIV antibodies but no HIV itself? What sort of person could have the HIV antibody without having HIV? Allow participants to discuss possibilities. (**Answer:** A newborn infant from an HIV positive mother.)

2. **Explain:** A newborn baby from an HIV positive mother will always have the mother's HIV antibodies, but in only 1 case out of 15 will it be infected with the mother's HIV during pregnancy.

   The fetus is very well protected while in the mother's uterus, by a membrane called the **placenta**. The placenta allows nutrients and other beneficial substances to pass from the mother to the fetus, but blocks most germs and toxins. Thus, if the mother is HIV positive, the fetus will automatically acquire her HIV antibodies.

   In 1 case out of 15, the virus will pass from the mother's blood into the child's blood during pregnancy.

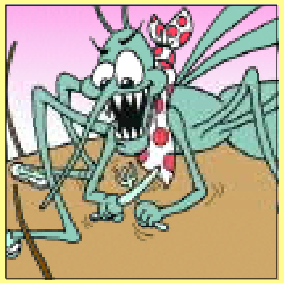
3. The mother's HIV antibodies will last in the child's blood for about 15 months and then disappear as the child's immune system begins producing its own antibodies. If the child has no HIV, then its blood will have no HIV antibodies after this period.

4. A newborn infant can also get infected by HIV during birth, and after birth through infected breast milk.

DISCUSSION GUIDE

Understanding how HIV is transmitted

4



Where in the body is HIV found?

INFORMATION

1. **HIV is most commonly found in blood and semen.**
2. **HIV is present in vaginal secretions and breast milk in sufficient quantities to cause infection.**
3. **HIV is seldom found in saliva, tears and urine.**
4. **Until today, HIV has never been found in sweat.**

Objective: To create an understanding of body fluids, and also which ones may contain HIV.

GUIDELINES

1. **Ask:** Where in the body would you expect to find HIV? Note answers on a flip chart sheet without comment. If a participant says **body fluids**, ask for a list of body fluids. If the phrase 'body fluids' does not come up, then introduce the phrase. The list may include –

   - Semen
   - Saliva
   - Blood
   - Vaginal secretions
   - Sweat
   - Tears
   - Breast milk
   - Spinal fluid
   - Mucus
   - Pus
   - Amniotic fluid
   - Urine

   Ask participants what the difference is between sperm and semen. (**Answer:** Semen is like the water in a swimming pool; sperm is the swimmer.)

2. **Ask** if HIV is equally present in all these body fluids. Allow opinions to emerge.

3. **Explain** that the understanding of where HIV is found has been growing and changing over the years, and will continue to do so. A good facilitator should always be sure to say, "**Until today**, HIV has been found or not been found in. . ."

4. **Explain** that HIV is found in greater or lesser numbers in different fluids, and it is important to choose words with care while replying.

   HIV is **most commonly found** in blood and semen.

   HIV is present in vaginal secretions and breast milk in **sufficient quantities to cause infection.**

   HIV is **seldom found** in saliva, tears and urine.

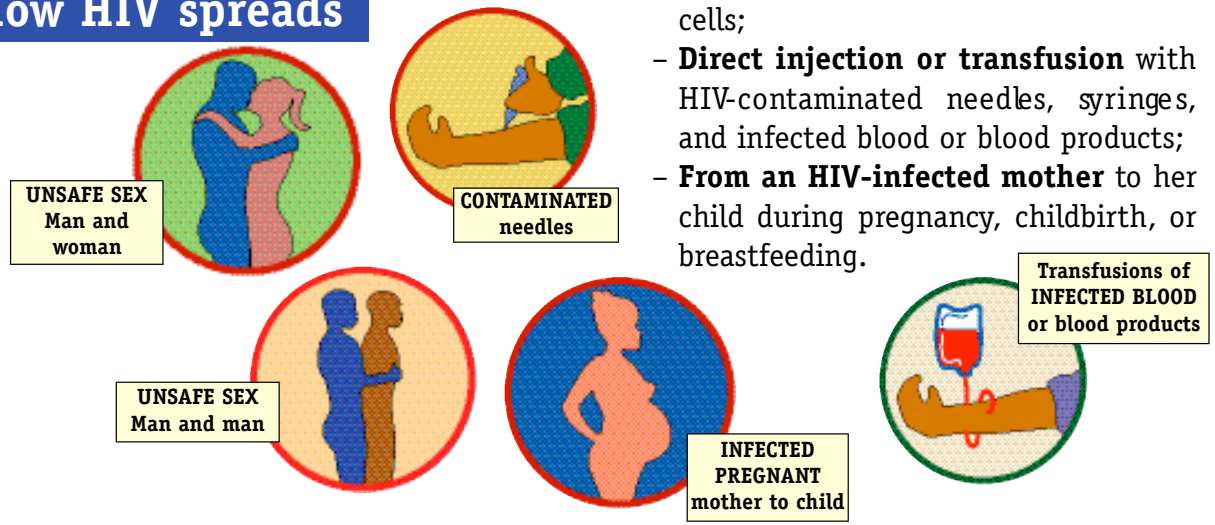
   Until today, HIV has **never been found** in sweat.

What are the main modes of HIV transmission from person to person?

INFORMATION

1. **The three main modes of HIV transmission are:**
   - **Unprotected sexual intercourse with an HIV infected person;**
   - **Direct injection or transfusion with HIV-contaminated syringes, needles, blood or blood products;**
   - **From an HIV-infected mother to her child during pregnancy, childbirth or breast feeding.**

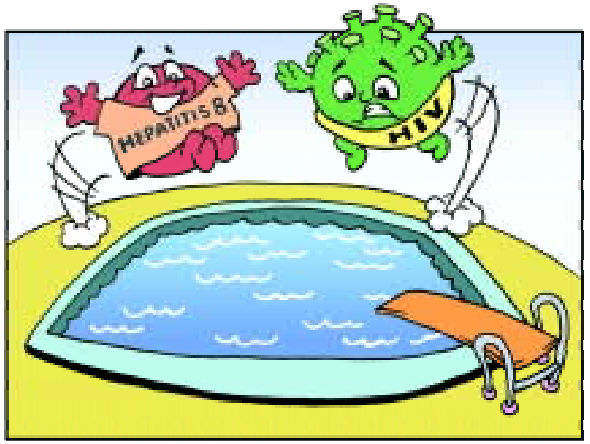
How HIV spreads



Objective: To create an understanding of the three major modes of HIV transmission.

GUIDELINES

1. The three major routes of transmission of HIV are:
   - **Unprotected sexual intercourse with an HIV infected person**, when semen or vaginal secretions containing the virus come into contact with the soft internal surfaces of the vagina, anus or penis. Sometimes there are very small tears and cuts on these surfaces, which give HIV a chance to mix with the blood or attach itself to white blood cells;
   - **Direct injection or transfusion** with HIV-contaminated needles, syringes, and infected blood or blood products;
   - **From an HIV-infected mother** to her child during pregnancy, childbirth, or breastfeeding.



WHAT'S MORE INFECTIOUS THAN HIV?

If 1 ml of blood carrying the Hepatitis B virus were mixed with 24,000 gallons of water, and if 1 ml of that solution were injected into an individual, there is a nearly 100 percent chance of that person developing Hepatitis B.

In contrast, if 1 ml of blood containing HIV were dropped into 1 quart of water, and if 1 ml of that solution were injected into an individual, there is only a 10 percent chance of that person developing HIV infection.

How can you tell whether a person is infected with HIV?

INFORMATION

1. **There are no distinct symptoms that are unique to HIV infection. However, 70 percent of infected people go through a brief period of flu-like illness between two and eight weeks after HIV infection. The illness goes away by itself.**

2. **A person should consider going for VCT if he or she has been in a high-risk situation recently, whether or not that person has experienced flu-like symptoms.**

Objective: To help participants understand that HIV infection has no unique or distinct symptoms.

GUIDELINES

1. **Ask:** How can you tell whether a person is infected with HIV? What, if any, are the symptoms? Allow answers to emerge and record them on a flip chart sheet.

2. **Explain:** There are no distinct symptoms that are unique to HIV infection. However, 70 percent of infected people go through a brief period of flu-like illness anywhere between two and eight weeks after HIV infection. The illness goes away by itself.

3. **Ask:** When should a person consider going for an HIV test with counseling (known as **VCT**, or **Voluntary Counseling and Testing**)? Allow participants to express their opinions.

4. **Explain:** If a person has recently been in a high-risk situation (such as unprotected sexual intercourse with a person of unknown HIV status, an injection from an improperly sterilized syringe, or a transfusion of untested blood or blood products), then that person should consider going for VCT, whether or not that person has had a flu-like illness.

What is the difference between exposure to HIV and infection by HIV?

Objective: To create a clear understanding of the difference between **exposure** to HIV and **infection** by HIV.

GUIDELINES

1. **Ask:** What is the difference between exposure to HIV and infection by HIV? Let participants express their opinions.

2. **Ask:** When one member of a household is infected by the common cold, does it mean that everyone in the house will get infected by the cold virus? Use this discussion to make the point that **when a family member has a cold, everyone is exposed, but not everyone will get infected.**

3. **Explain** the difference between exposure and infection by using other examples.
   - If a soldier steps out of his trench on to the battlefield, then he is **exposed**. However, he may not be **shot** unless there are enemy soldiers who can see him, and decide to shoot at him.
   - Ask participants to cite other examples.

4. **Ask:** When is a person exposed to HIV? Allow participants to discuss their views. (**Answer:** For example, a person may be exposed to HIV when he or she has unprotected sexual intercourse with a person of unknown HIV status.)

5. **Ask:** How can you tell whether a person has been exposed to HIV? Allow participants to discuss their views. (**Answer:** It is not possible to tell by a person's looks whether he or she has been exposed to HIV.)

6. **Ask:** What is the interval between exposure to HIV and infection by HIV? Allow participants to discuss views. (**Answer:** There is no 'interval'. When a person is exposed, he or she is either infected at the same time, or not infected at all.)

7. **Ask:** Why should a person know the difference between exposure and infection? (**Answer:** The surviving partner of someone who has died of AIDS has been exposed, but may not be infected. Knowing this can help prevent needless stigma. Many people who are exposed wrongly assume they are infected.)

INFORMATION

1. **A person may be exposed to HIV when he or she has unprotected sexual intercourse with someone of unknown HIV status.**

2. **Being exposed to HIV does not mean the person is infected. Only proper testing for HIV can reveal whether a person is infected or not.**

3. **If exposure is assumed to mean infection, it can lead to needless stigmatization and wasted lives.**

Which is the most efficient mode of transmission of HIV?

CAUTION: This page should be omitted with groups of low literacy.

INFORMATION

1. **The most efficient mode of HIV transmission is a transfusion of infected blood or blood products. The efficiency is over 90 percent.**

2. **HIV transmission through unprotected sexual intercourse has an efficiency of less than 1 percent.**

3. **However, 70–80 percent of HIV infections worldwide are caused by unprotected sexual intercourse, because this is much more common among human beings than blood transfusions.**

Exposure	Efficiency	% of total
Blood transfusion or blood products	Over 90 percent	5–10 percent
From infected mother to child during pregnancy, childbirth or breastfeeding	25–40 percent	2–3 percent
Unprotected sexual intercourse with an infected person	0.1–1 percent	70–80 percent
Injection with needles carrying infected blood	0.5–1 percent	5–10 percent

Objective: To create an understanding of the commonest mode of HIV transmission.

GUIDELINES

1. **Ask:** Which is the most efficient mode of transmission of HIV? Be aware that many participants may not understand the term 'efficient' well. Allow a brief discussion.

2. **Explain:** When a person receives a transfusion of HIV contaminated blood, there is a nearly 100 percent chance of the virus directly entering the bloodstream. Researchers say that the transmission of HIV through blood transfusion or blood products is over 90 percent efficient.

3. **Ask:** What is the efficiency of HIV transmission through unprotected sexual intercourse with an infected person? Allow discussion for a few minutes.

4. **Explain:** Based on studies of HIV positive individuals who have been living and having sex with uninfected partners, the current **efficiency** of HIV transmission through a single act of unprotected sexual intercourse appears to be about 1 in 580. This can be understood as meaning: infection is likely to occur in 1 out 580 acts of unprotected sexual intercourse between discordant couples.

5. **Ask:** Does this mean that unprotected sexual intercourse is not as risky as believed? Allow a brief discussion and then **explain** that unprotected sexual intercourse is responsible for 70 to 80 percent of HIV infections worldwide, even though it is less than 1 percent efficient. Blood transfusions account for only 5 to 10 percent of worldwide HIV infections.

6. **Explain** that every act of unprotected sexual intercourse carries the same risk of infection. No act of unprotected sexual intercourse is safer than another. Give the example of a revolver with only one bullet and five empty chambers. Any of the next six shots could be fatal. Would any participant be willing to volunteer to take the next shot?

Which is the most common mode of HIV transmission?

Objective: To create an understanding of the commonest mode of HIV transmission.

GUIDELINES

1. **Ask:** Which is the most common mode of HIV transmission? Allow participants to share their perceptions and list them on a flip chart sheet.

2. **Ask:** Which is the least common of the three major modes of HIV transmission? Allow participants to share their perceptions and list them on a flip chart sheet.

3. **Explain** that a transfusion of contaminated blood or blood products is the least common of the major modes of transmission worldwide. Only about **5 to 10 percent** of HIV infections in the world have been caused by this.

4. **Explain** that **70 to 80 percent** of HIV infections worldwide have been caused by unprotected vaginal or anal sexual intercourse between individuals.

5. **Ask:** Why is infection through transfusions of infected blood or blood products so rare? (**Answer:** Because very few people have blood transfusions compared to those who have sexual intercourse.)

6. **Ask:** Why is infection through unprotected vaginal and anal sexual intercourse between individuals so common? (**Answer:** Because sexual intercourse is one of the most popular pastimes among human beings.)

7. **Explain** that about **2 to 3 percent** of all HIV infections worldwide come from infected mother to child during pregnancy, childbirth or breastfeeding.

8. **Explain** that about **5 to 10 percent** of HIV infections worldwide come from injection from needles and syringes carrying infected blood.

INFORMATION

1. **About 70-80 percent of HIV infections worldwide have been caused by unprotected vaginal or anal sexual intercourse.**

2. **About 5-10 percent of HIV infections worldwide have been caused by transfusions of contaminated blood or blood products; 2-3 percent are from infected mother to child during pregnancy, childbirth or breastfeeding; and about 5-10 percent are from injections with needles carrying infected blood.**

Exposure	% of total
Blood transfusion or blood products	5–10 percent
From infected mother to child during pregnancy, childbirth or breastfeeding	2–3 percent
Unprotected sexual intercourse with an infected person	70–80 percent
Injection with needles carrying infected blood	5–10 percent

Can you get infected if only one HIV particle enters your body?

INFORMATION

1. **It takes about 1,000 HIV particles to cause an infection in a laboratory setting. This is known as one 'infective dose'.**

2. **It takes at least 15 infective doses, or about 15,000 HIV particles, to make a person HIV positive.**

3. **A single very small drop of blood from an infected person could contain as many as 4.2 million HIV particles.**

Objective: To create an understanding of the **infective dose**.

GUIDELINES

1. **Ask:** Can you get infected if only one HIV particle enters your body? Allow participants to share their perceptions.

2. **Explain:** A single virus cannot cause HIV infection in a person. Moreover, it is very unlikely that a single virus would ever enter your body. A study in 1989 established that just one pint of blood from an HIV positive person could have about two billion HIV particles — or about 4.2 million HIV particles in a very small drop.

3. **Explain:** It has been found that it takes about 1,000 HIV particles to establish an infection in a laboratory setting. This is called an **infective dose**. In real life, when a person has unprotected sexual intercourse with an infected person, several hundred thousand infective doses of HIV can easily enter that person's body through small breaks in the skin, mucous membranes, open wounds or other tissue.

4. **Explain:** It takes a mere 15 infective doses (or about 15,000 viruses) to make a person HIV positive.

Can a person get HIV infection from a mosquito bite?

Objective: To create an understanding of the reasons why mosquitoes cannot spread HIV.

GUIDELINES

1. **Ask:** Can a person get HIV from a mosquito bite? Let participants share their opinions. Challenge them by asking why mosquitoes can spread malaria but not HIV.

2. **Explain:** When mosquitoes bite someone, they do not inject their own blood or previously bitten person's blood into the next person. Rather, they use their saliva as a lubricant so that the insect can suck blood efficiently. Diseases like yellow fever and malaria are transmitted through the saliva of specific types of mosquitoes.

3. **Explain:** HIV lives for only a short time inside a mosquito, and does not reproduce or survive inside them. A study conducted by Jerome Goddard in 1997 showed that HIV gets digested before it can escape from the mosquito's stomach, reproduce itself and somehow find its way into the saliva of the insect.

4. **Explain:** In 1989, some scientists injected HIV directly into the abdomen of bedbugs and the chest of mosquitoes to see how they would fare if they could avoid getting digested in the stomach. Even when given such an opportunity, HIV could not survive and pass from the mosquito to a human being.

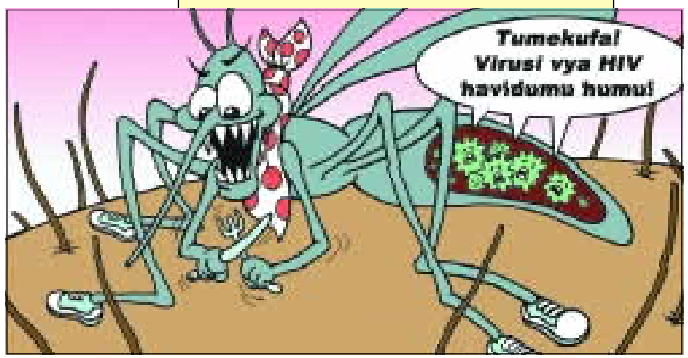
5. **Explain**: If HIV were transmitted through insect bites, we should expect to see many more cases of infection within families where one person had HIV. This has never been the case. In a study of household contacts of AIDS patients conducted at Kinshasa, Democratic Republic of Congo, in a settlement where insect bites were common, not a single child over age 1 had become infected with HIV, while more than 60 percent of the spouses of the AIDS patients had become infected. If mosquitoes could transmit the virus, the infection should have spread to children in the community as well.

INFORMATION

1. **When mosquitoes bite someone they do not inject the blood of the previously bitten person into the next person. They use their saliva as a lubricant. Diseases like malaria are spread through mosquito saliva.**

2. **HIV gets digested in the mosquito's stomach before it can find its way to the saliva.**

3. **In a mosquito-infested village in Kinshasa, Democratic Republic of Congo, not a single child over age 1 had become infected with HIV while more than 60 per cent of the spouses of AIDS patients had become infected. If mosquitoes spread HIV, even children would have become infected.**



Can HIV spread through an exchange of saliva during kissing?

INFORMATION

1. **Human saliva contains a chemical which prevents HIV from infecting human cells even inside a test tube.**

2. **When there is blood, semen or breast milk mixed with the saliva, they protect HIV from being affected by the saliva and make infection possible. This is why HIV infection can occur through breastfeeding or oral sex.**

3. **There has so far been only one documented case of HIV infection through deep kissing. However, even in this one case, transmission through saliva cannot be proven as both people had serious gum disease and ulcers in their mouths, and blood was mixed with their saliva.**

Objective: To increase understanding of why HIV does not spread through kissing.

GUIDELINES

1. **Ask:** Can HIV spread through an exchange of saliva, as in kissing? Allow participants to share their opinions. Provoke the discussion by asking them to remember how commonly HIV is found in saliva. (**Answer:** HIV is seldom found in saliva and tears.)

2. **Explain:** Studies in 1990 and 1991 showed that human saliva contains a chemical that prevents HIV from being infectious. In 1998, lab tests found a chemical called **thrombospondin**, which is concentrated in saliva, and which prevented HIV from infecting human cells even inside a test tube.

   Saliva does not protect people during oral sex or breastfeeding because when blood, semen or breast milk are present in saliva, they protect HIV from being affected by saliva. In such cases, HIV infection can occur, not because of saliva, but because of blood, semen, or breast milk in saliva.

3. **Explain:** There has been only one verified case of HIV transmission by deep kissing. The case was reported to the Centers for Disease Control (CDC) in the USA in 1994-95. The man had been infected by HIV through an injection needle earlier. Both he and his female partner had serious gum disease. His gums bled routinely whenever he brushed his teeth. Investigators at the CDC believe that the HIV was transmitted when blood within the man's mouth came into contact with open sores in the woman's mouth. **Even in this single case of transmission via deep kissing, the role of saliva in HIV transmission cannot be proven.**

Can a person get infected by HIV while handling the body of a person who has died of AIDS?

Objective: To create an understanding of how fragile HIV is.

GUIDELINES

1. **Ask:** Can a person get infected while washing the body of a person who has died of AIDS? Allow participants to express their views. Stimulate the discussion by asking:
   1. How long can the virus survive in a dead person's body?
   2. How long can the virus survive at the freezing temperature of a municipal morgue?

2. **Explain:** HIV is sometimes wrongly described as a fragile virus that perishes easily. Some people believe that HIV cannot survive outside the human body, or that it needs to be in a fluid like blood where there are white blood cells, or that it dies in contact with air. All these are now known to be incorrect; HIV is much more durable than previously believed.

   – HIV can survive 7 days storage at room temperature, and 11 days at 37°C (1995 study).

   – The virus can remain active and infectious for between 6 and 14 days even in a body that has been refrigerated in a morgue.

   – HIV remains active for up to 5 days in dried blood, although the number of virus particles drops dramatically.

   – It is dangerous to assume that there is no HIV in dried blood or stored body fluids from an HIV or AIDS patient. In 1999, a study reported that HIV recovered in the blood from used syringes can remain active up to at least 4 weeks.

   – HIV is destroyed after 10 minutes at 56°C.

3. **Explain:** There are no documented cases of a person getting infected by HIV while handling the body of a person who has died of AIDS. However, this does not mean that the risk is zero.

INFORMATION

1. **HIV can survive 7 days storage at room temperature, and 11 days at 37°C.**
2. **The virus can remain active and infectious for between 6 and 14 days even in a body that has been refrigerated in a morgue.**
3. **HIV remains active for up to 5 days in dried blood, although the number of virus particles drops dramatically.**
4. **HIV recovered in the blood from used syringes can remain active up to at least 4 weeks.**
5. **HIV is destroyed after 10 minutes at 56°C.**

What is the Window Period?

INFORMATION

1. **Most common HIV tests do not detect HIV but the HIV antibodies produced by the human immune system. It is assumed that if a person has the HIV antibody, then the virus itself must be present.**

2. **It can take as little as 6 weeks and as many as 18 weeks before the body has enough HIV antibodies to be detected by an HIV test. Until this time, tests will give a false negative result.**

3. **The period between infection by HIV and the presence of enough HIV antibodies to be detected by an HIV test is known as the Window Period.**

4. **Between 56 per cent and 92 percent of HIV infections are believed to be transmitted during the Window Period.**

Objective: To create an understanding of the interval between HIV infection and the presence of detectable HIV antibodies in the blood.

GUIDELINES

1. **Ask:** If a person gets infected by HIV today, and goes for an HIV test tomorrow, will the test be negative or positive? If anyone answers, "negative," probe why they think it will be negative.

2. **Explain:** Most common tests for HIV do not detect HIV directly but rather detect the antibodies that are produced by the immune system after HIV infection. It is assumed that if a person has HIV antibodies, then the virus itself must be present.

   However, it can take **from as little as 6 weeks to as many as 18 weeks** before the immune system produces enough HIV antibodies to be detected by an HIV test. This interval, when the person is HIV positive but does not yet have detectable antibodies, is known as the **Window Period.** Between 56 percent and 92 percent of infections are believed to occur during the Window Period.

3. **Ask:** If a person gets infected by HIV today, can he or she infect other people immediately? Allow participants to express their views.

4. **Explain:** A person can infect others as soon as he or she is infected, even though the HIV test will only give a positive result after the Window Period.

5. **Ask:** What could be the result if a person goes for an HIV test too early and gets a false negative result, but does not go for a second test? Let participants express their views.

6. **Explain:** A person who has taken an HIV test without counseling before and after may not realize the importance of a second test after the Window Period. Such a person may feel a false sense of security, and may infect others through carelessness.

What kinds of HIV tests are available in Kenya?

INFORMATION

1. **Within the Kenya IMPACT project currently, simple, rapid, approved HIV antibody tests are used. The test results are usually ready within 30 minutes.**
   - **Two separate HIV antibody tests are done in parallel.**
   - **Two blood samples are drawn from fingerpricks for these tests.**
   - **If both tests are positive, the result is taken as final.**
   - **If the two tests show different results, and there has not been any recent risk behavior, then the result is taken as final.**
   - **If both tests show a negative result, and there has been recent risk behavior, then the client is asked to return for a second test after the Window Period.**
   - **If both tests show discordant results, then the blood samples are sent for an ELISA test, either within the same testing centre or elsewhere. In such a case, the result may not be given out on the same day.**

Objective: To create an understanding of currently available tests and testing procedures.

GUIDELINES

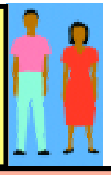
1. **Ask:** What kind of HIV tests are currently available within the Kenya IMPACT project? Invite participants who have first hand experience or knowledge of VCT procedures to share them.

2. **Explain:** Within the IMPACT project, the following procedures are followed for VCT :
   - All tests are preceded by counseling, and followed by counseling.
   - Simple, rapid HIV antibody tests are used. The test result is usually ready within 30 minutes.
   - Two separate HIV antibody tests are done in parallel
   - **Two** blood samples are drawn from fingers for these tests.
   - If both tests show a positive result, then the result is taken as final.
   - If both tests show a negative result, and there has not been any recent risk behavior, then the result is taken as final.
   - If both tests show a negative result, and there **has** been recent risk behavior, then the client is asked to return for a second test after the Window Period.
   - If the two tests show different results, then the blood samples are sent for an ELISA test, either within the same testing center or elsewhere. In such a case, the result may not be given out on the same day.
   - The process is entirely confidential. The client will not be named, nor given a certificate with his or her HIV status on it.

Understanding the Window Period

EXPOSED!

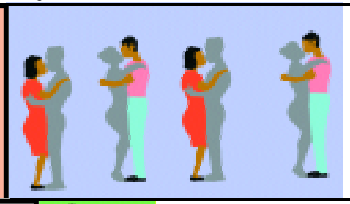
One of them is HIV positive and has exposed the other one to HIV.



One of them is infected with HIV. Now the other person has been exposed to HIV through unprotected sexual intercourse, and could be infected. If that person goes for VCT now, the test will show a **false negative,** even though the person may be infected.

WINDOW PERIOD

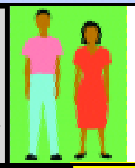
Can be as little as 6 weeks or as many as 18 weeks. An ELISA test in this period will show a false negative



Unaware that they may be infected with HIV, they could infect many others through casual sex in the Window Period. At the end of the Window Period, there will be enough HIV antibodies in the blood to be detected by a test.

HIV+

They both test positive for HIV. Their blood has enough antibodies to be detected by an HIV antibody test.

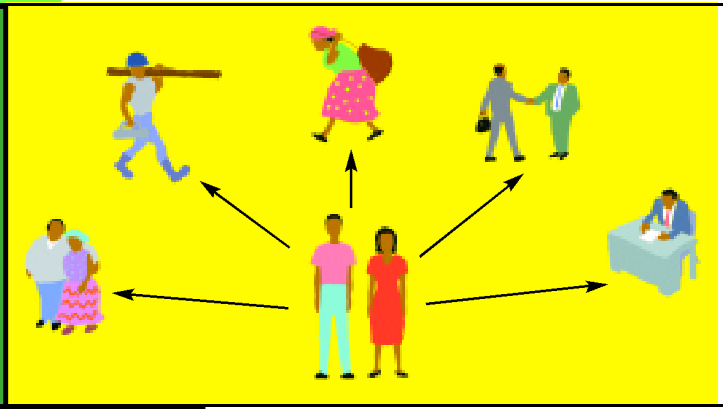


Though both of them have tested HIV positive, with proper counseling, the two people may learn to cope positively with their infection.

LIVING WITH HIV

(2 to 15 years)

Though they have HIV, they can live without symptoms or illness for as long as 15 years by paying attention to their mental and physical health and nutrition. Must take care not to infect others.



People wrongly believe that HIV is AIDS, and lose hope. But a person can decide to improve his or her chances of staying alive for a very long time even with HIV infection by paying attention to health. This can become a time of greater closeness and caring with loved ones, as well as a time to work hard, be productive and plan for the future.

AIDS

Their immune systems begin to collapse, causing various infections and diseases which will lead to death.

There is no vaccine against HIV infection and no cure for AIDS. But a person who copes with HIV infection with hope, strength, optimism and courage can live life with new meaning, and die with dignity.

DISCUSSION GUIDE

5

Living with HIV

What might a person feel after testing positive for HIV?

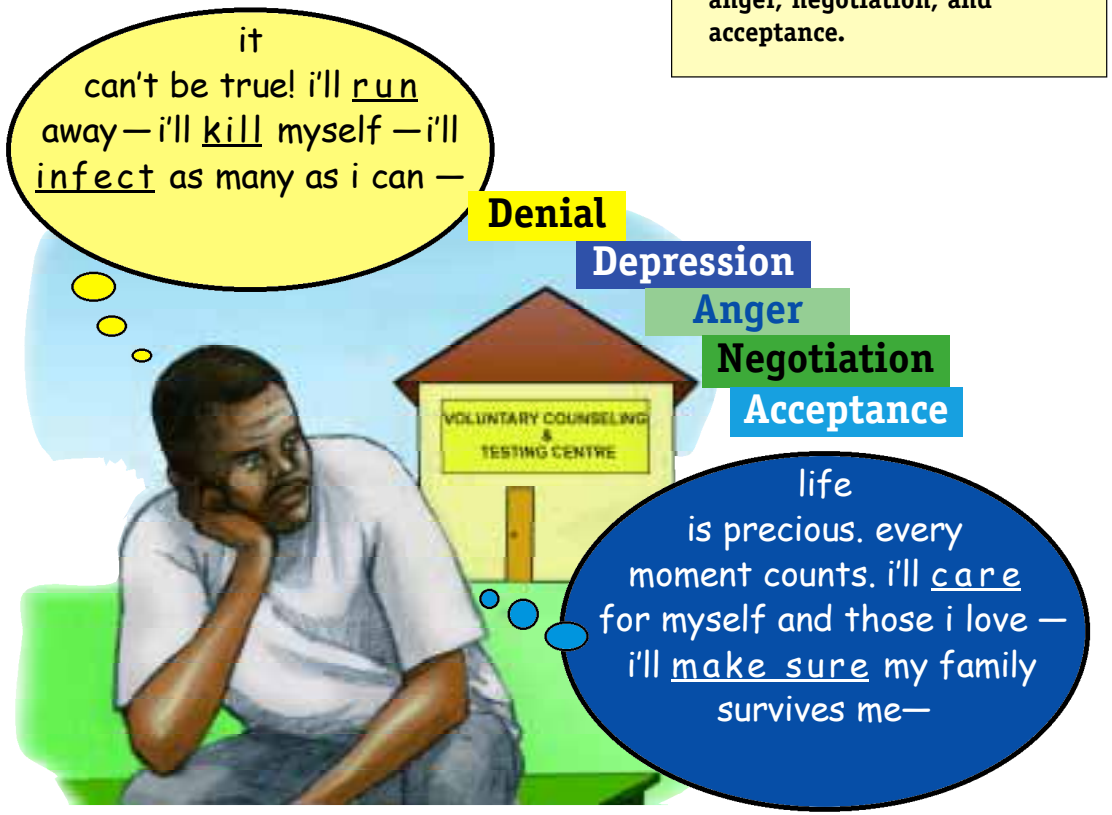
Objective: To create an understanding of how people might cope with the news that they are infected with HIV.

GUIDELINES

1. **Ask:** What are a person's feelings after testing HIV positive? Ask participants to share their experiences and observations of the reactions and feelings of people who have tested positive. List them on a flip chart sheet. Typical comments include:
   - Shock
   - Depression
   - Anger
   - Wanting to take revenge
   - Guilt
   - Shame

2. **Explain:** Studies of reactions of people who have learned that they have an incurable, fatal condition have revealed five common stages:
   1. Denial
   2. Depression
   3. Anger
   4. Negotiation
   5. Acceptance

3. **Ask** participants to share stories that demonstrate how individuals behave when they are in denial, or depressed, or angry, or are negotiating, or have accepted the condition of being HIV positive.



INFORMATION

1. **People who have been told that they have a fatal, incurable condition (such as cancer or HIV) have been known to pass through at least five emotional stages: denial, depression, anger, negotiation, and acceptance.**

Is denial always the first reaction of a person who has tested HIV positive?

Objective: To create an understanding that different people have different **coping mechanisms** after they learn that they are HIV positive.

GUIDELINES

1. **Ask:** Is the first reaction of a person to testing HIV positive always denial? Let participants share their views.

2. **Explain:** Reactions vary from person to person. Some deny the test results and continue life as though nothing were wrong. Some go into deep depression. Others react with anger. And so on.

3. **Ask:** If a person is in denial, is it the duty of a counselor or friend to force them to accept the test result? Is it wrong to deny the test result? Allow participants to discuss their opinions.

4. **Explain:** Denial, depression and other reactions to testing HIV positive are called **coping mechanisms**. By denying that he or she is HIV positive, a persons gains some time to digest the information and slowly come to terms with it. A trained and skillful counselor can help a person gradually move from denial to acceptance.

5. **Ask:** What behavior is implied by 'negotiation'? Let participants share views.

6. **Explain:** In negotiation, the person usually tries to bargain with God to add a few more days to his or her life, in return for being more devout, doing good deeds, being 'born again', undertaking service to the church, and so on.

7. **Ask:** What sort of behavior is implied by 'acceptance'? Let participants share views.

8. **Explain:** In acceptance, a person comes to terms with the fact that he or she has a virus that will finally kill him or her. Instead of adding more days to life, that person tries to add more life to his or her days through more positive, constructive living.

Acceptance means adding more life to your days rather than trying to add more days to your life.

INFORMATION

1. **Denial, depression, anger and negotiation are normal human coping mechanisms for dealing with news of an incurable and fatal condition.**

2. **With skilful continuing counseling, a person may get over these stages and finally learn to accept his or her condition and make the best of the remaining years.**

Touching feelings.

Objective: To use role play to help participants understand the range of changing emotions that an HIV positive person may go through.

GUIDELINES

1. **Tell** participants that you are going to use role play to explore the emotional changes of a person as he or she slowly copes with the news of being HIV positive. Ask participants to suggest a name for this person.

2. **Select** a row of 10 participants, and explain that each of them represent the same person in different stages of coping with being HIV positive.

3. **Demonstrate:** Using the drawing below as a guide, move from participant to participant, letting each one represent a new emotional stage in the person's process of coping with HIV infection. Explain the way in which feelings and emotions can fluctuate over time between denial, anger, depression, negotiation and acceptance.

4. **Explain:** Describe each of these emotional states.

Denial: Refusal to accept the result. Asking for a re-test, refusing to talk about it, or telling themselves and others that it is a mistake.

Depression: Going into seclusion, feeling sad. Behaving as though they have opted out of life.

Anger: Blaming other people for the infection. Some persons could become vindictive, trying to infect others.

Negotiation: Bargaining with God, pleading for more time alive in return for living a model life.

Acceptance: Coming to terms with being HIV positive — and deciding to make the best use of the time left by living with hope, love, and courage.

What would happen if a person took an HIV test without counseling before and afterwards?

Objective: To create an understanding of the role of Voluntary Counseling and Testing (VCT) in an individual's ability to cope with the result of an HIV test.

GUIDELINES

1. **Ask:** What would happen if a person took an HIV test without counseling before and after? Allow participants to express their views on this.

2. **Explain:** Without pre- and post-test counseling, a person may not be prepared for the difficult emotions that he or she may experience if he or she tests positive, and may do harm to himself or herself or others while feeling depressed, angry, or disturbed. Similarly, testing negative will produce different emotions, and will require appropriate counselling.

3. **Ask:** What was the sky like in the morning today? Let participants remember the color, the clouds, the light and so on of the morning's sky.

4. **Ask:** Is the sky right now exactly like this morning's sky in every respect? Let some participants go out and look at the sky, and report back to the group.

5. **Ask:** Will the sky tomorrow morning be like this morning's sky? After participants have answered, **ask** "Does the sky ever repeat itself exactly in every respect?" Let participants realize that the sky is constantly changing, and is never the same on two different occasions.

6. **Explain:** A person's feelings are constantly changing, like the changing sky. If a person is depressed today, then a week later, he or she may be feeling cheerful. Another week later, the feeling may be anger.

   Skilled counseling before and after the HIV test helps a person understand the full implications of the test results, and prepares him or her for these changing feelings. With support from family and friends, and continuing counseling, an HIV positive person can overcome his or her turbulent feelings, and return to life with new determination and optimism.

INFORMATION

1. **Professional counseling before and after an HIV test prepares a person to understand the full implications of the test results, whether they are positive or negative. If the result is positive, then counseling also helps the person cope with the difficult emotions that will arise, and will guide him or her towards acceptance of the HIV positive result. With support from family and friends, and continuing counseling, an HIV positive person can overcome his or her turbulent feelings, and return to life with new determination and optimism.**

2. **If the result is negative, then the person will have different reactions and will require appropriate counselling.**

Can person who is HIV positive have a normal and fulfilling sexual life?

INFORMATION

1. For an HIV positive person, a 'normal' sexual life means taking the responsibility to prevent infecting his or her partner, and also protecting himself or herself from re-infect. This can be done through:

1. Abstaining completely from penetrative sexual intercourse.

2. Correctly and consistently using condoms during every act in which there is penetrative vaginal or anal sexual intercourse,or an exchange of body fluids.

3. Not having sexual intercourse with a person of unknown STI status.

Objective: To introduce the concept of **normalcy with responsibility.**

GUIDELINES

1. **Ask:** Can a person who is HIV positive have a normal and fulfilling sexual life? Allow participants to share their views, and explore what they consider to be a 'normal' or 'fulfilling' sexual life. Some provocative questions which could help the discussion:
   - Can a person with a cold and fever have a 'normal' sexual life?
   - Can a person whose partner is sick with cold and a fever have a 'fulfilling' sexual life?
   - Can a young man or woman who is busy preparing for an important examination have a 'normal' sexual life?

2. **Explain:** A person with a cold and fever may not feel in the mood for sex. Even if they felt like having sexual intercourse, they might decide against in case their partner gets infected with their cold. Similarly, if the partner is not feeling well, or does not feel like having sex, then the experience may not be satisfactory for both people, and may not be 'fulfilling'.

3. **Explain:** Similarly, a person with HIV, who is going through stormy emotions and trying to come to terms with his or her infection, may simply not be in the mood for any relationships for some time, let alone a sexual relationship.

   Even if they were in the mood for sexual intercourse, they would have to behave with **responsibility**, and take some precautions to prevent their partner from becoming infected, or themselves becoming re-infected by their partner. This can be done through:

   1. Abstaining completely from penetrative sexual intercourse.
   2. Correctly and consistently using condoms during every act in which there is penetrative vaginal or anal sexual intercourse, or an exchange of body fluids.
   3. Not having sexual intercourse with a person of unknown STI status.

   This is called **normalcy with responsibility**.

If a person is already infected with HIV, why does he or she need to use condoms any more?

Objective: To introduce the concept of re-infection by another strain of HIV.

GUIDELINES

1. **Ask:** If a person is already infected with HIV, why does he or she need to use condoms any more? Allow participants to express their views and list them on a flip chart sheet. Some or all of the following points may emerge:
   1. To prevent an STI infection.
   2. To avoid pregnancy.
   3. To avoid infecting the partner with HIV.
   4. To avoid re-infection.

2. **Ask:** If a person already has HIV, then can he or she become re-infected with HIV? Allow participants to share views.

3. **Explain:** If a person already has one type of HIV, then he or she could get re-infected by another type of HIV. Then the person's immune system would be fighting two battles against two slightly different forms of HIV.

INFORMATION

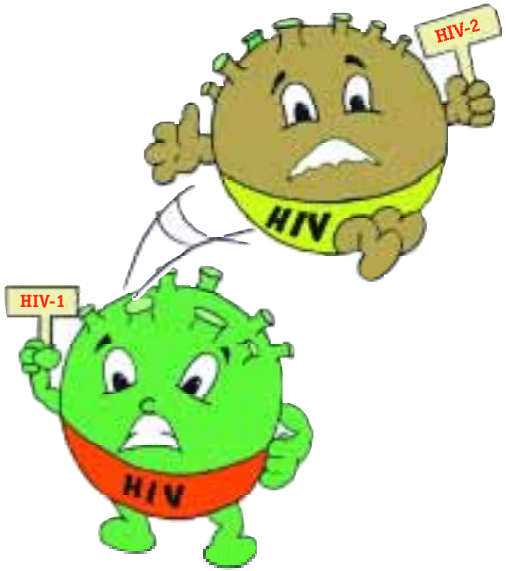
1. **An HIV positive person should use a condom with every act in which there is penetrative anal or vaginal sexual intercourse, or an exchange of body fluids, in order to:**
   - **Prevent an STI infection (including HIV)**
   - **Avoid pregnancy**
   - **Avoid infecting the partner with HIV**
   - **Avoid re-infection**

2. **A person infected by one strain of HIV can become infected by a different strain. Then their immune system would be fighting two battles against two slightly different forms of HIV.**

How many types of HIV are there?

INFORMATION

1. **There are two strains of HIV, known as HIV-1 and HIV-2.**
2. **About 99 percent of the AIDS in the world is caused by HIV-1.**
3. **HIV-2 is believed to be active mainly in Africa and certain Asian countries.**



Objective: To create an understanding of the types HIV-1 and HIV-2.

GUIDELINES

1. **Ask:** What is a 'type' of virus? How is one type of HIV different from another? Allow participants to express their opinions.

2. **Ask:** How many different Kenyan tribes can you name? As participants name different tribes, list them on a flip chart sheet.

3. **Explain:** Though each tribe is different from the others, they are all Kenyan, and have the same national identity.

4. **Explain:** Just as one tribe differs from another but they all share the same national identity of being Kenyan, similarly there may also be 'strains' or 'types' of a virus. So far, two strains of HIV have been identified, called **HIV-1** and **HIV-2**.

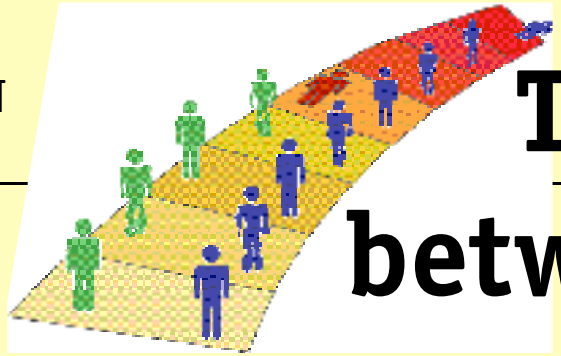
   HIV1 and HIV2 both result in exactly the same condition called AIDS. However, they differ slightly from each other in the shape of the chemicals on their surface. Thus the antibody that the immune system creates for fighting HIV1 cannot fight HIV2, and vice versa. A different antibody is needed for fighting HIV2. (**Note:** Ask participants to recall what they have learnt earlier about the shape of HIV and the chemicals on its surface.)

5. When HIV multiplies in a person's body, it produces imperfect copies with slight differences. These are known as **mutations.** One HIV-infected person may produce from 1 billion to 10 billion variations of HIV every day. Most of these will not continue, but a few may turn out to be resistant to HIV drugs.

6. HIV-1 was isolated in 1983. In 1985, a second type, labelled HIV-2, was discovered among West African prostitutes. About 99 percent of the AIDS in the world is caused by HIV-1. HIV-2 is believed to be active mainly in Africa and certain Asian countries.

DISCUSSION GUIDE

6



The difference between HIV and AIDS

DG 6

The difference between HIV and AIDS

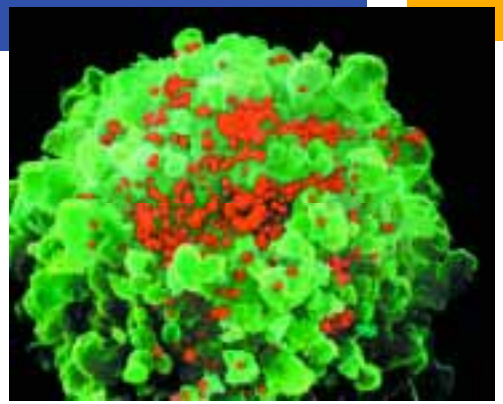
Does a person with HIV have AIDS?

HIV

1. HIV is a virus.
2. HIV has no symptoms.
3. An HIV positive person who does not yet have AIDS may feel and look perfectly healthy.
4. An HIV positive person who does not have AIDS may have an active and effective immune system.
5. An HIV positive person who does not have AIDS can work and support his or her family.

AIDS

1. AIDS is a disease.
2. A person with AIDS may have the symptoms of various diseases which he has acquired, such as TB, meningitis and cancer.
3. A person with AIDS may be weak, and thin. He or she may feel and look sick.
4. The immune system of a person with AIDS is rapidly growing less and less effective at protecting his or her body.



As an HIV positive person begins to develop AIDS, more and more Helper T4 Cells (green in picture) begin to manufacture HIV (red in picture). This photograph shows HIV particles breaking out of the surface of a Helper T4 Cell.

Objective: To create an understanding of the difference between HIV and AIDS.

GUIDELINES

1. **Ask**: How long does it take for a person with HIV to develop AIDS? Let participants share their learning from earlier discussion guides.
2. **Ask:** Does a person with HIV have AIDS? Allow three or four participants to share their perceptions.
3. **Ask:** What is the difference between HIV and AIDS? As participants express their views, list the differences on a flip chart sheet, in two columns titled HIV and AIDS. The list may have some or all of the points shown alongside.
4. **Explain:** One big difference between HIV and AIDS is that one is a virus, and the other is a condition. A person with HIV may or may not have AIDS. However, a person with AIDS will always have HIV in the blood.

What can an HIV positive person do to improve his or her chances of delaying AIDS?

INFORMATION

1. **HIV positive people who pay attention to their nutrition needs and eat a balanced diet develop AIDS later and die later than those who are malnourished.**

2. **An HIV positive person should get information on nutrition from many sources, talk to others living successfully with HIV, and consult a doctor before deciding what is the best diet for him or her.**

Objective: To create an understanding of the importance of nutrition in delaying the onset of AIDS.

GUIDELINES

1. **Ask:** What can an HIV positive person do to improve his or her chances of delaying AIDS? Let participants express their views and list them on a flip chart sheet.

2. **Explain:** Many studies have shown that HIV positive people who are malnourished are likely to get sick more often, develop AIDS earlier, and die earlier than those who pay attention to their nutrition needs and eat a balanced diet.

There is some conflicting advice on how people with HIV should eat, and even more discussion about what nutrients they should supplement. The best course for an infected person is to get information from many sources, talk to others who are living positively with HIV, and consult a doctor before deciding what the best diet for him or her.

What kind of infections does a person get as HIV begins leading to AIDS?

INFORMATION

1. **As a person's immune system begins to weaken because of HIV infection, that person begins acquiring infections that he or she might have otherwise resisted. These infections are called opportunistic infections.**

2. **Some common opportunistic infections include:**
   - Gastroenteritis
   - Encephalitis (an inflammation in the brain)
   - Candidiasis (or thrush, a fungal infection of the mouth or vagina)
   - Meningitis
   - Pneumonia
   - Herpes
   - Kaposi's sarcoma (cancer)
   - Tuberculosis

Objective: To create an understanding of opportunistic infections.

GUIDELINES

1. **Ask:** What kind of infections does a person get as HIV begins leading to AIDS? Allow participants to name some infections that they know about, and list them on a flip chart sheet.

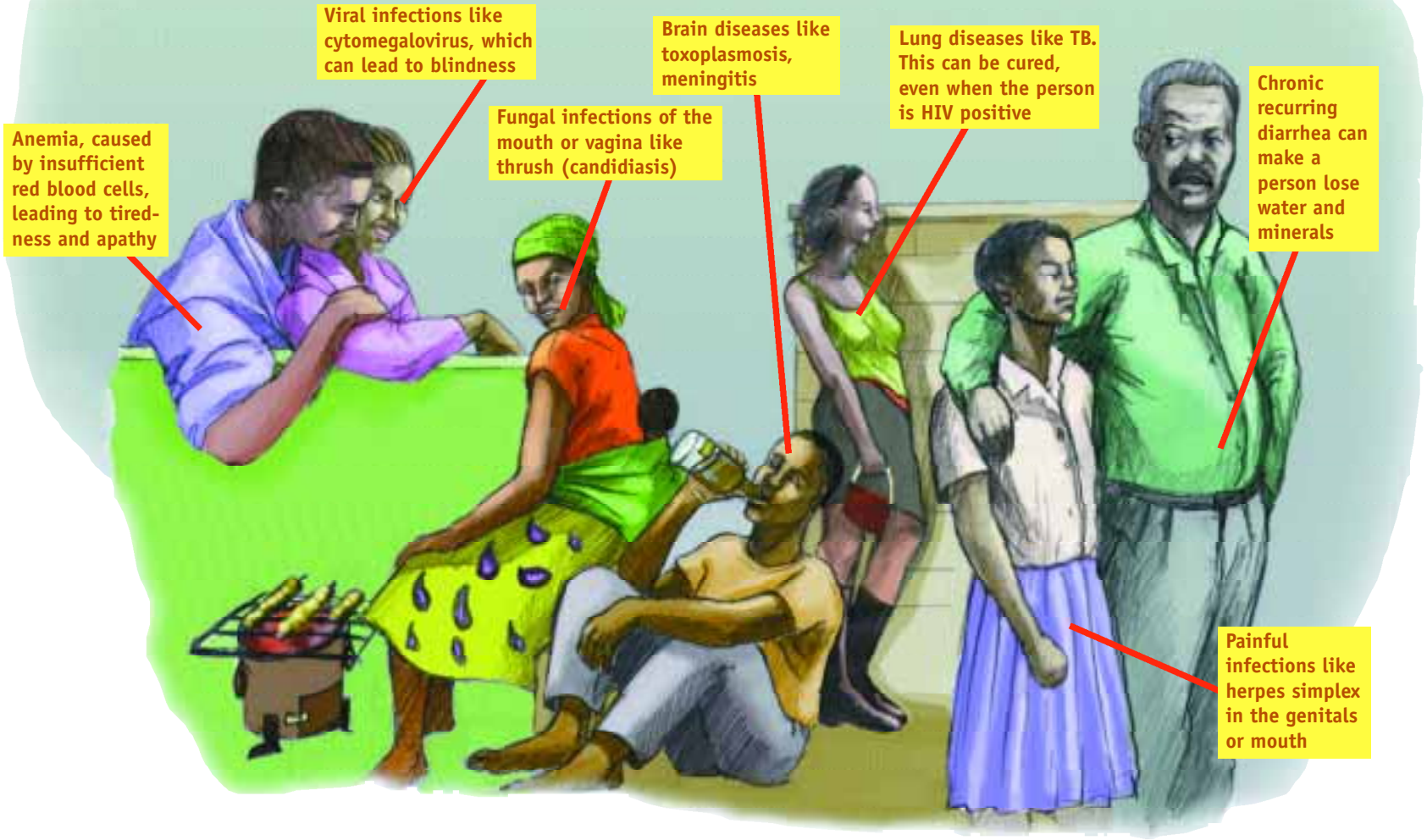
2. **Explain:** We are surrounded by disease-causing bacteria, viruses, fungi, and other germs. Some of them even exist within our bodies without causing any illness. For example, many people carry the latent TB germ in their bodies. However, these germs will not be successful in causing a disease in a person with a healthy immune system. It is only when the immune system is weakened by malnutrition, illness, or a condition like HIV infection, that these germs find an **opportunity** to cause a disease. Such infections are called opportunistic infections.

Some opportunistic infections (OIs) that may appear as HIV progresses to AIDS include:

- Gastroenteritis (a digestive illness)
- Encephalitis (an inflammation in the brain)
- Candidiasis (or thrush, a fungal infection of the mouth or vagina)
- Meningitis
- Pneumonia
- Herpes
- Kaposi's sarcoma (a kind of skin cancer)
- Tuberculosis

When HIV leads to AIDS

After years of living normally with HIV, a person will start developing AIDS, as the immune system begins to weaken. At this stage, the person will become vulnerable to various Opportunistic Infections, which can attack any part of the body. Such infections could range from fungal infections and colds to diseases like TB or cancer. Though the person is HIV positive, these conditions can be treated and sometimes cured, though eventually the person will die.



Are there any medicines that can help an HIV positive person to delay AIDS?

INFORMATION

1. **Highly Active Anti-Retroviral Therapy, known as HAART, consist of combinations of three or more anti-retroviral drugs which reduce the numbers of HIV in the blood by inhibiting their multiplication.**

2. **Before starting treatment with Anti-Retrovirals, a person should fully understand the importance of lifelong adherence, and the side effects, and also make sure that he or she has enough resources to afford ARVs for the rest of life.**

3. **ARVs do not and can not cure HIV. They can only help delay the onset of AIDS, or help delay death from AIDS.**

Objective: To create an understanding of Highly Active Anti-Retroviral Therapy (HAART).

GUIDELINES

1. **Ask:** Are there any medicines that can help an HIV positive person to delay AIDS? Explore participants' perceptions of available treatments.

2. **Explain:** Highly Active Anti-Retroviral Therapy (HAART), consisting of combinations of three or more Anti-Retroviral (ARV) drugs, reduces the numbers of HIV in the blood by inhibiting their ability to multiply, though these drugs cannot eliminate it.

3. **Explain:** Before deciding to go for HAART, a person should thoroughly understand the following aspects about the treatment:

   Adherence: Taking the pills exactly as prescribed is vital. Skipping only a few doses can trigger the development of new mutations of HIV that are resistant to these drugs. These new strains could eventually lead to the person's death.

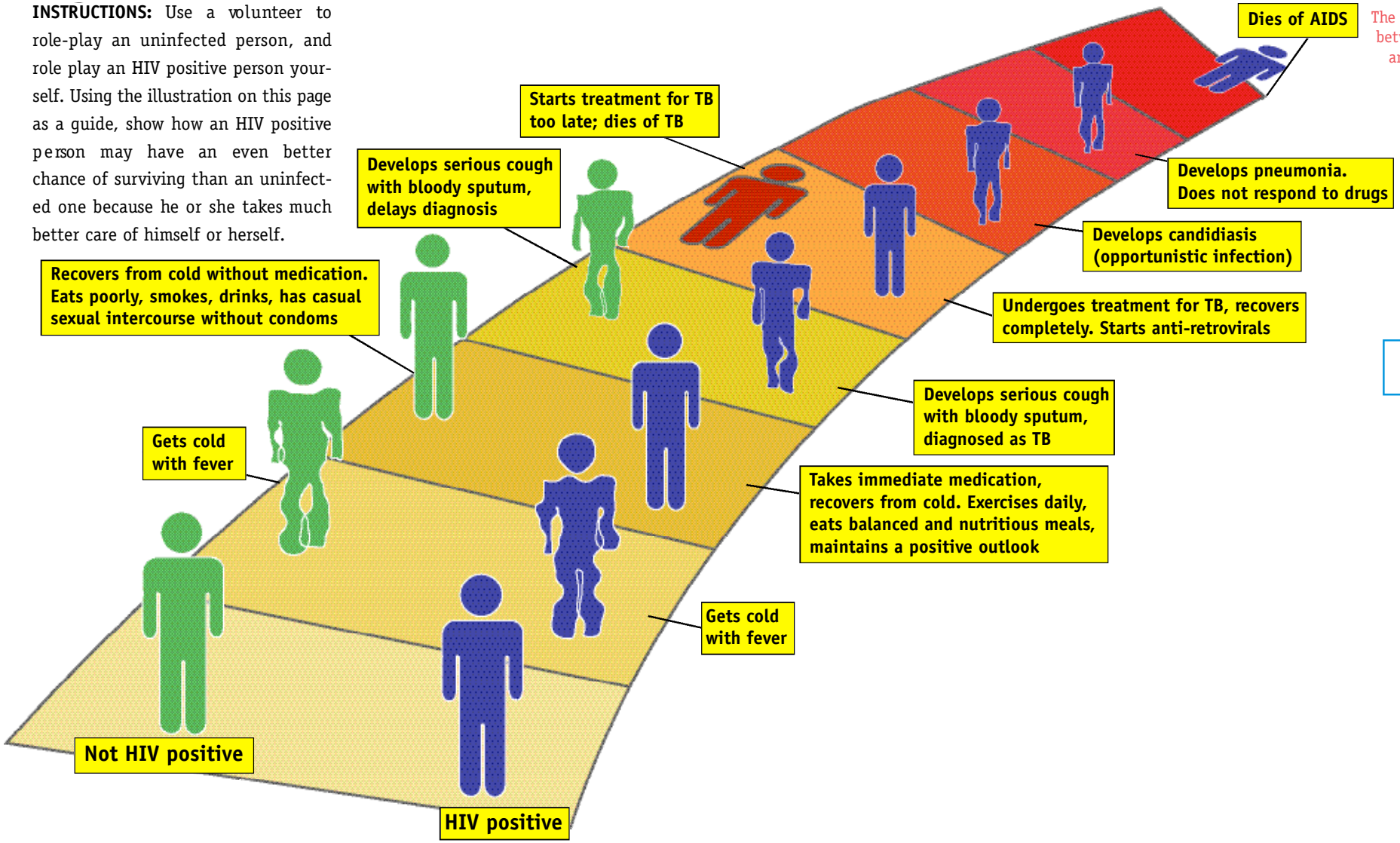
   Costs: In recent times, the cost of HAART has come down, and in some places in Kenya it is even free. Whether it is free, or has a nominal cost, the patient must remember that discontinuing treatment could lead to resistant strains of HIV developing in that person, causing earlier death.

   Side effects: These medicines can cause some serious side effects – fever, rash, nausea, dizziness, baldness, diarrhea, paunch development, a buffalo-like hump between the shoulders, and diabetes — to name a few.

4. **Explain:** HAART drugs do not and can not cure HIV. They can only help delay the onset of AIDS, or help delay death from AIDS.

The AIDS Walk

INSTRUCTIONS: Use a volunteer to role-play an uninfected person, and role play an HIV positive person yourself. Using the illustration on this page as a guide, show how an HIV positive person may have an even better chance of surviving than an uninfected one because he or she takes much better care of himself or herself.



Since HIV is different from AIDS, what is the best way to refer to the disease?

INFORMATION

1. **When a person tests positive, he does not have HIV/AIDS. He has only HIV.**

2. **AIDS cannot be prevented; only HIV can be prevented. AIDS can be mitigated or controlled to some extent with certain drugs. Saying "HIV/AIDS Prevention" has no meaning.**

3. **A person should be careful to use HIV when referring to the infection, and AIDS when referring to the disease. For example, "HIV Prevention and AIDS Control".**

4. **Under no circumstances should the term 'HIV/AIDS' be used.**

Objective: To help participants understand why HIV and AIDS should not be joined together into a single term, HIV/AIDS.

GUIDELINES

1. **Ask:** Is it better to refer to this disease as HIV/AIDS or simply AIDS? Allow participants to express their views, and use the discussion to explore how well people have understood the difference between HIV and AIDS. Challenge their perceptions with the following points and questions:

   – When we know that HIV is different from AIDS, why should we join the two words and make it sound like they were one?

   – By joining HIV and AIDS into one word, will we not be strengthening the perception that HIV is the same as AIDS?

   – In English, the '/' character is pronounced as *slash* or *stroke*. Thus 'HIV/AIDS' may be read as *HIV slash AIDS*, or *HIV stroke AIDS*. How is the '/' character pronounced in Kiswahili?

   – Why do you think it was decided that the disease should be called 'HIV/AIDS'? What could be the advantages?

2. **Explain:** HIV and AIDS might have been joined together in the early days of the epidemic to help people understand that the HIV virus leads to a disease called AIDS. However, in today's Kenya, with high awareness of the epidemic, joining HIV and AIDS makes it difficult for people to understand that there is a deep difference between HIV and AIDS.

   When a person tests positive, he does not have HIV/AIDS. He has only HIV.

   AIDS cannot be prevented; only HIV can be prevented. AIDS can be mitigated or controlled to some extent with certain drugs. Saying "HIV/AIDS Prevention" has no meaning.

3. **Suggest** that a person should be careful to use HIV when referring to the infection, and AIDS when referring to the disease. For example, "HIV Prevention and AIDS Control".

   Under no circumstances should the term 'HIV/AIDS' be used.