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# Health Education: HIV and other STIs

*Teacher's Manual*

*Faculty of Nursing, Allied Health and Social Work  
University of Belize*

*Belize*

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*Belize, 2012*



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## Preface

This Teacher's Manual is designed to be a resource for faculty who teach the course ALHL 2904 Health Education: HIV and Other STIs to students at the Faculty of Nursing, Allied Health and Social Work. It is designed to provide faculty with the materials they need to help students strengthen their knowledge, skills, and attitudes in health education and to be more adept at dealing with diseases such as HIV and other sexually transmitted infections. The Manual promotes a learner-centred participatory approach through its instructional methodology.

The Manual contains reference information on health education around HIV and other STIs, learning objectives, learning activities, and learning assessments for each chapter covered in the course ALHL 2904. Faculty who use this Manual should use it along with other sources of information, especially when more in-depth information is necessary or when more updated information becomes available. Faculty are encouraged to also use national guidelines and manuals and to refer to health experts and professionals who are directly involved in the national response to HIV and AIDS in Belize.

This Manual is intended for use in ALHL 2904 along with companion documents such as Syllabus ALHL299, Course Outline ALHL299, and Student Study Guide on Health Education: HIV and other Sexually Transmitted Infections.

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# Acronyms

<b>AIDS</b>	Acquired immunodeficiency syndrome
<b>ART</b>	Antiretroviral therapy
<b>ARV</b>	Antiretroviral
<b>BFLA</b>	Belize Family Life Association
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CD4</b>	Cluster of designation 4
<b>C-NET</b>	Collaborative Network of People Living with HIV
<b>CoC</b>	Continuum of care
<b>HAART</b>	Highly active antiretroviral therapy
<b>HBV</b>	Hepatitis B virus
<b>HIV</b>	Human immunodeficiency virus
<b>HPV</b>	Human papilloma virus
<b>KHMH</b>	Karl Heusner Memorial Hospital
<b>MTCT</b>	Mother-to-child transmission
<b>NAP</b>	National AIDS Program
<b>NAC</b>	National AIDS Commission
<b>NGO</b>	Nongovernmental organization
<b>OI</b>	Opportunistic infection
<b>OVC</b>	Orphans and vulnerable children
<b>PASMO</b>	Pan American Social Marketing Organization
<b>PCP</b>	Pneumocystis carini pneumonia
<b>PEP</b>	Post-exposure prophylaxis
<b>PITC</b>	Provider-initiated testing and counseling
<b>PLWHA</b>	People living with HIV/AIDS
<b>PPE</b>	Personal Protective Equipment
<b>STD</b>	Sexually transmitted disease
<b>STI</b>	Sexually transmitted infection
<b>TB</b>	Tuberculosis
<b>UNAIDS</b>	Joint United Nations Program on HIV/AIDS
<b>VCT</b>	Voluntary counseling and testing
<b>WHO</b>	World Health Organization

# LESSONS



# CHAPTER 1

## ***Health And Illness/Primary Health Care***

### Learning Objectives

- Discuss the concepts of health and illness.
- Discuss the concept of primary healthcare.
- Discuss students' attitudes to diseases such as HIV/AIDS.



### Reference Information

#### *The Concept of Health*

According to WHO, health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity<sup>1</sup>. Healthy living is about taking responsibility and making smart health choices for today and for the future. Eating right, getting physically fit, emotional wellness, spiritual wellness and prevention are all apart of creating a healthy lifestyle.

#### *The Concept of Illness*

Illness is the subjective experience of loss of health. General malaise, tiredness, sleeplessness, aches and indigestion are examples of symptoms.

#### *Eating Right*

- Mainly vegetables.
- Moderate amounts of lean meats, skinless poultry, fish and reduced fat dairy products, and breads and cereals.
- Moderate amounts of polyunsaturated or monounsaturated oils and fats.

#### *Physical Activity*

Being physically active is an important part of leading a healthy lifestyle. At any age physical activity provides a range of health benefits. And the good news is activity doesn't have to be vigorous - moderate activity, such as brisk walking, is great for your health!.

## *Environment*

Environmental hazards are responsible for as much as a quarter of the total burden of disease world-wide, and more than one-third of the burden among children. Heading that list are diarrhoea, lower respiratory infections, various forms of unintentional injuries, and malaria. The disease burden is much higher in the developing world, although in the case of certain non-communicable diseases, such as cardiovascular diseases and cancers, the per capita disease burden is larger in developed countries. Health impacts of environmental hazards run across more than 80 diseases and types of injury. Well-targeted interventions can prevent much of this environmental risk.

## **Key Factors That Determine Health**

### *Social Factors*

**Social class:** Occupation and social economic status are interchangeable. Because social class correlates with income, housing and work environment, researchers have identified a positive correlation between social class and health.

**Gender:** Gender specific diseases affect only a specific gender. For example, gynaecological and breast diseases affect women's health but not men's health.

**Age:** As people age they become more vulnerable to various kinds of diseases, such as hypertension, cardiac problems, diabetes mellitus and decreases in the body's immune system.

**Ethnicity:** Sickle cell anaemia, for example, occurs mostly in black populations, while Thalassaemia primarily affects Mediterranean populations.

### *Environmental Factors*

**Food Hygiene:** Government policy has implications for the food industry. Strict inspection of food premises and food markets ensures maximum food hygiene that affects health.

**Waste Disposal:** Waste disposal includes the proper treatment and disposal of household, industrial and chemical waste. Incinerators have been abolished and the percentage of recycling is increasing.

**Air Pollution:** Given the incredible sources of air-pollution in Hong Kong and adjacent southern China, this is a significant and growing problem. Air pollution is caused by emissions of particulate matter and harmful gases. The most common air pollutants are total and respirable suspended particulates (TSP & RSP), sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide and (CO) ozone from traffic (Environmental Protection Department, 2006). The concentration of these substances in the environment is determined by the amount produced, as well as by the rate of their removal by wind, rain or currents. One way to improve air quality is to monitor traffic pollution. Other measures include improving diesel engines and shifting to liquid petrol gas.

**Water Quality:** Strict monitoring of water quality is necessary. Water sources may include reservoirs, rivers and sea water.

**Transport:** The well-being of the community could be affected by the degree of traffic congestion. Accidents and injuries result from motor vehicles on the road.

**Working Environment:** A satisfying job in a safe and pleasant environment affects health and well-being. Work environments with adequate occupational safety measures minimize injuries and loss of working time.

**Living Space:** Overcrowded and damp living areas increase the likelihood of communicable diseases.

**Lifestyle Factors:** Drug abuse, excessive alcohol consumption, cigarette smoking, poor driving behaviour and consumption of high fat and high calorie diet are behaviours that damage health. In addition, having casual sex or having multiple sexual partners increase the chances of unwanted pregnancies, sexually transmitted disease and HIV infection. (Rokin 1991) stated that the risk of cancer of the cervix is increased by both early intercourse and increased numbers of sexual partners (Harper, Holman and Dawes 1994). Therefore, monogamous relationships ensure safer sexual relationships.

### *Socioeconomic Factors*

**Education:** People who attain higher educational levels demonstrate higher motivation and are more compliant with treatment regimens. Mothers with less than a high school standard are more likely to give birth to low birth weight infants due to their high incidence of smoking and receiving less attentive antenatal care.

**Employment:** Being employed and having a job affect well-being. Financial security enables people to obtain food, to have access to appropriate housing and to be able to participate in social and leisure activities. A sense of self-worth and self-esteem result from having satisfying employment.

**Accessibility to Health Services:** Access to basic health care services is fundamental to our health. Essential health services include accident and emergency services, general outpatients' clinics, general practitioner services, family planning and well women clinics. Access to these services depends on health services policy and affordability for individuals and families.

**Peace:** Peace and shelter are fundamental conditions and resources for health. War is considered hazardous causing damage to the physical and emotional well-being of people in the affected community.

### *Signs of Good Health*

To look for signs of good health, we must examine all three aspects-physical, mental and social.

**Physical Health:** Physical health is easy to detect and describe. A person is physically healthy if he or she looks alert and responsive. A person who enjoys good physical health is one who:

- Is energetic
- Has good posture
- Weighs normal for age and height

- Has all body organs functioning normally
- Has a clear and clean skin
- Has bright eyes
- Has good textured and shining hair
- Has a clean breath
- Has a good appetite
- Gets sound sleep.

**Social Health:** A person is socially healthy if he or she can move in the society confidently with others. A person with good social health is one who:

- Gets along well with people
- Has pleasant manners
- Helps others
- Fulfils responsibility towards others.

**Mental Health:** Mental health implies:

- Control of emotions
- Sensitive to the needs of others
- Confidence in one's own abilities
- Freedom from unnecessary tensions, anxieties and worries.

### *Factors Which Can Affect Our Health*

- Personal hygiene
- Exercise
- Rest and sleep
- Posture
- Clean home environment
- Our eating habits
- Climate and clothing
- Safety measures at play and work
- Influence of smoking, alcohol and drugs

### *Primary Health Care*

The World Health Organization defines Primary Health Care as "the principal vehicle for the delivery of health care at the most local level of a country's health system. It is essential health care made accessible at a cost the country and community can afford with methods that are practical, scientifically sound and socially acceptable. Everyone in the community should have access to it, and everyone should be involved in it. Beside an appropriate treatment of common diseases and injuries, provision of essential drugs, maternal and child provision of essential drugs, maternal and child health, and prevention and control of locally endemic diseases and immunization, it should also include at least education of the community on prevalent health problems and methods of preventing them, promotion of proper nutrition, safe water and sanitation."

As a strategy, primary health care focuses on individual and community strengths (assets) and opportunities for change (needs); maximizes the involvement of the community; includes all relevant sectors but avoids duplication of services; and uses only health technologies that are accessible, acceptable, affordable and appropriate. Primary health care needs to be delivered close to the people; thus, should rely on maximum use of both lay and professional health care practitioners. (Calnan and Roger 2002, 4-5).

#### Principles of Primary Health Care:

- Accessibility of health service
- Use of appropriate technology
- Individual and community participation
- Increased health promotion and disease prevention
- Intersectoral cooperation.

**Access to Service:** Everyone should have access to quality health care. Access refers to the ability of the individual to obtain health services. Some of the factors that can affect access are:

- Distance: e.g. where health facility is sited far away or it is difficult to get transport to the facility, access to quality health care becomes a problem.
- Financial: e.g. where people cannot pay for the services provided.
- Culture, beliefs and values: The services provided may not be in line with the culture, beliefs and values of some people.

**Technical Competence:** Technical competence as an indicator of quality assurance implies that we should have adequate knowledge and skills to carry out our functions in order to provide quality service, e.g., one must go to a nursing school and pass the nursing examinations before she can work as a nurse. Even though we are no longer in school, we have to continue to update our knowledge by reading health books and attending in-service training workshops, etc. As health professionals, we should also know our limits, that is, know what we can do and what we cannot do. With respect to what we cannot do, we are expected to refer them to other centers or personnel who are more competent to handle them. Our practice should also be guided by laid down standards and guidelines, e.g., the Standard Treatment Guideline.

**Equity:** Quality services should be provided to all people who need them, be they poor, children, adults, the elderly, pregnant women, disabled people, etc. Quality services should be available in all parts of the country; in villages, towns and cities.

**Effectiveness:** We are interested in the type of care that produces positive change in the patient's health or quality of life. We therefore use treatments that are known to be effective, for example, giving a child with diarrheal Oral Rehydration Salt (ORS).

**Efficiency:** Efficiency is the provision of high quality care at the lowest possible cost. We are expected to make the best use of resources and avoid waste of our scarce resources. We waste resources by:

- Prescribing unnecessary drugs
- Stocking more drugs than is required and making them expire
- Buying supplies and equipment we do not use.

**Continuity:** Continuity means that the client gets the full range of health services he/she needs, and that when the case is beyond us, we refer him/her to the right level for further care. Continuity may be achieved by the patient seeing the same primary health care worker or by keeping accurate health records so that another staff can have adequate information to follow up the patient.

**Safety:** Safety means that when providing health services, we reduce to the barest minimum injuries, infections, harmful side effects and other dangers to clients and to staff. In providing quality care, we should not put the patient's life at risk. For example, we should not give unsafe blood to patients and thereby risk them with HIV infection.

**Interpersonal Relations:** This refers to the relationship between us and our clients and communities, between health managers and their staff. We should:

- Show respect to our clients
- Feel for our patients
- Not be rude or shout at them
- Not disclose information we get from patients to other people.

These will bring about good relations and trust between the clients/communities and us. Clients consider good interpersonal relationship as an important component of quality of care.

**Amenities:** These are features that can be provided by our health facilities to make life comfortable and pleasant for clients. They contribute to clients' satisfaction and make clients willing to use our services. For example, comfortable seats, television sets, music, educational materials, educational films, etc. at the outpatient clinic and in the wards.

**Perspectives of Quality:** The health care staff, health managers, clients and communities are all stakeholders in service delivery. Each of these groups may expect different things from health services.

**The Patient/Client:**

Patients/clients want services that:

- Are delivered on time by friendly and respectful staff
- Are safe, produce positive result and that they can afford
- Provide them with adequate information about their condition and treatment
- Provide them with all the drugs they need
- Give privacy.

**The Health Care Staff:**

The health provider can provide quality care if he/she has:

- Adequate knowledge and skills
- Enough resources - staff, drugs, supplies, equipment, transport, etc.
- Safe and clean workplace
- Opportunity to regularly improve himself/herself
- Is well paid and rewarded for good work. (Offei, Bannerman & Kyeremeh 2004).



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## Learning Activity 1: Group Discussion

### **Instructions to Lecturer:**

- While students are discussing, clarify any misconceptions they may have.
- Ensure that each member is actively involved in the discussion.

### **Instructions to Students:**

In Groups of 4, answer the following questions:

1. Name four factors that can affect your health. Give specific examples to illustrate your responses.
2. Explain primary health care in Belize. Discuss how the principles of primary health care are being adhered to in Belize.
  - Make notes on your chart
  - Be prepared to report to the whole group
  - Each group report should be about 5 minutes
  - Have students complete checklist of attitudes towards HIV/AIDS- Let students keep these for future reference.



## Learning Assessment 1: Knowledge and Attitudes

### Multiple Choice

**Instructions:** Read each statement and write in the number for the answer that best reflects your attitudes, values, and comfort level related to HIV and AIDS, and working with people who are living with HIV or AIDS.

1= strongly agree      2= agree      3= disagree      4=strongly disagree

#### I believe...

- \_\_\_\_\_ I believe that people who are infected with HIV should not be treated in the same areas as other patients in order to protect the larger population from infection.
- \_\_\_\_\_ I believe that people infected with HIV are responsible for getting infected.
- \_\_\_\_\_ I believe that HIV-positive patients are the biggest threat to my safety at my place of work.
- \_\_\_\_\_ I believe most HIV-positive health care workers get infected at work.

#### I feel...

- \_\_\_\_\_ I feel that providing health services to people infected with HIV is a waste of resources since they are going to die anyway.
- \_\_\_\_\_ I feel that I am at high risk of becoming infected with HIV working in a health facility.
- \_\_\_\_\_ I feel that clients who have sexual relations with people of the same sex have a right to access the highest quality of health services in my facility.
- \_\_\_\_\_ I feel that clients who are sex workers have a right to access the highest quality of health services in my facility.

#### I am comfortable...

- \_\_\_\_\_ I am comfortable providing health services to clients who are HIV positive.
- \_\_\_\_\_ I am comfortable performing surgical or invasive procedure on clients whose HIV status is unknown.
- \_\_\_\_\_ I am comfortable sharing the bathroom with a colleague who is infected with HIV.
- \_\_\_\_\_ I am comfortable assisting or being assisted by a colleague who is infected with HIV.

#### I avoid...

- \_\_\_\_\_ I avoid touching clients for fear of becoming infected with HIV.
- \_\_\_\_\_ I avoid touching clients' clothing and belongings for fear of becoming infected with HIV.
- \_\_\_\_\_ I avoid performing ANY task at work without wearing latex gloves.

## Learning Assessment 2: Quiz

### **Instructions to Lecturer:**

- Use the following questions to test students' knowledge presented in this chapter. The questions may be incorporated into a test or given as practice questions.

### **Instructions to Students:**

- Read each question and answer as fully as you can.

### **Short Answer questions:**

1. Explain fully the concept of health.
2. Explain the concept of illness.
3. Name two social factors that determine health and explain how they impact your health.
4. Name two environmental factors that determine health and explain how they impact your health.
5. Name two socioeconomic factors that affect health and explain how they impact your health.
6. Explain the signs of good physical, social, and mental health.
7. Explain primary health care.
8. Explain three principles of primary health care.
9. If you are a patient at the KMH, what should you expect as quality health services?
10. If you are giving a lecture to high school students on health, what important messages would you include in your presentation? (Give at least 3 messages)

# CHAPTER 2

## ***Health Education***

### Learning Objectives

- Discuss the importance of health behaviour as a contributor to current health problems.
- Explain the role of health education in dealing with current public health issues such as HIV/AIDS.
- Explain the role of health education in dealing with current public health issues such as drug use/abuse.
- Explain the principles and process of planning for health education.
- Discuss the different communication methods to present health messages.
- Present a lecture on HIV/AIDS to secondary school students.



### Reference Information

#### *Health Behaviour*

Health behaviour is defined as “any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behaviour is objectively effective towards that end” (Health Promotion Glossary, 1986).

It is possible to argue that almost every behaviour or activity by an individual has an impact on his/her health status. In this context it is useful to distinguish between behaviours which are purposefully adopted to promote or protect health (as in the definition above), and those which may be adopted regardless of consequences to health. Health behaviours are distinguished from risk behaviours, which are defined separately as behaviours associated with increased susceptibility to a specific cause of ill-health.

Behavioural factors, particularly tobacco use, diet and activity patterns, alcohol consumption, sexual behaviour, and avoidable injuries are among the most prominent contributors to mortality (Schroeder, 2007; Mokdad, Marks, Stroup, and Gerberding, 2004, 2005). Projections of the global burden of disease for the next two decades include increases in non-communicable diseases, high rates of tobacco-related deaths, and a dramatic rise in deaths from HIV/AIDS (Mathers and Loncar, 2006; Abegunde, et al., 2007). Worldwide, the major causes of death by 2030 are expected to be HIV/AIDS, depressive disorders, and heart disease (Mathers and Loncar, 2006).

## *Understanding Behaviour*

### **Behaviour-Change Strategies and HIV/AIDS**

Individuals' lifestyles and behaviours have a major influence on physical and emotional health. Behaviours that affect health include eating, personal hygiene, sexual activity, physical activity, smoking, and substance abuse. Because these behaviours are often deeply ingrained, they are not easy to change. Yet, unless harmful behaviours are changed, they can result in preventable illness and premature death. In the context of HIV/AIDS, sexual behaviour is probably the most important behaviour to consider. Reducing HIV transmission in the community and helping HIV-positive clients stay in good health are essential components of the counselling process. The counsellor's job is to help clients choose safe and healthy behaviour patterns. This entails explaining the advantages and disadvantages of behaviours such as use of alcohol, tobacco, and other drugs; sexual activity; and eating habits.

Some actions to maintain health require a great deal of effort, while others require relatively little. For example, it takes relatively little effort, theoretically, to set up an appointment for a child's vaccination. This one-time effort can produce a substantial result. Other efforts to maintain health require a great deal more initiative over time. Eating healthy foods to prevent heart disease, for example, requires diligence, consistency, and discipline over a long period. One could place sexual behaviours in this same category. Using safer-sex barriers during sexual activity requires consistency, resources, planning, and commitment. When an individual begins to consistently engage in unhealthy behaviours, the unhealthy behaviour must be unlearned.

To change behaviour, the individual needs to: identify the behaviour as harmful, understand available alternatives, be able to act on that knowledge, and receive the support necessary to maintain the behaviour change. For example, an individual with heart disease needs to know what foods are contributing to the problem, how to replace them with healthier foods, how to prepare or acquire those foods, and how to consistently eat them and not return to poor eating habits.

Supporting behaviour change is a complex interaction between the counsellor and client that requires a great deal of insight into human nature and motivation. The challenge for Counsellors is to acknowledge the difficulty in changing one's behaviours while establishing a relationship with the client that supports the behaviour change. In behaviour change, there is a considerable difference between theory and practice. In reality, it is not easy for a person to change his or her behaviour. Clients can begin to change their behaviour, but there is no guarantee they will be able to maintain that change. The role of the counsellor is to support the client in maintaining new behaviour patterns. No single strategy for behaviour change can address all human behaviours.

The three strategies presented here—risk elimination, risk reduction, and harm reduction—can be thought of as tools for assessing clients and their concerns.

**Risk elimination: “Abstaining from sex and injecting drugs is best”**

Risk elimination relies on abstinence to eliminate the risk of HIV infection. According to this strategy, the client should abstain from sex and refrain from injecting drugs. The risk of infection is eliminated because the behaviours that lead to it are eliminated. An example of a prevention education message based on risk elimination is the “Just Say No” drug campaign developed in the United States. While adhering to risk elimination guarantees 100% safety from infection, it is often the least useful behaviour change strategy because most people find it extremely difficult to suddenly eliminate risk activities such as sex or injecting drugs. This strategy does not acknowledge that people derive pleasure from engaging in certain behaviours and does not allow for alternatives.

**Risk reduction: “Use a condom and do not share injecting equipment”**

Realizing that many people cannot adhere to the risk elimination strategy, some Counsellors and educators opt for risk reduction. The risk-reduction strategy acknowledges that individuals might continue to engage in sex and inject drugs. Assuming that abstinence is not a realistic alternative, the risk-reduction strategy advises that individuals engage in “safer” behaviours: using condoms during sex and, if they are going to inject drugs, not sharing needles.

The risk-reduction strategy acknowledges that, no matter what, some people will engage in risky behaviours, so realistically it is better to find ways for them to engage in those behaviours more safely than to try to influence them to give them up completely. The risk-reduction strategy cannot offer a 100% guarantee that a person will remain uninfected. For example, if a condom breaks during intercourse, the client will be at risk. Many educators feel that focusing so much attention on condoms and how to use them does not allow sufficient discussion of why a client might be engaging in behaviours that put him or her at risk in the first place. For this reason, many educators believe that the risk-reduction strategy lacks the humanistic and individualistic approach necessary for behaviour change.

**Harm reduction: “Follow a step-by-step process of change”**

The harm-reduction strategy recognizes that risky behaviours do not only occur, they also have meaning. This strategy assumes risk is a part of life and ranks an individual’s risk of HIV infection among other life issues, such as illness, unemployment, and drug use. The harm-reduction strategy rejects the “all or nothing” approach to behaviour change; instead, change is incremental and takes place over time. Any positive change brings the individual one step closer to healthy behaviour. The counsellor works with the client to identify risky behaviours, understand the reasons why he or she may continue engaging in them, and identify what the client can do to move toward healthier behaviours. An example is needle-exchange programs, which acknowledge that some clients engage in risky behaviour. In this strategy, eliminating the behaviour that puts them at risk might not be an immediate goal, but, for some, a long-term one.

Unlike the risk-elimination and risk-reduction strategies, which leave no room to acknowledge the difficulty of giving up certain behaviours such as substance use, the harm-reduction strategy acknowledges that the risky behaviour may continue, but reduces the harm by, for example, making clean needles available. Providers who use the harm-reduction strategy must have the cultural competence, sensitivity, resources, and skills to work effectively with clients. Some Counsellors and educators may feel uncomfortable ethically because this strategy does not protect the client from immediate infection.

### The Process of Behaviour Change

Behaviour change is a process that takes place in stages, from acknowledging the need to change behaviour through actually adopting and sustaining behaviour change.

Understanding these stages can strengthen the counselling process. While it is important to understand these stages, it is equally important to recognize that no behaviour change follows an absolutely predictable pattern. A client can conceivably go through the stages of behaviour change many times before a successful change is achieved. The stages of behaviour change are presented here not as an absolute, but as a tool for the counsellor when assessing the client and determining where the client is on the behaviour change continuum. It is important to stress that behaviour change takes place in the context of the client's life and the social, societal, economic, and emotional challenges that he or she is facing. The primary tool for stemming HIV transmission is education that promotes healthy behaviour. But experience has demonstrated that simply providing facts or advocating abstinence is not enough. Human beings tend to be resistant to behaviour changes of all sorts, particularly to changing sexual and drug-related behaviours.

An important first step toward understanding and supporting healthy behaviour change is re-examining perceptions of client behaviours. A client's perception of his/her behaviours may be vastly different from the VCT counsellor's perception. The client and counsellor often have a different understanding of what behaviours present risk. Ironically, some of the behaviour changes Counsellors encourage their clients to adopt often feel riskier to them than their current risk-taking behaviours. For example, when Counsellors suggest introducing condoms into a client's relationship with a sexual partner, the client may fear losing the relationship. The client therefore may reject the recommendation. In many communities, condoms have social and cultural connotations that can make their use problematic or even unacceptable. Condom use can be considered a sign of promiscuity, interference with fertility, or a threat to the assumption of trust in the relationship. For women and adolescents, in particular, suggesting condom use may ignore an important reality: they often lack power in sexual decision-making.

When sexual behaviours and drugs are linked, a client's attempts to control or change the situation can entail risks that he or she feels overshadow any warnings about potential infection. If a client feels the costs of behaviour change exceed the benefits, he or she may ignore suggestions to adopt the change. Thus, such encouragement actually may be irresponsible if not given with explicit recognition of the client's perception, and pragmatic support for managing the hoped-for change in the context of the client's daily life and personal and social needs. Counsellors must understand the conditions and strategies that will maximize the possibility of change. In counselling for behaviour change, Counsellors can:

- Ask clients what they can do to avoid HIV infection
- Ask about the specifics of how they will accomplish this
- Identify potential barriers to implementation
- Practice strategies to deal with these barriers
- Identify and assist with other resources for support
- Document the plan.

## *Determinants of the Ability to Change Behaviour*

Research on behaviour change has repeatedly identified four characteristics that seem to influence people's ability to change:

- **Self-efficacy** - the degree to which a person feels in control of his/her own life and destiny.
- **Assertiveness** - the ability to communicate clearly what a person wants or needs.
- **Rationality** - the ability to make decisions about one's own life and behaviour in a fully considered way.
- **Social affiliation** - how and to what degree a person feels part of a larger group, and how important that connection is.

### **Counsellors can support behaviour change by:**

- Recognizing, supporting, rewarding, and affirming all changes and efforts to change.
- Assisting clients with problem solving rather than chastising them for their failures.
- Being available for ongoing support and/or identifying and assisting with other sources of support.
- Focusing on the benefits of the changes made while allowing for regret of past behaviour.

### **Behaviour change is most likely to occur when:**

- Clients gain new awareness or insight and perceive its significance in their lives.
- Clients have the opportunity to examine not just the benefits of behaviour change, but the costs of making the change as well.
- Clients have access to necessary tools and services, the opportunity to develop needed skills, and ongoing support for behaviour change.
- Clients can rehearse behaviour changes with role playing and other practices (for example, if a client wants to inform a partner of his or her HIV status but is afraid to do so, the counsellor can suggest the person act out the imagined exchange).
- Clients make an initial attempt to introduce change and perceive this attempt as more positive than negative.

## *Stages of Behaviour Change*

### **The Stages of Behaviour Change**

- Knowledge/Awareness
- Significance to Self
- Cost/Benefits
- Analysis
- Capacity Building
- Provisional Try (initial attempts at behaviour change)
- Maintaining Behaviour Change.

### Knowledge/Awareness

Counsellors need to assess clients' HIV/AIDS knowledge and awareness and the risks posed by their behaviour. Clients must know that they are at risk before behaviour change can occur.

Open-ended questions are a good tool for assessing a client's knowledge and/or awareness. Possible questions for assessing knowledge:

- "What have you heard about HIV?" (Alternatively, "What do you know about HIV?" Be aware that the latter may sound more like interrogation than inquiry).
- "What have you heard about how people get HIV?"
- "What have you heard about what people can do to avoid HIV infection?"
- "What are you doing that might put you at risk of HIV infection?"
- "Why do you think we talk about HIV here in an STI clinic?"

### Significance to Self

Once the client is aware of the problem, he or she then must acknowledge the significance of the problem in his/her own life. Significance to self is the ability of the client to connect the information that he or she has to his/her own behaviour. Often, clients will know how HIV infection occurs but not see how they are placing themselves at risk of infection. Counsellors can help clients recognize risk behaviour. Clients respond to their risk of HIV infection by:

- Recognizing that their behaviour places them at risk of HIV infection.
- Being unwilling or unable to accept that their behaviour can result in HIV infection.
- Recognizing their risk and feeling helpless, hopeless, and unable to change their behaviour.

### Cost/Benefits Analysis

The cost/benefits analysis acknowledges that there are both gains and losses for the client in changing behaviour. Cost/benefits analysis examines the "pros" and "cons" of both the current behaviour and the desired change, and assists the client in expressing the losses they might feel for giving up the old behaviour. Questions/strategies for initiating a cost/benefits analysis include:

- "What's working for you about what you are doing now?"
- "What are you doing now that you'd like to change?"
- "What's the hardest/scariest/worst/most difficult part about changing this behaviour?"
- "What might be good about changing?"

### Capacity Building

After the client is aware of the problem and how it relates to his/her own life, and has decided that the benefits associated with the behaviour change outweigh the costs, he or she is ready to start making changes. But often, the client does not have the personal resources to make and sustain the behaviour change. Capacity building prepares for behaviour change.

For example, Counsellors should not only give a condom demonstration, but should also identify factors that prevent the client from using condoms. Then the counsellor can help the client develop the skills he or she needs to start using condoms regularly. During capacity building, the counsellor provides the client with specific, practical, and achievable skills. One method to build capacity for behaviour change is to conduct reverse role-plays and affirmations. Questions/strategies for capacity building include:

- "What do you expect will be the most difficult part of this for you?"
- "How have you handled similar situations in the past?"
- "What will you have to do differently?"
- "When you do this, what words will you use?"

### **Provisional Try**

The provisional try takes place when a client leaves the counselling session and attempts a step toward changing behaviour. Though provisional tries may not always be successful, the minimal attempt at behaviour change can be considered a success and must be supported by counsellors. Counselling strategies during the provisional try stage include:

- Reinterpreting the concept of "failure"
- Asking "why" in a positive way
- Providing closure.

### **Maintaining Behaviour Change**

Maintaining safer sexual behaviours over time depends on continuous and repetitive interventions. It is expected that some behaviour will change as an individual's life changes.

For example, condom use may no longer be necessary when an uninfected person enters a monogamous relationship with someone who is HIV-negative. But relapses to less safe behaviour may invalidate the previous safe behaviour and lead to HIV infection. Rates of high risk behaviour and new HIV infections will increase if interventions are withdrawn; thus, continued risk reduction depends on continued behaviour-change programs and continued encouragement and support from counsellors.

## *Health Education*

Health education is a social science that draws from the biological, environmental, psychological, physical and medical sciences to promote health and prevent disease, disability and premature death through education-driven voluntary behaviour change activities.

Health education is the development of individual, group, institutional, community and systemic strategies to improve health knowledge, attitudes, skills and behaviour. The purpose of health education is to positively influence the health behaviour of individuals and communities as well as the living and working conditions that influence their health.

### Why is Health Education important?

The provisional try takes place when a client leaves the counselling session and attempts a step toward changing behaviour. Though provisional tries may not always be successful, the minimal attempt at behaviour change can be considered a success and must be supported by counsellors. Counselling strategies during the provisional try stage include:

- Health education improves the health status of individuals, families, communities, states, and the nation.
- Health education enhances the quality of life for all people.
- Health education reduces premature deaths.
- By focusing on prevention, health education reduces the costs (both financial and human) that individuals, employers, families, insurance companies, medical facilities, communities, the state and the nation would spend on medical treatment.

### The Role of Health Education

Public health education is important in promoting health behaviour and preventing disease. Since the 1980s the incidence of HIV/AIDS has decreased due to successful public health campaigns that have focused on changing behaviour in order to prevent the transmission of disease. Recently, media campaigns have played a significant role in increasing awareness about HIV/AIDS and getting tested, two factors important in preventing the spread of HIV. Specifically, public education of HIV/AIDS is a powerful tool in reducing the disease burden as it provides information to individuals about the disease, how it is transmitted, how they can take precautionary measures to help prevent the transmission of HIV, and what steps to take if they suspect that they've contracted the disease.

Public health education emphasizes the concept of self-empowerment since it informs individuals about the importance of prevention and safe behaviours to prevent the infection and transmission of HIV. In addition to creating the opportunity to empower individuals, public health education can create a hopeful outlook on a disease that was once considered absolute. HIV/AIDS education can help develop standards of behaviour that create a positive state of body, mind and spirit. Individuals can strengthen their ability to cope with the disease and take initiative to adhere to the treatments outlined in their disease management program.

Poor health literacy has been associated with poor health and negative treatment outcomes. Being able to understand medical treatments is crucial for treatment adherence, especially for individuals with HIV/AIDS, whose treatments can seem complicated if not explained properly by their physician. Furthermore, poor personal knowledge and understanding of health issues is also a result of poor health literacy. One study found that poor health literacy was associated with lower adherence to anti-HIV medication regimens and functioning of the immune system.

Literacy can pose as a long-term barrier in proper treatment adherence, which is why public health education must also gauge the level of understanding of the audience before delivering information. In sum, public health education plays an important role in reducing the burden of HIV/AIDS by increasing health literacy and creating opportunities for prevention and better disease management.



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## Learning Activity 1: Group Discussion

### **Instructions to Lecturer:**

- Prepare a PPT presentation on the topic: Health Behavior as a contributor to current health problems.
- Ensure that the PPT covers the topic but allows time for group discussion.
- Ask students to get into groups of five and discuss specific examples of health behaviors which lead to health problems.

### **Instructions to Students:**

- In groups of five, discuss specific examples of health behaviors which lead to health problems.
- On a chart, make two columns: one for health behavior and one for health problem. Fill in the columns with specific examples of each.
- Be prepared to present to class and answer questions from the large group.



## Learning Activity 2: Case Study

### **Instructions to Lecturer:**

- Present students with the following case study that illustrates the issue of HIV in a community and ask them to outline the role of health education in dealing with this issue.
- Be sure to provide additional information that students may not have given in their report to the large group.

### **CASE STUDY:**

***In a recent study conducted by the National AIDS Program, it was found that the incidence of HIV infection in the Belize District has risen significantly in the last five years. The age group with the highest incidence of infection is the 15- 24 age group. Discuss how health education will play a role in reducing the incidence of HIV infection in this age group.***

### **Instructions to Students:**

- In groups of four, discuss the case study and outline the role of health education in reducing the incidence of HIV infection.
- You are allowed 10-15 minutes to discuss the case and record your answers.
- One person will present the groups answers to the large group.



## Learning Activity 3: Planning for Health Education

### **Instructions to Lecturer:**

- Prepare a PPT with information on communication methods and principles and procedures for planning health education.
- Allow class time for large group discussion and question and answer session.

### **Instructions to Students:**

- Ask and answer questions in large group discussion that will assist you in preparing your lecture on HIV to secondary school students.



## Learning Activity 4: Preparing Lecture on HIV/AIDS and Drug Use

### **Instructions to Lecturer:**

- Allow students to work in pairs to prepare their presentation on HIV or Drug Use to high school students.
- Give them a copy of the grading rubric you will use to assign a grade.
- Monitor the work session and answer questions the students may have.
- Ensure that you have made contact with high school authorities to have your students present at their schools.
- Enlist the assistance of high school teachers to help with the evaluation of the presentations.
- Ensure that you provide feedback on the presentations to your students.

### **NOTE:**

Make adjustments to this learning activity/learning assessment if it is necessary.



## Learning Assessment 1: Understanding Behavior

### **Instructions to Lecturer:**

- Assign students to groups of four. Ask each group to identify one health behavior (e.g. smoking, drinking, drug use, etc.) that needs to be changed.
- Ask students to prepare a role play between a counselor and a client in which the counselor demonstrates a good understanding of behavior and employs one or more of the strategies to encourage the client to change his/her behavior.
- Select a few students to present their role plays to the large group.
- Use a rubric to assign grades.



## Learning Assessment 2: Observation of High School Lecture on HIV/Drug Use

### **Instructions to Lecturer:**

- Use the following grading rubric dimensions to assign grades to students' presentation on HIV and AIDS/Drug Use.

### **Grading Rubric:**

Content: 20 marks.

Proper usage of English: 15 marks.

Introduction: 10 marks.

Ability to engage high school students: 15 marks.

Creativity in presentation: 10 marks.

Application of communication principles: 10 marks.

Ability to answer questions: 10 marks.

Concluding message: 10 marks.

Ensure that you provide timely feedback to students that will assist them to improve on future health education presentations.

\* Any user of the document that these can be modified or a new one be developed where necessary.

# CHAPTER 3

## ***Overview of HIV and AIDS***

### Learning Objectives

- Explain modes of transmission and its effect on the immune system.
- Name other pathogens that can be transmitted by blood and body fluids and the corresponding STIs.
- Differentiate between HIV and AIDS.
- Explain ways of prevention of HIV.
- Explain the epidemiology of HIV/AIDS in Belize.
- Explain the epidemiology of HIV/AIDS in the region.
- Discuss the social, economic, and health impact of HIV/AIDS in Belize.
- Discuss the human rights approach to HIV and AIDS.



### Reference Information

#### **What is Immunopathogenesis?**

Immunopathogenesis is the process of development of a disease in which an immune response or the products of an immune reaction are involved.

#### **What is the Immune System?**

The immune system is a collection of cells and substances that act as the body's defence against foreign substances, known as "antigens." It is composed of T-lymphocyte and B-lymphocyte cells, which defend the body from antigens. Among the T-lymphocytes are carriers of CD4 receptors. These are T4 lymphocytes, or CD4 cells. HIV infects a person's CD4+ T-cells and uses them to replicate (make copies of itself). In a person infected with HIV, CD4 cells are progressively destroyed. As these cells are destroyed, an infected person's immune system is weakened and the person is more likely to develop opportunistic infections (OIs) and certain cancers. Any other infection that stimulates the immune system is likely to accelerate this destruction, making the person still more vulnerable.

#### **What are Antibodies and Antigens?**

An antigen is a substance (such as HIV) that, when introduced into the body, stimulates the production of an antibody (antibodies fight antigens). Antibodies form in a person's blood when HIV or other antigens enter the body. Usually antibodies defend against disease agents. But replication of HIV in the body over time, and especially without pharmacological intervention, breaks down the immune system to the point where it can no longer fight disease.

### What is the Human Immunodeficiency Virus (HIV)?

HIV is the virus that causes AIDS in humans. Researchers have identified two types of HIV: HIV-1 and HIV-2. Both HIV-1 and HIV-2 have the same modes of transmission and are associated with similar opportunistic infections and AIDS, though there are differences in the efficiency of transmission and rates of disease progression. HIV-1 accounts for the majority of infections in the world and has at least 10 genetic subtypes. HIV-2, found primarily in West Africa, appears to be less easily transmitted and progresses more slowly to AIDS than HIV-1. It is possible to be infected with both types of HIV simultaneously.

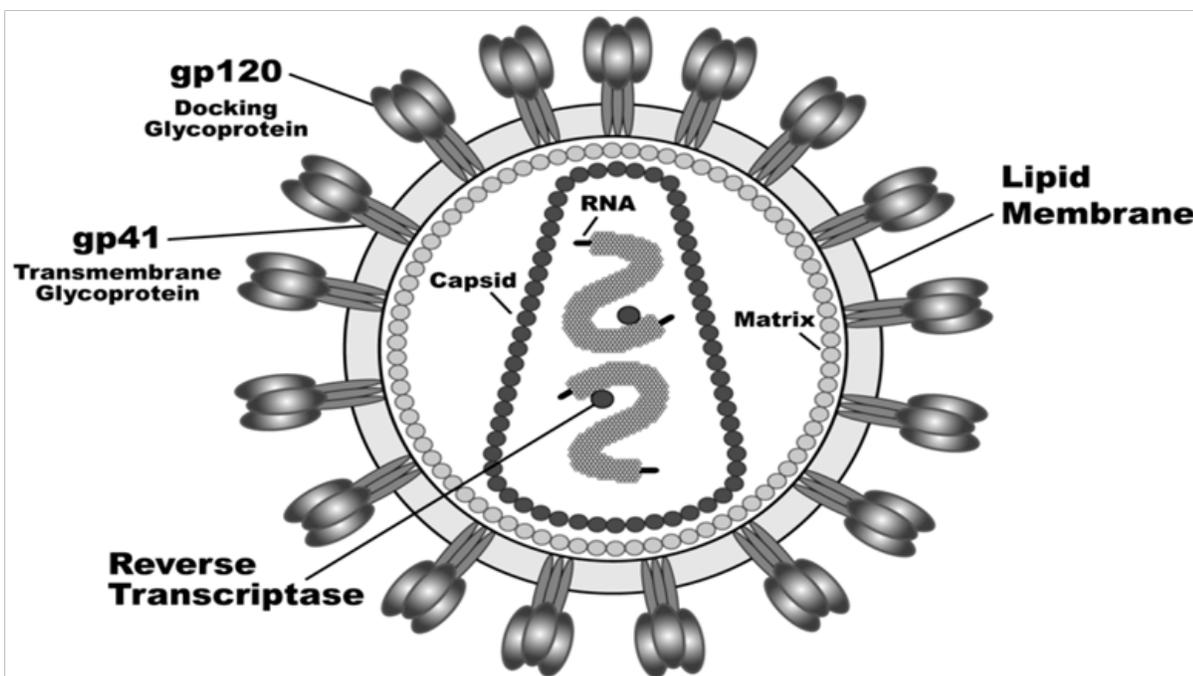
### What is the Acquired Immunodeficiency Syndrome (AIDS)?

The acronym AIDS stands for “acquired immunodeficiency syndrome.” AIDS is a condition caused by HIV, which weakens the body’s immune system until it can no longer fight off the simple infections that most healthy people’s immune system can resist or control (such infections are called opportunistic infections, OI). Early AIDS symptoms include chronic fatigue, diarrhoea, fever, weight loss, persistent cough, skin rashes, herpes and other oral infections, swelling of the lymph nodes, and memory loss or other mental changes. As the immune system becomes further compromised by HIV, OIs such as pneumonia, meningitis, cancers, and tuberculosis (TB) easily attack the body. TB is the most common OI in AIDS patients and accounts for about one-third of AIDS deaths in sub-Saharan Africa.

### The Structure of the HIV Virus

HIV consists of a cylindrical centre surrounded by a sphere-shaped lipid bi-layer envelope. There are two major proteins in this lipid bilayer, gp120 and gp41 (See Figure 1). The major function of these proteins is to mediate recognition of CD4+ cells, thereby enabling the HIV virus to attach to and invade the CD4+ cells. The inner sphere contains two single stranded copies of the genomic material – ribonucleic acid (RNA) – as well as multiple proteins and enzymes necessary in the process of HIV replication and maturation: reverse transcriptase, integrase, and protease (Baylor 2006).

**Figure 1 Human Immunodeficiency Virus**



Original Source: I-TECH. Secondary source: UNAM HIV and AIDS Resource Guide, I-TECH.

**What is a CD4+ T-cell Count?**

The CD4+ T-cell count, a measurement of a person's CD4+ T-cells, is a marker of the strength of a person's immune system. As HIV destroys CD4 cells, the infected person's immune system is weakened. By measuring the CD4 cell count, it is possible to determine the stage of HIV disease and to predict the risk of complications (certain AIDS-related medical conditions occur at particular stages of HIV disease). Thus, the CD4 count can be used to identify problems for which an individual may be at risk and to determine what medications might be helpful.

**What is Viral Load?**

Viral load is the amount of HIV in a person's blood. Like CD4 counts, measuring viral load is important for disease staging and prognosis. Persons with a high viral load are more likely to progress rapidly to AIDS than persons with a lower viral load.

**How are the CD4 Cell Count and Viral Load Related?**

The CD4 cell count is a marker of the level of immune function at any given time, while the viral load is a measurement of the level of circulating virus in the blood. As the virus reproduces, it destroys CD4 cells and reduces CD4 count. In general, the higher the viral load, the more quickly the CD4 cells are destroyed. Both tests are useful in guiding use of ART, staging HIV disease, and determining prognosis (predicting complications).

*Life Cycle and Natural History of HIV*

HIV belongs to the retrovirus family. Retroviruses are living microorganisms containing ribonucleic acid (RNA) in their genome. They cannot reproduce in isolation; rather, an organism must act as host. HIV infects and reproduces itself mainly in so-called host cells, or CD4+ T-cells, a type of white blood cell that plays a fundamental role in the body's immune system. CD4+ T-cells are characterized by the presence of CD4 receptors on their surface, the main target of HIV.

Normally, viruses replicate by using their DNA (deoxyribonucleic acid, the carrier of genetic information) to make RNA. In turn, RNA produces proteins necessary to build all organisms. But retroviruses, such as HIV, work in reverse: their RNA creates DNA, which then combines with the DNA of the infected host cells to spread the virus. Once contact is made between the virus and the human cell, the virus transfers its RNA to the human cell.

With the help of enzymes called "reverse transcriptase," the RNA is transformed into DNA, which is then inserted into the human cell's DNA and becomes an integral part of it, rendering the infection permanent. HIV remains latent inside the host cell for an indeterminate period. In transmitting HIV from one person to another (or one cell to another), viral particles move through bodily fluids to attack new CD4 host cells. (See Figure 2).

**The HIV Life Cycle:****Step 1: T-cell infection (binding)**

- HIV binds to the CD4 receptor of the host cell (a co-receptor is also needed for HIV to enter the cell).
- HIV enters the cell.
- The contents of the virus are emptied into the cell.

### Step 2: Reverse transcription

- Single strands of viral RNA are converted into double-stranded DNA by the reverse transcriptase enzyme.

### Step 3: Integration

- Viral DNA enters the cell nucleus and is combined with the cell's own DNA by the integrase enzyme.
- Once the viral DNA is integrated into the cell's genetic material, HIV can persist in the latent stage for many years.

### Step 4: Replication

- Viral DNA is transcribed into messenger RNA (mRNA).
- mRNA is translated into viral proteins.
- The new viral RNA forms the genetic material for the next generation of viruses.

### Step 5: Assembly

- The viral RNA and viral proteins come together at the cell membrane.
- They form a new virus.
- Among the viral proteins is protease, which is required to process the HIV proteins (protease inhibitor drugs act by blocking this critical step).

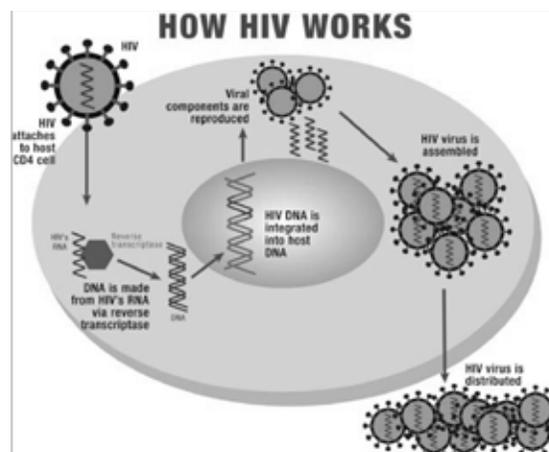
### Step 6: Budding and release

- Immature virus buds forth from the cell, taking some of the cell membrane with it.
- The protein chains in the new viral particle are cut into individual proteins that combine to make a new working virus.

### Step 7: Cell death

- The release of the new virus weakens the host cell and it dies (this is how HIV weakens the immune system: it kills the CD4+ T-cells). HIV is extremely fragile outside the human body. The virus cannot withstand exposure to temperatures above 60 degrees Celsius or contact with disinfectants such as formalin, oxygenated water, alcohol, acetone, phenol, and bleach. HIV cannot penetrate unbroken skin; thus, it is not transmitted by casual physical contact such as kissing, holding hands, sneezing or coughing, sharing toilets, using the same utensils, or consuming food or beverages handled by someone with HIV.

**Figure 2: Life Cycle of HIV**



Original Source of image: ITECH. Secondary source: UNAM HIV and AIDS Resource Guide.

### The Natural History of HIV Infection

The term “natural history” refers to the clinical evolution of an infection. After exposure to HIV and viral replication, a person’s immune system breaks down and becomes vulnerable to OIs—leading ultimately to death. Several phases occur between HIV infection and the advent of AIDS. Through currently available treatment, the natural progression of HIV infection can be modified considerably. In all settings, prevention and correct management of OIs have a beneficial effect on the progression of HIV infection. Where available, ART generally slows disease progression and improves the quality and length of life.

The progression to AIDS among individuals is variable. Following infection with HIV, some people degenerate rapidly (within 1-2 years) to a low CD4 count, become ill and, without treatment, die. Such individuals are called rapid progressors. Other individuals may become infected and remain healthy with relatively normal CD4 counts for many (>10) years. These people are called long term non-progressors. In developed countries, the median time from infection to an AIDS diagnosis, without treatment, is 10 years (Fauci 1996). Almost all HIV-infected people will ultimately develop HIV-related disease and AIDS. This progression depends on the type and strain of the virus and certain host characteristics. Factors that may cause faster progression include ages less than 5 years or over 40 years, other infections, and possibly genetic (hereditary) factors (WHO 2000).

**Table 1: Natural History or Progression of HIV Infection**

Primary HIV Infection or Acute Retroviral Syndrome (ARS)	<ul style="list-style-type: none"> <li>• HIV enters a person’s body.</li> <li>• HIV infects and replicates in the person’s cells (CD4 and macrophages).</li> <li>• Significant viral replication induces the immune system to produce antibodies to HIV.</li> <li>• During this time, HIV viral load is high and therefore the infected person is highly infectious and can easily transmit virus to others. ARS is symptomatic in 53% to 90% of people, and occurs 2 – 4 weeks after exposure and lasts 1 – 2 weeks.</li> <li>• Common Symptoms include: fever, rash, myalgias or arthralgias lymphadenopathy, pharyngitis, headache, diarrhea, nausea, vomiting, and neuropathy,</li> </ul>
“sero-conversion” or “window period”	<ul style="list-style-type: none"> <li>• This period between infection and production of antibodies lasts (usually) between two and 12 weeks but may continue as long as six months. During this time, a person is infectious but may not test positive on common HIV antibody tests.</li> </ul>
Asymptomatic Chronic Infection	<ul style="list-style-type: none"> <li>• After sufficient induction of the antibody response, viral replication is kept in check. The infected person is asymptomatic (symptom-free) and may remain so for a period varying from a few weeks to 10 years or more.</li> <li>• Early immune depletion - CD4&gt;500. The level of virus is low. HIV replication takes place mostly within lymph nodes.</li> </ul>
Symptomatic HIV Infection	<ul style="list-style-type: none"> <li>• After a time that will vary from one person to another, viral replication resumes and intensifies.</li> <li>• Other infections may play a role in facilitating viral replication.</li> <li>• Viral replication leads to destruction of CD4 cells and progressive immunodeficiency.</li> <li>• As immune depression progresses, the infected person becomes susceptible to OIs.</li> <li>• Intermediate immune depletion – CD4 200-500. Infections start and persist as CD4 count decreases. ART and OI prophylaxis considered.</li> </ul>
Advanced HIV Infection/AIDS	<ul style="list-style-type: none"> <li>• AIDS is diagnosed when an infected person presents syndromic characteristics of severe immune depression.</li> <li>• Advanced immune depletion – CD4&lt;200. Case definition of AIDS is having a CD4 count of &lt;200. OIs develop.</li> </ul>

*OIs are the leading cause of morbidity and mortality in HIV-infected individuals. The most common OIs are preventable and treatable.*

## *Modes of Transmission*

HIV infection is transmitted through exposure to blood and body fluids infected with HIV. Body fluids include: semen, vaginal secretions, breast milk, cerebrospinal fluid, pleural fluid, and synovial, peritoneal, pericardial and amniotic fluid. HIV is spread in three ways:

- Sexual contact with an infected person.
- From infected mother to baby before, during birth or through breast-feeding after birth.
- Through infected blood and blood products (including by sharing needles and through blood transfusions).

The chance that a person will become infected with HIV varies significantly depending on the type of exposure he/she has encountered. For example, the risk of becoming infected with HIV through a blood transfusion with infected blood is very high compared to the risk of becoming infected from an accidental needle prick in the health care setting. Similarly, the risk of acquiring HIV from unprotected oral sex is lower than that of unprotected anal or vaginal sex.

### **Sexual Transmission**

It is estimated that 70-80% of global HIV transmission occurs between infected persons and their partners through unprotected sexual intercourse. The sexual contact may be heterosexual or homosexual. Heterosexual vaginal intercourse is the predominant mode of transmission in many developing countries. While the probability of transmitting HIV in a single sexual act is quite low, even a lower risk activity can become an important way people get infected if it is done often enough. (See Table 2).

The risk of becoming infected with HIV as a result of sexual intercourse depends on the following factors among the host:

- **High viral load.** HIV-infected individuals are believed to become more infectious as they progress to AIDS. In theory, those who have fewer particles of virus circulating in their bodies have fewer particles of virus to pass to their partners during unprotected sex (Baylor, 2006).
- **Primary infection.** The first few months after an individual becomes infected with HIV are known as primary HIV infection, or acute HIV infection. When HIV first enters the body it replicates at very high levels. A viral load test at this stage will usually show extremely high levels of HIV in the blood – often higher than at any other stage of HIV infection.
- **Advanced age.** Individuals who acquire HIV at an older age tend to have more rapid disease progression and shorter survival times.
- **Presence of blood,** semen or genital secretions during contact. The concentration of HIV in blood and therefore genital secretions can be correlated with the risk of sexual transmission.
- **Presence of STI (if route is sexual).** There is increasing evidence that the presence of another STI in one or both partners increases the risk of HIV transmission. Genital ulceration, such as may occur with syphilis or herpes simplex virus infection, appears to increase susceptibility to infection. This may be because blisters, small tears, and other openings in the mucosal lining of the vagina or on the skin of the penis provide a “door” that allows HIV to enter the body (Baylor 2006).

The risk of becoming infected with HIV as a result of sexual intercourse depends on the following factors among the recipient:

- **Being female.** Women are often the receiving partner during vaginal sexual intercourse. Hence their vaginal mucosal surface area is exposed to highly infectious seminal fluid.
- **Being an older female.** The nature of the vaginal tract is very fragile in women who are nearing menopause or on progesterone. The skin is thinner and can tear easily.
- **Being a young female.** The nature of the vaginal tract is very fragile in very young girls. The cervix of adolescent females has transitional cells surrounding the cervical walls that are exposed; this state is referred to as 'ectopy'. These cells are more susceptible to HIV infection.
- **Presence of STIs.** The presence of STIs are more difficult to detect in women, and may be asymptomatic, they will have a higher risk of becoming infected with HIV.
- **Exposure to blood.** An HIV-positive woman's sexual partner(s) has a greater risk of getting HIV, if sexual contact occurs during menstruation.
- **Trauma during sexual activity.** Violent or rough sexual practices can lead to tears in mucosal membranes, thus exposing them to HIV entry. Also, recipients of anal sex are more at risk than oral or vaginal sex. This is due to the rectal mucosa being very thin and prone to tears with high pressure contact during sexual activity.

#### **Transmission through Infected Blood**

Transmission through infected blood accounts for an estimated 5-10% of all HIV infections. Transmission occurs through transfusion with contaminated blood or blood products, contaminated injecting equipment, exchange and re-use of needles or contaminated syringes, and surgical operations where equipment previously used with an HIV-positive patient has not been sterilized. Organ transplants from infected donors can transmit the infection as well. HIV also can be transmitted through direct contact with materials that have been contaminated with infected blood during rituals, such as circumcision and tattooing, and not sterilized before re-use.

#### **Mother-to-Child Transmission (MTCT)**

Not all babies born to HIV-positive mothers will acquire HIV. A baby can acquire HIV from his/her mother in three ways:

- Before birth
- During delivery
- While breastfeeding.

A mother can transmit HIV to her child during pregnancy or delivery or through breastfeeding rates of HIV-1 transmission from mother to child range from 25% to 40% in less developed countries, and from 15% to 25% in more developed countries. Risk of transmission is affected by factors related to the virus, the mother, the delivery process, the baby, and infant-feeding practices. These factors explain the differing rates of HIV transmission between more developed and less developed countries. During pregnancy and delivery, the mother's health, disruption of the placental barrier, pre-term delivery, and hemorrhage are significant predictors of the child's infection.

Other factors that increase the opportunity for transmission during this period include viral, bacterial, or parasitic placental infections. Most infants who acquire HIV during delivery have been exposed to maternal blood or cervical secretions that contain HIV. Prolonged membrane rupture and invasive delivery techniques also have been associated with higher risks of MTCT during labor and delivery. The risk of MTCT increases if a woman has higher viral load, which occurs if she becomes infected or re-infected with HIV during pregnancy or if she becomes ill with AIDS. Following delivery, breastfeeding is the most important risk factor. Without treatment, an estimated one of every seven infants breastfed by an HIV-positive mother becomes infected through breast milk. The risk of transmission is greater when HIV-positive women do not exclusively breastfeed for the first six months, or if complication develops from poor breastfeeding techniques (e.g., with mastitis, cracked and bloody nipples).

**Table 2: Estimated Per Act Risk for Acquisition of HIV-1 by Exposure Route**

<b>Exposure Route</b>	<b>Estimated infections per 10,000 exposures to an infected source</b>
Blood Transfusion	9,000
Childbirth	2,500
Needle-sharing injection drug use	67
Receptive anal intercourse	50
Percutaneous needle stick	30
Receptive penile-vaginal intercourse	10
Insertive anal intercourse	6.5
Insertive penile-vaginal	5
Receptive fellatio	1
Insertive fellatio	0.5

#### **Ways by Which HIV is Not Transmitted**

It is important to know that the following routes cannot transmit HIV:

- Kissing
- Insect bites
- Swimming in the same pool
- Sharing utensils/cook ware
- Beddings, towels and clothing
- Toilet seats
- Eating food prepared by an infected person.

## *Primary Prevention Risk Factors/Behaviours*

**Steps to reduce the risk of sexually acquired HIV are:**

### **Abstaining from sex**

Complete sexual abstinence is the only infallible method for prevention of HIV through the sexual route. Abstinence means not engaging in any sexual activity in which there is a direct or theoretical risk of exposure to blood, semen, or vaginal fluids.

### **Reducing the number of sexual partners**

Being faithful to one uninfected partner reduces the risk of HIV infection.

### **Using a condom or latex barrier consistently during sexual contact**

Correct and consistent use of latex condoms during sexual intercourse (vaginal, anal, and oral) can greatly reduce the chances of acquiring or transmitting HIV and other STIs. Condoms made of latex or polyurethane should be used to prevent transmission of HIV or other STIs. No oil-based lubricants should be used as it weakens the integrity of the condom.

**Avoiding sex with people who may have multiple partners or are engaging in other high-risk activity such as commercial sex or intravenous drug use.**

### **Safe blood supply**

WHO recommends three essential elements must be in place to ensure a safe blood supply (2000):

1. There must be a national blood transfusion service run on non-profit lines which is answerable to the Ministry of Health.
2. Wherever possible, there should be a policy of excluding all paid or professional donors, but at the same time, encouraging voluntary (non-paid) donors to come back regularly. People are suitable donors only if they are considered to have a low risk of infection.
3. All donated blood must be screened for HIV, as well as for hepatitis B and syphilis (and hepatitis C where possible). In addition, both donors and patients must be aware that blood should be used only for necessary transfusions.

### **Safer Use of Injection Equipment**

Anyone who shares injectable needles for drugs, insulin, steroids, and/or tattooing may be at risk of HIV infection. Infected blood left in the needle contains HIV, and when needles are re-used this blood and the HIV enter the second user's bloodstream. Clients can reduce their risk of HIV from unsafe injecting practices by:

- Abstaining from injecting drugs
- Abstaining from sharing needles, syringes, cookers, and other injecting equipment
- Cleaning used needles and syringes three times with bleach and rinsing with water three times (a different source of water each time). The cotton or filter should not be shared.

## Reducing the Risk of Mother to Child Transmission\*

WHO advocates a four-prong strategy to reduce the number of HIV-positive infants:

- Prevent HIV infection among women, especially young women.
- Reduce unwanted pregnancy in HIV-positive women.
- Prevent the transmission of HIV from infected women to their babies (during pregnancy, labor and delivery, and breastfeeding).
- Provide care and treatment to women and their babies and families.

## Definition of Epidemiology

Epidemiology is the branch of medical science that deals with the study of incidence, distribution and control of a disease in a population.

## Origins of HIV

The precise origin of HIV is unknown; however various theories exist that attempt to describe the origin. It is now widely believed that HIV was a result of an animal to human (zoonotic) transfer of a simian immunodeficiency virus. HIV-1 is closely related to a simian immunodeficiency virus (SIV) which infects chimpanzees. HIV-2 is almost indistinguishable from a simian immunodeficiency virus that infects the Sooty Mangabey monkey (Baylor, 2006).

## Historical Timeline of HIV and AIDS

HIV was first documented in 1981 in the United States by the Centers for Disease Control and Prevention (CDC) in Atlanta. The CDC noted an increase of cases of a lung infection called Pneumocystis Jiroveci Pneumonia (formerly known as Pneumocystis Carinii Pneumonia) in young gay men. HIV, or the Human Immunodeficiency Virus, was isolated in laboratories in 1983. Over time many more cases of HIV were diagnosed in the U.S. and Europe and eventually in the Caribbean, Africa and other parts of the world. Eventually, by 1986 HIV had been documented in more than 85 countries. By 1990 the number of people infected with HIV worldwide was estimated at between eight and ten million. Now, more than 25 years later there are an estimated 39.5 million adults and children living with HIV and AIDS.

## Types of HIV

There are two types of HIV that cause AIDS: HIV-1 and HIV-2. HIV-1 is found worldwide and is the major cause of the global pandemic. HIV-2 is mainly found in West Africa, Mozambique and Angola and little is known about this type. Studies have shown that it is similar to HIV-1, but has some differences as well. HIV-1 and HIV-2 have the same modes of transmission and are associated with the same opportunistic infections, but HIV-2 appears to progress at a slower, less aggressive rate (Baylor, 2006; CDC, 1998).

## HIV in the Caribbean

In 2009 an estimated 17,000 people in the Caribbean became infected with HIV, and around 12,000 died of AIDS. After sub-Saharan Africa, the Caribbean has a higher HIV prevalence than any other area of the world, with 1 percent of the adult population infected.

Heterosexual sex is the main route of transmission throughout the Caribbean. Women are particularly vulnerable to HIV infection; more than half of people living with HIV are women.

Other vulnerable groups include men who have sex with men (MSM) who are often overlooked by prevention, treatment and care services. This is despite reports that HIV prevalence is as high as 32% among some groups of MSM.

\*Sources of information: VCT Toolkit, Family Health International; UNAM HIV and AIDS Resource Guide, I-TECH.  
Source of Information: HIV and AIDS Reference Guide, University of Namibia, 2008

HIV-related stigma and discrimination are extremely common in the Caribbean. In some cases, prejudice towards people living with HIV is linked with homophobia; sex between men carries a high risk of HIV transmission and, as elsewhere, people in the Caribbean often associate HIV with homosexuality, despite the fact that the majority of infections occur through heterosexual sex. Reflecting global patterns, heterosexual sex is now the main route of transmission throughout the region, and it has been established that women and young people are particularly vulnerable.

Since countries in the Caribbean face common problems, and resources are limited, the need for a coordinated response to HIV and AIDS has long been recognised. The Pan Caribbean Partnership against HIV/AIDS (PANCAP) was established in 2001, with the aim of preventing the spread of HIV and alleviating the suffering it causes across the Caribbean. PANCAP has brought together governments, non-governmental organisations, private sector groups, faith-based organisations and donor agencies to co-ordinate both prevention and treatment efforts. It has also helped to establish a Caribbean Regional Strategic Framework for HIV/AIDS, under which PANCAP members have made significant progress in drawing attention to the crisis and establishing dialogue between separate groups. In 2004 PANCAP was named a 'best practice' response by the Joint United Nations Programme on HIV and AIDS (UNAIDS).

Some strong responses have been formed on a local level, too: most nations have developed National AIDS Commissions, strategic plans, legislation and HIV-related programmes and services.

### *Human Rights Approach*

People infected with HIV may suffer from violations of their rights when, for example, they face government-condoned marginalization and discrimination in relation to access to health, education, and social services. In this context, the realization of rights by people living with HIV would require non-discriminatory access within a supportive social environment.

A human rights-based approach to HIV and AIDS starts from the premise that human rights abuses contribute to the spread of HIV and undermine attempts to protect people from becoming infected, and once infected, from receiving needed treatment and care. The promotion and protection of human rights must therefore be at the centre of all aspects of an effective response to HIV and AIDS.

### **What Do Human Rights Have To Do With HIV/AIDS?**

Human rights are inextricably linked with the spread and impact of HIV/AIDS on individuals and communities around the world. A lack of respect for human rights fuels the spread and exacerbates the impact of the disease, while at the same time HIV/AIDS undermines progress in the realization of human rights. This link is apparent in the disproportionate incidence and spread of the disease among certain groups which, depending on the nature of the epidemic and the prevailing social, legal and economic conditions, include women and children, and particularly those living in poverty. It is also apparent in the fact that the overwhelming burden of the epidemic today is borne by developing countries, where the disease threatens to reverse vital achievements in human development. AIDS and poverty are now mutually reinforcing negative forces in many developing countries.

## **The Relationship between HIV/AIDS and Human Rights:**

### **Increased Vulnerability**

Certain groups are more vulnerable to contracting the HIV virus because they are unable to realize their civil, political, economic, social and cultural rights. For example, individuals who are denied the right to freedom of association and access to information may be precluded from discussing issues related to HIV/AIDS, participating in AIDS service organizations and self-help groups, and taking other preventive measures to protect themselves from HIV infection. Women, and particularly young women, are more vulnerable to infection if they lack of access to information, education and services necessary to ensure sexual and reproductive health and prevention of infection. The unequal status of women in the community also means that their capacity to negotiate in the context of sexual activity is severely undermined. People living in poverty often are unable to access HIV care and treatment, including antiretroviral and other medications for opportunistic infections.

### **Discrimination and Stigma**

The rights of people living with HIV/AIDS often are violated because of their presumed or known HIV status, causing them to suffer both the burden of the disease and the consequential loss of other rights. Stigmatization and discrimination may obstruct their access to treatment and may affect their employment, housing and other rights. This, in turn, contributes to the vulnerability of others to infection, since HIV-related stigma and discrimination discourages individuals infected with and affected by HIV from contacting health and social services. The result is that those most needing information, education and counselling will not benefit even where such services are available.

### **Impedes an Effective Response**

Strategies to combat the HIV/AIDS epidemic are hampered in an environment where human rights are not respected. For example, discrimination against and stigmatization of vulnerable groups such as injecting drug users, sex workers, and men who have sex with men drives these communities underground. This inhibits the ability to reach these populations with prevention efforts, and thus increases their vulnerability to HIV/AIDS. Likewise, the failure to provide access to education and information about HIV/AIDS, or treatment, and care and support services further fuels the AIDS epidemic. These elements are essential components of an effective response to HIV/AIDS, which is hampered if these rights are not respected.

### **What is a Human Rights Approach to HIV/AIDS?**

Where individuals and communities are able to realize their rights - to education, free association, information and, most importantly, non-discrimination - the personal and societal impacts of HIV and AIDS are reduced. Where an open and supportive environment exists for those infected with HIV; where they are protected from discrimination, treated with dignity, and provided with access to treatment, care and support; and where AIDS is de-stigmatized; individuals are more likely to seek testing in order to know their status. In turn, those people who are HIV positive may deal with their status more effectively, by seeking and receiving treatment and psychosocial support, and by taking measures to prevent transmission to others, thus reducing the impact of HIV/AIDS on themselves and on others in society.

The protection and promotion of human rights are therefore essential in preventing the spread of HIV and to mitigating the social and economic impact of the pandemic. The reasons for this are threefold. First, the promotion and protection of human rights reduces vulnerability to HIV infection by addressing its root causes. The adverse impact on those infected and affected by HIV is lessened. Third, individuals and communities have greater ability to respond to the pandemic. An effective international response to the pandemic therefore must be grounded in respect for all civil, cultural, economic, political, economic and social rights and the right to development, in accordance with international human rights standards, norms and principles.

Nations obligations to promote and protect HIV/AIDS-related human rights are defined in existing international treaties. HIV/AIDS-related human rights include the right to life; the right to liberty and security of the person; the right to the highest attainable standard of mental and physical health; the right to non-discrimination, equal protection and equality before the law; the right to freedom of movement; the right to seek and enjoy asylum; the right to privacy; the right to freedom of expression and opinion and the right to freely receive and impart information; the right to freedom of association; the right to marry and found a family; the right to work; the right to equal access to education; the right to an adequate standard of living; the right to social security, assistance and welfare; the right to share in scientific advancement and its benefits; the right to participate in public and cultural life; and the right to be free from torture and other cruel, inhuman or degrading treatment or punishment. (Consult the UN's Universal Declaration of Human Rights for more information.)

The United Nations human rights instruments and mechanisms provide the normative legal framework as well as the necessary tools for ensuring the implementation of HIV-related rights. Through their consideration of states reports, concluding observations and recommendations, and general comments, the UN treaty monitoring bodies provide states with direction and assistance in the implementation of HIV-related rights. The Special Procedures of the Human Rights Council, including special representatives, thematic and country rapporteurs, and working groups also are in a position to monitor respect for HIV-related rights. The Human Rights Council also requests the Secretary-General to solicit comments from governments, United Nations bodies, programmes and specialized agencies and international and NGOs on steps they have taken to promote and implement, where applicable, programmes to address the urgent HIV-related human rights of women, children and vulnerable groups in the context of prevention, care and access to treatment.

**Human rights and HIV/AIDS to work together in three separate, but related ways:**

**Accountability** - Human rights provide a system for holding governments accountable for their actions.

**Advocacy** - Governments are responsible for what they do, do not do, and should do for their populations. This enables activists to engage in a wide range of advocacy actions targeted towards securing human rights enjoyment and protection for people living with and affected by HIV/AIDS and all other groups vulnerable to HIV infection.

**Approaches to Programming** - Human rights-based approaches to programming aim to integrate human rights principles such as non-discrimination, equality and participation, including the greater participation of PLWHA, into the response at local, national and international levels.



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## Learning Activity 1: Guest Speaker

### **Instructions to Lecturer:**

Instructions for Lecturer:

- Identify a guest speaker to provide students with an hour session on HIV and Care and Treatment for persons who are HIV positive. Possible guest speakers are Dr. Marvin Manzanero and Nurse Lorna Perez from the National AIDS Program.



## Learning Activity 2: Group Discussion

### **Instructions to Lecturer:**

- Each student will be assigned to a group of five.
- Advise students prior to class to bring information on the topics.
- Each group will discuss one of the following topics:
  - o Epidemiology of HIV in Belize.
  - o Epidemiology of HIV in the region.
  - o Epidemiology of HIV in the global context.
  - o Cultural and religious implications of HIV and AIDS.
  - o Human rights approach to HIV and AIDS.
  - o Social and economic impact of HIV in Belize.
  - o Legal issues in the care and treatment of persons living with HIV and AIDS.

### **Instructions to Students:**

- Prepare a booklet on one of the above topics.
- Be sure to cite all your sources using APA style.



## Learning Activity 3: Guest Lecture on Epidemiology of HIV in Belize

### **Instructions to Lecturer:**

- Invite the National Epidemiologist to present a lecture to the students on epidemiology of HIV in Belize/region.
- Give guest speaker clear instructions: topics to include in the lecture, length of time of lecture, and length of time for Q & A.
- Ask students to prepare questions beforehand to ask of the guest speaker.



## Learning Activity 4: Guest Lecture on Human Rights Approach to HIV/AIDS

### **Instructions to Lecturer:**

- Invite a member of the Belize Human Rights Commission (e.g., Mrs. Antoinette Moore) to present a lecture to the students on human rights approach to HIV and AIDS.
- Give guest speaker clear instructions: topics to include in the lecture, length of time of lecture, and length of time for Q & A.
- Ask students to prepare questions before hand to ask of the guest speaker.

\* Any user of the document that these can be modified or a new one be developed where necessary.



## Learning Assessment 1: Test

### ***Instructions to Lecturer:***

- Use the questions below to test students' knowledge of HIV and AIDS information covered in this chapter.
- Assign one question to each student to be answered orally to the large group.
- Correct any inaccuracies in the answers and provide additional information where needed.

### ***Instructions to Students:***

- Answer the question as fully as possible. Use your notes as needed.
- You have 5 minutes to answer the questions.

### **Short Answer questions:**

1. Explain what is the immune system.
2. Explain the difference between HIV and AIDS.
3. Explain the life cycle of the HIV virus.
4. Explain what is a viral load?
5. Explain one mode of transmission of the HIV virus(3 questions)
6. Explain the natural history or progression of HIV infection
7. Explain 3 ways of preventing HIV infections.
8. The risk of becoming infected with HIV as a result of sexual intercourse depends on certain factors among the host. Name at least two of these factors.
9. The risk of becoming infected with HIV as a result of sexual intercourse depends on certain factors among the recipient. Name at least two of these factors.
10. What are the ways HIV can be transmitted in the health care setting from client to health care worker?
11. What are the ways HIV can be transmitted in the health care setting from healthcare worker to client?
12. What are some myths about transmission that you have heard about in your community, where do they come from, and how can we dispel them?

Fill in the blanks:

13. The loss of CD4 cells impairs the immune system and leads to \_\_\_\_\_
14. HIV uses the \_\_\_\_\_ to replicate itself, destroying this cell in the process.
15. Transmission of HIV can NOT occur through \_\_\_\_\_



## Learning Assessment 2: Group Project

### ***Instructions to Lecturer:***

- Each student will be assigned to a group of five.
- Advise students prior to class to bring information on the topics.
- Each group will prepare a booklet on one of the following:
  - Epidemiology of HIV in Belize.
  - Epidemiology of HIV in the region.
  - Epidemiology of HIV in the global context.
  - Cultural and religious implications of HIV and AIDS.
  - Human rights approach to HIV and AIDS.
  - Social and economic impact of HIV in Belize.
  - Legal issues in the care and treatment of persons living with HIV and AIDS.
- Use a rubric to assign a grade to each booklet.

### ***Instructions to Students:***

- Prepare a booklet on one of the above topics.
- Be sure to cite all your sources using APA style.

# CHAPTER 4

## *The National Response to HIV/AIDS, STIs and TB*

### Learning Objectives

- Explain the concept of “health team” and its importance in the care and treatment of HIV/AIDS patients.
- Identify resources available through the national response to HIV.
- Use country reports and UNGASS indicators to assess the response to HIV.
- Determine gaps in the national response and identify possible solutions.



### Reference Information

#### Concepts of “health care team” and “Circle of Care” Health Care Team Members

Often, it takes a team of professionals to address a patient’s health care needs including:

#### Allied Health Professionals

Allied health professionals are educated to carry out specific tests, treatments and services. Operating room technologists, blood bank professionals, X-ray technicians, therapists, pharmacists, hospital chaplains and social workers are all examples of allied health professionals. They are an important part of your health care.

#### Physicians

Your medical care will be provided by a group of physicians who work together as a team.

An **attending physician** is one who specializes in a certain area of medicine or surgery. Your attending physician will supervise the care you receive from the resident physician and medical students. He/she is responsible for involving other members of your health care team including consulting physicians in your prescribed plan of care.

A **resident physician** is a doctor who has completed medical school, received his/her medical doctor degree and is now undertaking intensive training for a medical or surgical specialty. Your resident physicians will be the doctors who write orders and make decisions related to your care under the direct supervision of your attending physician.

#### Nurses

Nurses are more often the largest group of health care workers in the healthcare setting. With the assistance of nurse aides and others, they are available to meet your needs around the clock. With attention to your individual needs, nurses perform a variety of skilled tasks and provide you and your family with information and skills so that you are prepared to leave the hospital or clinic. In addition, nurses help to coordinate your care with other health care team members while making sure you and your family are involved as partners in your care. Nursing students also provide care under the supervision of a registered nurse.

### Dieticians

Dieticians assess your special nutrition needs. They recommend the best diet or feeding to help your body recover. If you are on a special diet, your dietician can help you understand how to follow that diet at home to maintain your health. Dietician assistants will help you with daily menu selection and between-meal snack options.

### Infection Control Professionals

Infection control professionals help prevent health care-associated infections and outbreaks, take proper corrective measures to limit the extent of infection and help ensure that similar episodes are not repeated. Infection control professionals also assist in the training of health care staff in proper infection control techniques.

### Social Workers

Social workers help patients and their families deal with the psychological, emotional and social issues related to injury, hospitalization and after-the-hospital care. They provide information about available hospital and community resources. They can assist with referrals to community agencies for assistance with medical coverage, substance abuse counselling, transportation and disability assistance. Social workers can also provide counsel on a number of issues such as grief, abuse, assault and psychological problems.

### Pharmacists

Pharmacists are important as part of the health care team because they are responsible for dispensing the correct medications for patients and counselling them on the proper dosage and advising them to adhere to medications.

### Medical Laboratory Technicians

These professionals are charged with conducting laboratory tests to assess patients' conditions. It is very important that tests be conducted according to standardized procedures so as to yield correct results.

### Multidisciplinary Team (MDT)

This a group of health care workers and social care professionals who are experts in different areas with different professional backgrounds, united as a team for the purpose of planning and implementing treatment programs for complex medical conditions. They work in a coordinated manner with members who are elected into the team depending upon the patient's needs and the condition or disease being treated. MDT generally consists of an attending physician, a registered nurse, and other appropriate staff. MDT is used interchangeably with another term, interdisciplinary team.

### *The National AIDS Program in Belize - Response to the AIDS Epidemic*

Belize is committed to the adoption of some of the universally accepted best practices for managing the HIV/AIDS epidemic, which are outlined as follows:

- **Multisectoral approach:** There is expressed commitment by several Government agencies to develop their sector plans, to contribute using their comparative advantage in accessing the vulnerable groups, and to lead the development of their respective sector response. Sector plans for the main line ministries have been developed and areas for collaborative action towards a multisectoral approach are clearly articulated.

- **Emphasis on sexual and reproductive health and rights:** Belize is well ahead with its sexual reproductive health (SRH) policy framework but requires improved coordination and joint programming of relevant activities.
- **Universal access to ARV:** The Government has acquired ARV for the treatment of 200 PLWHA; a stated goal is to make ARV universally accessible to all persons requiring treatment.
- **Voluntary counselling and testing Provider Initiated Testing and Counselling:** A network of VCT sites across the country has been in operation. However, more recently, the Ministry of Health under the auspices of the National AIDS Program has adopted a more comprehensive approach to counselling and testing and is advocating for provider initiated testing and counselling.
- **Elimination of stigma and discrimination:** The National AIDS Coalition (NAC) has established a policy and legislation committee, which has drafted a national HIV/AIDS policy and legislation document to address, inter alia, stigma and discrimination of the infected and those affected.
- **Empowerment:** Empower PLWHA and the targeting of vulnerable groups, including youth.

The aim of the HIV/AIDS program is to decrease the risk and impact of STIs/HIV/AIDS through the delivery of efficient and effective HIV/AIDS services in Belize. The program also aims to include the comprehensive management of People Living with STIs/HIV/AIDS. Specifically, the program seeks to:

1. Reduce risk through a voluntary counselling and testing programme and provider initiated counselling and testing.
2. Reduce the impact of HIV/AIDS through access to ARV Therapy and medications for OIs for Belizeans living with HIV/AIDS.
3. Promote the development of monitoring and evaluation procedures for sustainability and quality of care.

The National AIDS Programme is a preventative public health program. It is the Ministry of Health's multisectoral response towards the prevention, treatment and care of Belizeans living with STI/HIV/AIDS. It is a planned activity aimed at making full and rational use of the technical knowledge and health resources available. The programs main activities are:

1. **Information, Education and Communication:** This strategy involves public education as well as continuing education for healthcare workers utilizing different mediums including workshops. Leaflets, posters, radio and television form part of the medium for education.
2. **Counselling:** Pre and post-title counselling are essential components for good clinical care of individuals at risk or infected with STI/HIV. Counselling is integrated with all HIV testing, screening and care. Healthcare workers have attended workshops to increase their counselling skills to provide a better quality of service to clients.

3. **Diagnosis:** Healthcare workers in all six districts have been trained to diagnose STIs and HIV/AIDS based on clinical manifestations. The Central Medical Laboratory plays an important role in the diagnosis of these diseases and at the same time there is a need to increase laboratory capacity at the district level.
4. **Treatment:** Medications are available in Belize to treat STIs. Antiretrovirals are also available in Belize. Certain Opportunistic infections can be treated depending on the treatment.
5. **Surveillance:** The National Health Information and Surveillance Unit monitors the trend of STI/HIV/AIDS in Belize. Cases are detected and reported at the District Information Unit where this information is sent to the National Level.
6. **Contact Tracing:** Prompt and thorough contact investigation is essential to break the transmission of STI/HIV/AIDS. This investigation is implemented by the Public Health Personnel.
7. **Research:** This component will provide recommendations to assist in the implementation of new strategies.

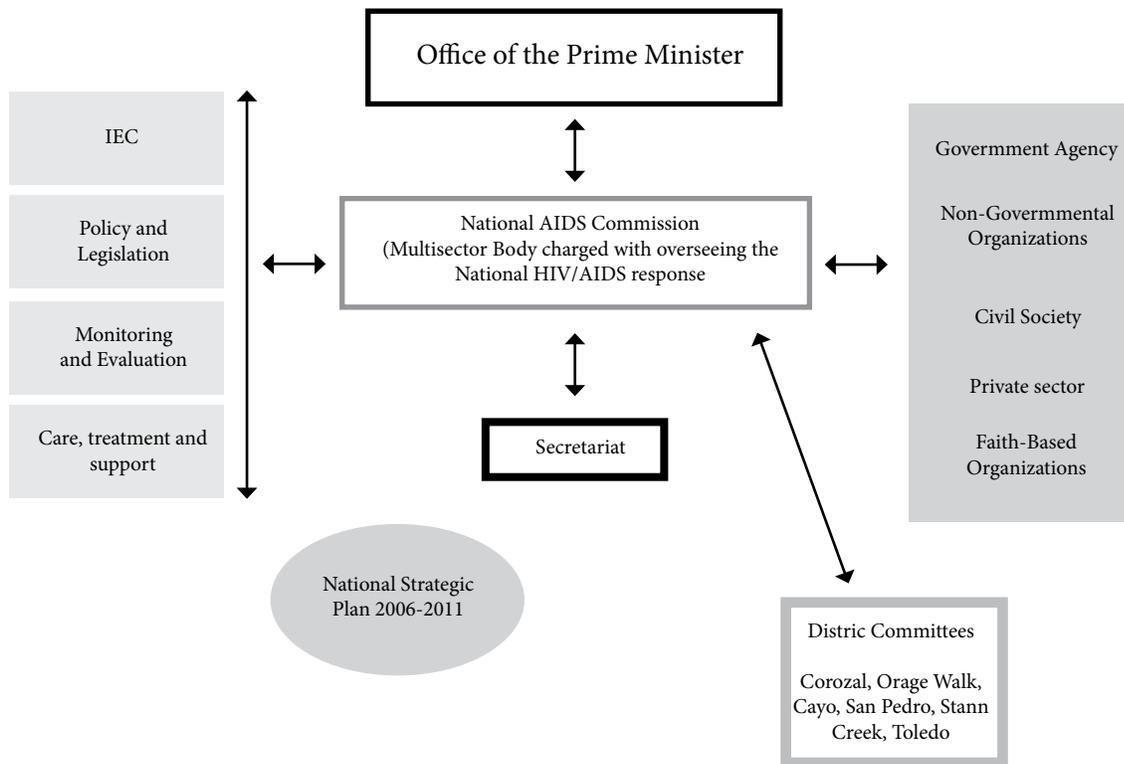
### *National Commitment*

The reduction of the prevalence and the alleviation of the impact of HIV/AIDS in Belize have the highest level of commitment at the uppermost decision making and planning levels in the country. The Office of the Prime Minister is the entity responsible for advancing the HIV/AIDS response in Belize. In 2004, the National AIDS Commission (NAC) was commissioned and legislated by Cabinet to facilitate, coordinate, and monitor the prevention and control of HIV/AIDS in Belize. The NAC is also expected to report progress on the international agreements, facilitate the creation of linkages with regional and international organizations involved in the fight against the HIV/AIDS pandemic and assist in formalizing the direct link of all such partners both locally and internationally to effectively guide the National HIV/AIDS response.

The expanded response of AIDS is led by the National AIDS Commission (NAC), the statutory body in Belize charged with the responsibility for coordinating and overseeing the national response. The NAC through its Chairperson, reports directly to the Office of the Prime Minister. The Act has granted this body the necessary authority to ensure a sustained and broad-based response where resource mobilization efforts should promote a common basket approach for the effective utilization of these resources.

The NAC is therefore expected to promote inter-sectoral collaboration and resource mobilization for the implementation of the national strategic plan, advocating for the establishment and strengthening of relevant programs and services in support of PLWHAs, development of relevant HIV/AIDS policies and legislation for the prevention of stigma and discrimination, and finally, creating the necessary mechanism for monitoring and evaluation of the overall response.

**Figure 1 Structure of the National Response to the HIV/AIDS Epidemic in Belize**



*Source: National Monitoring and Evaluation plan 2006-2011*

### **NAC Role and Responsibilities**

The core responsibilities of the NAC therefore include:

- Building partnerships at the local, regional and international levels.
- Defining the national policy agenda.
- Approving and guiding sectoral plans.
- Approving budgets in support of the implementation of the nsp.
- Establishing national standards.
- Evaluating and monitoring all program targets at the national level.

The Commission also has the flexibility to appoint subcommittees. Such sub-committees include the Policy and Legislation, Monitoring and Evaluation, Care and Treatment and Information-Education and Communication (IEC), Community Based Care to strengthen the response of the Districts and Faith Based Response.

### Composition of the NAC

The NAC is comprised of representatives from all key stakeholder groups, i.e., representatives of government departments that include the Ministries of Health, Education, Labour, Human Development and Tourism as well as PLWHAs, the business sector, youth, other non-governmental organizations (NGOs), faith-based organizations (FBOs), community-based organizations (CBOs), and representatives of district AIDS committees. The UN agencies and other such entities serve as technical partners to the national counterparts.

The Commission consists of the following members:

- The Chairperson appointed by the Prime Minister.
- A Representative of the Ministry of Health.
- A Representative of the Ministry of Human Development.
- A Representative of the Ministry of Education.
- The Labour Commissioner or his/her representative.
- A Representative jointly nominated by the Medical Practitioners Association and the Dental Practitioners Association.
- A Representative from the Nurses Association.
- A Representative from the Council of Churches.
- A Representative from the Opposition Party with the largest number of members in the House of Representatives.
- Four Representatives from Non-Governmental Organizations involved in HIV/AIDS prevention and intervention.
- A Representative from the United Nations Theme Group on HIV/AIDS as technical liaison.
- The Chairperson of the National Committee for Families and Children.
- Four Representatives from community-based groups involved in HIV/AIDS prevention and intervention.
- A representative from the Ministry responsible for youth.
- A Representative from the Ministry of Tourism.
- A Representative from the private sector nominated by the business community
- A person living with HIV/AIDS.

The Secretariat of the NAC was been established to support the work of the commission. The NAC Secretariat will be responsible for facilitating the overall coordination, monitoring, and evaluation role of the commission and ensures the effective implementation of the National Strategic Plan. The National Strategic Plan (NSP) for Belize is valid for the years 2006-2011. The overall goal of the national response is to reduce the impact of HIV/AIDS on the economic, social, and cultural contexts in Belize



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3. UNAIDS, 2012, "Belize Country Report, 2012", Belize, Available from: [http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/progressreports/2012countries/ce\\_BZ\\_Narrative\\_Report%5B1%5D.pdf](http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/progressreports/2012countries/ce_BZ_Narrative_Report%5B1%5D.pdf).



## Learning Activity 1: Role Play

### **Instructions to Lecturer:**

- Divide students into groups of five.
- Assign each group to research the concept of "health care team."
- Each group will develop a skit to depict the importance of working as a health team and the potential problems arising when a one or more members of the team do not collaborate in the team effort.
- Skits should be about 10 minutes long and should include all members of the group.
- At the end of each skit, ask the group to explain the meaning of the skit.

### **Instructions to Students:**

- Prepare a booklet on one of the above topics.
- Be sure to cite all your sources using APA style.



## Learning Activity 2: Guest Speaker

### **Instructions to Lecturer:**

- Invite the Directors of the National AIDS Program and the Director of the National AIDS Commission to give a lecture on the National Response.
- Indicate to them the topics to cover, the length of time, and the length of time for Q & A. (Other Resource Persons include: Dr. Victor Perera – Capacity Project; Director, Hands in Hands Ministries).

### **Instructions to Students:**

- Be prepared with questions a priori to ask the presenters.
- Engage the presenters on your own observations of the national response and what you deem to be weaknesses.



## Learning Assessment 1: Research Paper

### **Instructions to Lecturer:**

- Assign students a research paper to write on one of the following areas in the National Response (this should be assigned earlier in the semester).
  - Coordination
  - Harmonization
  - Monitoring and Evaluation
  - Evidence-based policy formation and implementation
  - Resource-mobilization.
- Students should identify strengths and weaknesses and identify possible solutions to gaps noted.
- Each student will do a five minute presentation of their research paper.
- Use a rubric to grade the presentation and research papers.



## Learning Assessment 2: Data Analysis (UNGASS Indicators)

### **Instructions to Lecturer:**

- Assign students to small groups of four.
- Provide booklet/pamphlet with UNGASS indicators (can be obtained from NAC).
- Ask students to analyze the data and suggest reasons for the low performance in certain indicators and high performance in others.
- Suggest possible solutions to improve performance in the low performing areas.

# CHAPTER 5

## ***Counseling and Testing***

### Learning Objectives

- Explain the rationale for counselling and testing.
- Explain the guiding principles in counselling and testing.
- Explain the testing and counselling guidelines for VCT/PITC.
- List the basic components of VCT/PITC.
- Describe the standard diagnostic tests for HIV infection and identify tests done in Belize.
- Explain the importance of using two or more tests to diagnose HIV infection.
- Conduct VCT and PITC counselling.
- Explain test disclosure procedures.



### Reference Information

#### Rationale for Counselling and Testing

HIV counselling and testing is the cornerstone of early access to prevention as well as to care and support. In addition to supporting a client's right to know his or her HIV status, HIV counselling and testing can also focus the client's attention on prevention and care efforts, which the client may not have considered. Since knowledge of HIV status is a prerequisite to accessing PMTCT services and ART, HIV counselling and testing also forms an essential component of these initiatives and programs. There are numerous benefits of HIV counselling and testing:

#### For the Individual

- Empowers the uninfected patient to protect himself or herself from becoming infected with HIV
- Assists patients infected with HIV to protect themselves and their partner(s) and to live positively
- Offers the opportunity for treatment of HIV-related infections.

#### For the Couple

- Supports prevention efforts in the relationship (particularly for couples who are not monogamous or who are not faithful).
- Encourages family planning and treatment to help prevent mother-to-child transmission of HIV.
- Encourages faithfulness as couples can discuss the health of the ill member together.
- Allows the couple or family to plan for the future.

### For the Community

- Facilitates HIV testing to become a more routine blood test, which could diminish the stigma of HIV and demystify counselling and testing for the virus.
- Impacts positively on community norms such that HIV testing, risk reduction, discussion of status, condom use, and accessing ARVs are part of health care.
- Helps to decrease transmission in the community: those who know they are HIV positive will be counselled on the use of condoms/abstinence for prevention, those who test positive will be counselled on positive living, and those eligible for ART can decrease their viral loads with treatment thereby lowering the risk of transmission.
- Reduces stigma as more people living with HIV “go public” about their status.
- Serves as a motivation for the implementation of prevention, treatment, care, and support services
- Promotes awareness of HIV in order to reduce HIV transmission and hopefully change the course of the epidemic.

### The National Health Care Delivery System

- Helps get more people into treatment, which has a positive impact on the health delivery system.
- Helps in planning prevention, treatment, and care programs.
- Helps in resource allocation.

Counselling and testing are used at every stage of the prevention and management of HIV. For example, pre-test counselling, rapid diagnostic tests, and post-test counselling enable more people to know their status and thus start to manage their own risk for transmitting or acquiring the disease. Additionally, ART initiation counselling and baseline diagnostic testing also provide information on whether to initiate patients on ART. Once on ART, follow-up counselling enables providers to evaluate disease progression and monitor ART adherence.

## *Guiding Principles in Counselling and Testing*

### Basic principles include the following:

- All testing is voluntary.
- Informed consent must be provided.
- Pre- and post-test counselling should accompany every HIV test.
- Post-test services should be provided after every test.
- Confidentiality must be protected.

### All testing is voluntary

HIV testing is never made mandatory or forced upon patients or clients.

### Informed consent must be provided

Anyone 16 years of age and above requesting testing should be considered able to give informed consent. People younger than 16 who are at risk should be considered “mature minors” and it is up to the counsellor as to whether the minor is mature enough to access testing without guardian support.

Although the process of obtaining informed consent varies according to setting, all people who are offered HIV testing should receive sufficient information. They should be assisted to have an adequate understanding of the HIV testing process and possible consequences of being tested.

Information regarding consent may be presented orally or in writing and in a language the patient can understand. Accepting or refusing testing should not have detrimental consequences to the quality of care offered. The three crucial elements in obtaining truly informed consent in HIV testing are as follows:

- Providing pre-test information on the purpose of testing and on the prevention, treatment, care, and support services available once the result is known.
- Ensuring understanding of the testing process and its ramifications.
- Respecting the patient's right to decide if he or she wants to be tested or not.

Information regarding consent may be presented separately from, or combined with, other consent procedures for health services (e.g., as part of a package of tests or care for certain conditions).

#### **Pre- and post-test counselling should accompany every HIV test**

An HIV test should include two counselling sessions: the initial counselling session followed by the HIV test; and a second counselling session to provide the client with his or her test result.

#### **Post-test services should be provided**

In the context of counselling and testing, referral is the process by which the client's immediate needs for prevention, care, and support services are assessed and prioritized and the client is provided with assistance (e.g., setting up appointments, providing transportation) to access these services. Referral should also include the basic follow-up efforts necessary to facilitate initial contact with care and support service providers.

#### **Confidentiality must be protected**

Confidentiality means keeping patient information to oneself and not disclosing it to unconcerned people who do not have a relationship with the patient or to people of whom the patient does not approve. A trusting relationship will allow people who are seeking help to be confident that information about them will not be disclosed or shared with other people. People have the right to privacy and to decide with whom information about them is shared.

### *Counselling for HIV Testing*

There are two main types of HIV counselling and testing (HCT): client-initiated, or voluntary counselling and testing (VCT), which the client initiates, and provider-initiated HIV counselling and testing (PITC), which the provider initiates. The definitions below highlight the main differences between each type of counselling (WHO 2007).

**Client-initiated HIV Counselling and Testing** (also called Voluntary Counselling and Testing, or VCT) involves individuals actively seeking HIV Counselling and Testing at a facility that offers these services. Client-initiated HIV Counselling and Testing usually emphasizes individual risk assessment and management by counsellors, addressing issues such as the desirability and implications of taking an HIV test and the development of individual risk reduction strategies. Client initiated HIV Counselling and Testing is conducted in a wide variety of settings including health facilities, stand alone facilities outside health institutions, through mobile services, in community based settings and even in people's homes.

**Provider-initiated HIV Counselling and Testing** refers to HIV counselling and testing which is recommended by health care providers to persons attending health care facilities as a standard component of medical care. The major purpose of such testing and counselling is to enable specific clinical decisions to be made and/or specific medical services to be offered that would not be possible without knowledge of the person's HIV status. Provider-initiated HIV counselling and testing is neither mandatory nor compulsory.

Regardless of the type of counselling employed, the purpose of HIV counselling and testing is to help individuals and couples to assess their HIV risk behaviours, know their status, develop a risk reduction plan, adopt risk reduction behaviour and access medical and psychosocial referral services. Client-initiated approaches have been the primary model for providing HIV testing and counselling, but coverage of client-initiated HIV testing and counselling services is inadequate in both high-income and resource-constrained settings due to multiple factors, including stigma and discrimination, limited access to treatment, care and health services in general, as well as gender issues (WHO, 2007).

The persistent late diagnoses of HIV infection and the high proportion of people with HIV who are unaware of their HIV status have become increasingly concerning. As a result, a number of countries, including Namibia, are instituting provider-initiated HIV testing and counselling to ensure that HIV is more systematically diagnosed in health care facilities. This will facilitate patient access to needed HIV prevention, treatment, care and support services (WHO, 2007).

### **Voluntary Counselling and Testing**

In most countries, the most common model for HIV testing in both clinical and nonclinical settings is client-initiated or voluntary counselling and testing (VCT). In this model, testing is initiated by a client seeking to learn his or her status for the purposes of prevention of HIV infection and life planning. This model places particular emphasis on counselling for behaviour change, rather than just focusing on testing. Counselling is always client-centred and is usually one-on-one. Along with offering the HIV test for clients who wish to know their HIV status, the counselling session also focuses on giving clients important prevention information, and helps the clients develop risk reduction steps to lower their risk of HIV infection.

A VCT process includes two counselling sessions: the initial counselling session followed by the HIV test, and a second counselling session to provide the client with his or her test result. Assistance and support are provided for both negative and positive test results, and referrals are made for further support and medical services.

VCT is designed to be a brief and focused approach. With practice, each of the two sessions can be accomplished in 15 to 20 minutes (sessions with HIV positive clients will take longer). VCT delivery approaches are outlined below and include services for the following:

- Individual (pre, post and ongoing/supportive counselling).
- Couple (pre-marital, pre-conception, and PMTCT-related counselling as well as pre, post and ongoing/supportive counselling).
- Family (where members of a family can discuss the impact of HIV on the individual and the family system).
- Group (information sessions on pre- test education and awareness of HIV transmission only and post-test support groups).

## *Individual Counselling*

### **Pre-test Counselling**

The aims of pre-test counselling are to:

- Ensure that any decision to take the test is fully informed and voluntary.
- Prepare the client for any type of result, whether negative or positive.
- Conduct a risk assessment that will determine the client's level of risk for HIV.
- Facilitate a risk reduction plan with the client.
- Discuss other benefits of knowing one's status as part of future plans.
- Discuss with the client, a workable plan or steps to help the client reduce the risk of either acquiring HIV infection or passing the virus on to others.
- Inform the client of all support services available, whether client decides to test or not to test.

### **Explaining the Meaning of Test Results**

Clients considering an HIV test must be provided the information they need to make an informed decision. The counsellor should initiate the conversation by asking the client what he or she knows about the HIV test. The counsellor can then provide information about HIV testing as needed, describe the laboratory procedures used at the VCT centre, reiterate that the test is anonymous, and correct any misconceptions. Given that clients often have concerns about the accuracy of the test and pose specific questions about the laboratory procedures used, it is important that counsellors be knowledgeable about the testing procedures and demonstrate this knowledge. The counsellor should tell the client how long it will be before the test results are available. If the test requires a fee, the client needs to be informed about the cost and acceptable methods of payment.

### **Preparing for Test Results**

The following steps can help prepare clients for their test results:

- Talk to the client about getting support during the testing process.
- Ask the client whether anyone else knows he or she is taking the test.
- Find out whether the client has anyone to talk to while waiting for results.
- Encourage the client to use his or her existing support systems.
- Ask the client to consider bringing another person for support when coming in for results.
- Ask clients what it would mean to them to receive a negative or a positive result, and make plans with them to outline what they would do in each case.
- Counsellors should assure clients that results are given in a private and confidential setting.

It is important to remind clients that their last possible exposure to HIV and the subsequent six-month window period have a bearing on the test result, and that they can choose to re-test. Finally, counsellors can ask clients whether they know anyone who is HIV-positive. It may be helpful for the counsellor and the client to understand the significance of HIV in the client's life as well as the kind of role models the client may have for living with HIV. Counsellors should offer additional pre-test counselling if the client feels unsure or has more questions about testing.

### Post-Test Counselling

One aim of post-test counselling is to help clients understand and accept their test results. Post-test counselling is also a chance for counsellors to help clients make choices based on their results. Messages will be different for those who test positive and those who test negative.

### Giving HIV Test Results

Counsellors should give clients their test results only when they feel the clients have received adequate counselling. For counsellors, telling someone that his or her test is positive can be difficult and uncomfortable. Some of the most common fears among counsellors are that clients will harm themselves or others, or that they will leave and not return. Although these fears are valid, they often diminish as counsellors gain experience in giving clients their test results. Following are suggested steps for giving results:

- Begin the post-test session by asking how the client has been feeling since he or she had the blood drawn, and congratulate the client on returning or waiting for the results.
- Ask whether the client has any questions, while understanding that most clients will want the test results as soon as possible.
- When the client is ready, give the test results in a neutral tone of voice and wait for the client to respond before proceeding. For a positive test result, say, "Your test result was positive. That means you are infected with HIV." For a negative result, say, "Your test result was negative. That means we did not detect any antibodies for HIV."
- Before proceeding, it is important to make sure the client has understood the test results and integrated the information cognitively and emotionally.
- Assess cognitive understanding by asking the client to tell you what the test result means. Check for misperceptions or misinformation.
- Assess emotional understanding by asking the client how he or she is feeling at that moment, and allowing the client to express his or her emotions.
- Proceed to behavioural integration only when the client is ready to talk about what he or she plans to do next. Behavioural integration requires the client to make an immediate plan, including partner notification and modifying the risk-reduction strategy (or other behaviour changes), depending on the test results and the client's situation.

### Possible Client Reactions

Clients can react to a positive test result in a variety of ways, from resignation to severe shock and disbelief. Some clients assume they will become ill immediately and die. It is important to remind them of the difference between HIV and AIDS, and to point out that, with HIV, it is possible to remain healthy for a long time. Counsellors should ask clients what they are planning to do when they leave the session and, if necessary, remind them of the plan they made during the pre-test session. Counsellors need to assess clients' social support systems and their plans for partner notification. Although clients who receive a positive test result are not likely to be concerned about safer sex during the first post-test counselling session, it is important to remind them of their risk-reduction plan and the necessity of protecting their partners from infection and themselves from re-infection.

There is also a wide range of potential client responses to a negative test result. Counsellors must not assume that clients will react with relief and happiness to such a result. Clients who receive negative results often tell counsellors they will stay safe by no longer having sex. While acknowledging clients' intention not to have sex, counsellors must be sure that clients have sufficient skills and a plan to protect themselves in the event they do have sex. Counsellors should ask clients who test negative whether they intend to tell their partner(s) they were tested, and should engage clients in planning how to discuss risk reduction with their partner(s).

After a client's HIV status is known, the counsellor may want to work with the client to revise his or her risk reduction plan. The counsellor should remind the client of the need to retest if he or she received a negative test result but has engaged in high-risk behaviour over the previous three months. The counsellor should encourage all clients who receive a negative result to consider the possibility they could be infected but not yet showing HIV antibodies.

At this stage, the counsellor should ask specific questions to ascertain the client's ability to cope, assess whether he or she has a history of threatening suicide or harming others, and learn whether the client has had any recent unfortunate experiences. The counsellor must also determine whether the client has a specific plan to inflict harm on himself or herself or others, and whether he or she has the means to pursue such a plan. If the answer to any of these questions is "yes," the counsellor must contact a trained clinician to evaluate the client and assess possible interventions. If clients need services that are not available at the VCT centre, they should be informed of other available counselling services and/or be referred to community resources.

### *Individual Counselling*

The goal of counselling is to explore, discover, and clarify ways of living more resourcefully. To achieve this, counsellors need certain interpersonal and communication skills.

#### **Interpersonal Skills**

##### **Establishing Rapport**

Establishing rapport with clients is crucial in all counselling situations and is key to developing a trusting relationship. Developing rapport demonstrates the counsellor's interest in and respect for a client's issues and concerns. Building rapport is an ongoing process that can be facilitated by:

- Respect and lack of judgment.
- Presence of common or complementary goals.
- Open verbal and non-verbal communication.
- Mutual trust.

One useful technique to establish rapport is "nth-degree" questions, such as, "What's the worst thing that could happen?" or "If we could only deal with one thing today, what would be most important to you?" Such questions help define and prioritize a client's agenda and may be particularly appropriate at the beginning of a session.

Furthermore, through this process the counsellor is able to encourage the client to be explicit in describing sensitive issues, including sexual behaviour patterns. In this way, it may be possible for the counsellor to determine the client's risk level accurately and develop a realistic risk-reduction plan.

### Ensuring Privacy and Confidentiality

Contrary to previously held notions that confidentiality is a strictly Western concept, research indicates that clients everywhere need to be assured of privacy and confidentiality. The counsellor can ensure privacy and confidentiality by:

- Providing adequate and appropriate space for counselling to take place.
- Understanding that no information about a client can be divulged without the client's consent.
- Maintaining adequate records of any work with a client and taking all reasonable measures to preserve the confidentiality of the information.
- Ensuring that colleagues, staff members, and trainees understand and respect the need for confidentiality in counselling services.
- Being aware that notions of shared confidentiality and partner notification often raise an ethical dilemma in the context of HIV counselling. (The term "shared confidentiality" refers to confidentiality that is shared with a limited number of people, such as family members, loved ones, caregivers, and trusted friends. This is provided only on request and consent of the person undergoing testing).

### Showing Respect

Counsellors need to understand that people regard and cope with their predicaments in uniquely personal ways determined by numerous factors, including culture, social class, and personality. Recognizing the fundamental rights, dignity, and worth of all people is critical. This can be achieved when counsellors are aware of cultural and role differences of gender, race, ethnicity, religion, sexual orientation, disability, and socio-economic status, yet eliminate personal prejudices and biases about such differences. Counsellors must not participate in or condone discriminatory practices based on these differences. Counsellors must also respect clients' views and beliefs and build on them. Furthermore, counsellors should be aware that their own attitudes and actions can convey respect or lack of it. The following actions help demonstrate respect for clients:

- Helping clients make informed decisions about their lives and supporting them through the process (without telling them what to do).
- Keeping appointments and apologizing for lateness or failure to keep an appointment.
- Being a "guide/facilitator," not a "preacher".
- Showing concern for clients' welfare.
- Seeing each client as a unique individual.
- Seeing clients as capable of determining their own fate.
- Assuming clients' goodwill unless they demonstrate otherwise.

### Showing Empathy

The ability to empathize is one of the most essential counselling skills. Empathy involves identifying with the client, understanding their thoughts and feelings, and communicating that understanding to the client. For a counsellor to communicate an understanding of a client's world, he/she must get in contact with that world (i.e., understand the client so well that the counsellor feels like the client). Simply stated, this means that counsellors should "put themselves in their clients' shoes." Empathy requires sensitivity and a moment-by-moment awareness of fear, rage, tenderness, confusion, or whatever the client may be experiencing.

To understand what the client is feeling, the counsellor must be attentive to the client's verbal and nonverbal cues. The counsellor needs to ask himself/herself:

"What feelings is the client expressing?"

"What experiences and behaviours underlie these feelings?"

"What is most important in what the client is saying to me?"

### **Acknowledging Difficult Feelings**

The presence of difficult feelings is a substantial and unavoidable component of counselling. To help address difficult feelings, Counsellors should:

- Be aware of their own feelings
- Acknowledge clients' feelings and realities
- Understand that it is not the counsellor's job to take feelings away or to fix them
- Articulate and respond to non-verbal messages
- Normalize and validate clients' feelings.

Counsellors may want to resolve problems and fix feelings, but often feelings cannot be fixed; rather, they need to be acknowledged. Examples of statements that acknowledge a client's feelings are: "This must have been hard to deal with," and "So you believe that he cares for you, but it hurts to think about him having sex with someone else".

### **Offering Acceptance**

For clients to be honest in describing their problems and concerns during counselling, it is critical that he/she feel acceptance. The counsellor can facilitate this by being nonjudgmental and accepting, irrespective of socioeconomic, ethnic, or religious background, occupation, or personal relationships. Counsellors should appreciate the stress caused by the fear of being infected or the need to change behaviour, and accept the consequent emotions and reactions. Even if hostility is directed toward the counsellor, he/she should recognize they are not the real target and refrain from reacting. To validate acceptance, the counsellor recognizes feelings such as anger, sadness, and fear in a direct, unemotional way, indicating in words and behaviour, "Your feelings are very strong. I accept them, and I accept you".

### **Communication Skills and Techniques**

A major component of a counsellor's job is communicating with clients. This exchange is a two-way dialogue of both verbal and non-verbal communication methods. To identify a client's needs and provide appropriate information; counsellors must have solid communication skills. It is imperative that the counsellor understand the client's communication and be clear in his or her own communication with the client. The following skills are important in building effective communication.

### **Attending and Listening**

The term "attending" refers to a counsellor's ability to pay close attention to the client by limiting distractions and demonstrating that he/she is giving the client full attention. Attending involves using responsive non-verbal skills such as listening, eye contact, relaxing, and using natural hand movements. Responding to the client by nodding affirmatively and using key words such as "yes" and "I see" when appropriate demonstrates attentiveness. Maintaining eye contact shows that the counsellor is engaged with the client, though clients who are annoyed, nervous, or embarrassed might try to avoid it. Maintaining eye contact will increase the client's confidence and facilitate better counsellor-client communication. The counsellor should distinguish between eye contact and staring, which could make the client feel uncomfortable.

Attending to the client is also improved when the physical counselling space is comfortable. The space can be improved by arranging a comfortable seating plan, with a culturally appropriate distance between counsellor and client. Minimizing distractions, such as noises or disruptions, can also help create a facilitative atmosphere. The term “listening” refers to the ability of the counsellor to actively listen to the client when he/she is talking. Listening signals concern for the client’s problems and allows the counsellor to detect common themes and revealing omissions in the client’s remarks. For instance, a client may say, “I’m worried and I want to know my status. I know that my partner has another sexual partner.” The common theme here is that a client perceives himself or herself to be at risk of HIV/AIDS because of the partner’s behaviour.

The “revealing omission” here might be that the client is not using condoms, or that the client fears rejection, violence, or abandonment if he or she introduces condoms into the relationship.

While listening, the counsellor should pay attention to the following:

- The client’s experience: what the client sees as happening or not happening to himself or herself.
- The client’s behaviour: what the client does or fails to do.
- The client’s feelings: the emotions that arise from experience and behaviour.
- The client’s problems and worries: client explanations rather than counsellor assumptions.
- The counsellor’s body language: the gestures, facial expressions, intonation, distance, etc., that indicate the counsellor is listening and understands what the client is saying;
- The client’s perceptions: the client’s point of view when talking about his or her experience, behaviours, and feelings.

To demonstrate listening, the counsellor should reflect briefly what the client told him or her, paraphrasing the client’s words. If the client gets no comments for two to three minutes, the client might conclude that the counsellor has lost interest or disapproves of what the client has just said, or that the counsellor does not understand the client. Counsellors can use a formula that expresses the client’s principal feeling, such as “You feel . . . because . . .” (e.g., “You feel relieved because you now know your HIV status and you are able to change your behaviour to remain negative”).

### **Showing Immediacy**

In the context of HIV counselling, “immediacy” refers to the ability of a counsellor to deal with a situation affecting the way he/she and a client are relating at the given moment (e.g., if the client is exhibiting hostility toward the counsellor). Immediacy involves the ability to:

- Reveal how another person is affecting you.
- Explore your own behaviour toward the other person.
- Share observations about the other person’s behaviour toward you, or point out discrepancies or distortions.
- Invite the other person to explore the relationship with a view to improving it.

### Using an Appropriate Language Level

When communicating with clients, it is important to note that distressed clients often remember little of what they are told. Among the most common reasons for lack of recall is a counsellor's use of technical or unnecessarily complicated language. Counselling is more effective when the counsellor:

- Uses simple and culturally appropriate language.
- Ensures that clients feel they are understood, and that a common communication level is employed.
- Explains important points more than once; if a counsellor wants a client to leave with a particular message, the counsellor should deliver the main message first, then deal with specific details, and, finally, repeat the message in summing up.
- Puts important points in writing, when appropriate, or uses visual diagrams as memory aids so clients can refer to the points after a session; printed materials, such as pamphlets or brochures, also may serve this purpose.

### Using Impersonal Statements

In making a general point, impersonal statements (also known as the "third-person technique") can be helpful in reflecting clients' unspoken but nonetheless perceived feelings. This technique is very useful to acknowledge, reflect, and normalize the client's feelings and avoid creating defensiveness. Examples of third-person statements are:

- "People can feel a lot of confusion and guilt when they hear information about HIV".
- "When I've given HIV test results to clients, sometimes they've wanted to talk about what they could do to keep themselves healthy and where they could go for help".
- "People often feel uncomfortable and guilty when you talk to them about HIV/AIDS."
- "Some of my clients want to know how they can stay in good health and where they can find help."

Counsellors can also use this technique to present choices, as in the following examples: "Some people decide to abstain from sex, while others choose to remain faithful to one partner. Still others prefer to use condoms, and some never use them. To avoid becoming infected with HIV, you must decide which of these options suits you best."

### Asking Open-Ended Questions

Open-ended questions give clients an opportunity to express themselves freely and make it easier for the counsellor to identify their needs and priorities. Open-ended questions are useful in starting a dialogue, finding a direction, and/or exploring a client's concerns. But counsellors should avoid long-winded, leading, or judgmental questions. Questions that can be answered with a simple "yes" or "no" are not open-ended. Following are types of open-ended questions for counselling sessions:

- **How:** "How do you think the virus is passed from one person to another?" "How much do you know about the risk factors or lifestyles of the people you are having sex with?"
- **What:** "What do you understand by the word 'confidentiality'?" "What do you know about HIV infection?" "What do you know about how HIV is transmitted?" "What do you think about using condoms?"
- **Who:** "Whom have you spoken to about taking an HIV test?"
- **Why:** "Why" questions must be chosen carefully because they can be taken to imply accusation or judgment, which can make a client defensive. The counsellor should ask "why" questions of a positive nature, those that can help clients explore the dynamics of their successes, rather than their failures. An example of a positive "why" question is: "That's terrific! Why do you think you were able to use a condom that one time?"

Though it is recommended that counsellors use open-ended questions as much as possible, they should recognize when closed questions are appropriate. For example, obtaining a client's consent for an HIV test or partner notification requires that the client provide only a simple "yes" or "no."

### **Using A Non-Directive Approach**

Exploring options rather than issuing directives minimizes the chance that a power struggle will arise between counsellor and client. When discussing behaviour change, counsellors should avoid such directive statements as, "You have to use a condom every time you have sex!" Instead they can put responsibility in the client's hands (a "buffet" approach), giving the client control over decisions that meet his or her needs by asking, for instance, "What do you think you could do to protect yourself?" Given such a question, some clients may decide not to have sex at all; others may decide to have sex only with one monogamous partner for their entire lives; others will find ways to be sexually active without having intercourse; and still others will opt to use condoms and other barrier methods. The communication skills described above can be complemented with the following specific communication techniques:

### **Clarifying**

During a counselling session there are many opportunities for either party (client or counsellor) to be unclear on what has been said. Clarifying unclear points can enhance simple communication (e.g., by asking, "Do you mean...?") or supply facts (e.g., by asserting, "No, HIV is not transmitted by eating from the same dishes").

### **Paraphrasing**

Active listening requires reflecting on what the client has said. Paraphrasing—restating the client's words in the counsellor's own words—helps achieve this objective. To paraphrase effectively, the counsellor must listen actively; the counsellor must determine what is being said and check with the client that the paraphrase is accurate. Paraphrasing in the counselling session is meant to:

- Show that the counsellor is paying attention to the client.
- Facilitate understanding.
- Validate the client's statements.
- Encourage the client to explore his or her concerns further.

Occasionally paraphrasing can be ineffective, particularly when the counsellor:

- Repeats exactly what the client said.
- Uses technical language.
- Is judgmental.
- Debates the client.
- Fails to gain the client's acceptance of the paraphrase.

### **Reframing**

Reframing involves responding to a client's comments and then presenting a positive view of the issue. For example, when a client says, "You can't feel anything when you wear condoms!" an example of reframing might be, "You're right, condoms can reduce sensation. And, you know, lots of men find that when they use condoms they stay erect longer, and they do not have to worry about unplanned pregnancies, STIs, and HIV".

### **Reflecting Feelings**

Reflecting feelings is similar to paraphrasing, but it deals specifically with a client's feelings. Counsellors reflect feelings by formulating responses that:

- Demonstrate understanding.
- Identify basic feelings being expressed verbally or non-verbally.
- Recognize the level of intensity of a client's feelings.
- Capture the association of feelings to words.
- Confirm that the client's feelings are normal.

Below are useful phrases to reflect feelings in a counselling context, particularly when the client is primarily expressing feelings and not giving clues about the association:

- "You feel (feeling word: sad, anxious, relieved, etc.) because (paraphrase) . . ."
- "You seem (feeling word: confused, happy, excited, etc.). What's happening to you?"
- "How are you feeling about that?"

Occasionally reflecting feelings can be ineffective, particularly when the counsellor:

- Paraphrases content without naming or prompting for a feeling.
- Uses feeling words of a very different intensity from those used by the client.
- Uses psychoanalysis, a cold tone, and/or clinical jargon.
- Adds judgmental interpretations or content.

### **Repeating information**

At times of stress and crisis, people may be in a state of denial or feel overwhelmed, so they may not always comprehend everything they are told. Counsellors should repeat important information for the client if they believe he or she has not absorbed what has been said. Indeed, Counsellors should repeat supportive statements or facts as often as necessary to ensure the client understands risk, illness, and health management issues.

### **Summarizing**

When clients first learn they are infected, they may respond with rapid speech, provide details to rationalize their results, or, stunned by the news, ask more questions than the counsellor can absorb or comprehend. Sometimes it is helpful for the counsellor to interrupt and summarize what both counsellor and client have said. This is much like paraphrasing in that it helps ensure that each person understands the other correctly. Summarizing also can guide and direct clients as they try to sort out emotions, deal with practical matters, and make plans. At the end of each session, the counsellor should summarize the salient points of the discussion and highlight decisions that have been made and need to be acted upon.

### **Probing**

Probes are verbal tactics to help clients talk about themselves and define their concerns concretely in terms of specific experiences, behaviours, and feelings. Probing also helps identify themes that may emerge when exploring these elements. Probes can help clients explore their initial concerns, examine issues more fully, and/or explore different goals. They can encourage and prompt clients when the clients fail to take those steps spontaneously. Probing can take the form of statements, interjections, or questions. Counsellors can use statements to help a client discuss or clarify relevant issues. For example, a client may come in looking annoyed and sit down without saying anything.

The counsellor might then probe with the following statement: “I can see that you are angry. I have some idea of what it’s about, but maybe you could tell me more.” Such probing statements are indirect invitations for clients to elaborate on their experiences, behaviours, or feelings. Counsellors also can interject a word or phrase that helps focus a client’s attention. For example, a client may say, “I love my fiancé, but I am hesitating in agreeing to marry him.” The counsellor can then probe by using the following interjection: “Hesitating in agreeing to marry him: Could you please elaborate on that?” In this instance, the counsellor helps the client say more fully something she was only hinting at.

### **Confronting**

Confronting is a communication technique used to reflect a contradiction expressed by a client. Contradictions include differences between self-perception and behaviour; between verbal and non-verbal messages; or between two different verbal messages. A confrontational message should be given in a neutral tone. If the client responds with persistent denial, the counsellor must let go. Following is an example of confrontation in the context of a counselling session:

“Based on what you told me, in that you have multiple partners and you do not use condoms with all of them, I am really concerned that you could get HIV. If this is the case, are you aware that you are putting yourself at risk of acquiring the HIV infection? So I hope when you are ready to think and talk more about HIV, you will know this is the place where you can come.”

## *HIV Testing Technologies*

### **Types of HIV Tests**

There are two main types of HIV tests: antibody tests (e.g., ELISA, simple/rapid, saliva and urine, and Western blot) and virologic tests (e.g., HIV antigen test, polymerase chain reaction test, and viral culture).

### **Antibody Tests**

HIV antibody tests look for antibodies against HIV; they do not detect the virus itself. When HIV enters the body, it infects white blood cells known as T4 lymphocytes, or CD4 cells. The infected person’s immune system responds by producing antibodies to fight the new HIV infection. Presence of the antibodies is used to determine presence of HIV infection. The most commonly used antibody tests are the enzyme immune assay (EIA) or ELISA, including the rapid HIV test. The less commonly used Western blot antibody test is used mainly in industrialized countries to confirm a prior test. The Western blot is better than other tests at identifying HIV infection, but is more expensive than other tests. In addition, the radio immunoprecipitation assay (RIPA), a confirmatory antibody test, is used when antibody levels are very low or difficult to detect, or when results of the Western blot are uncertain. RIPA is an expensive test and requires time and expertise to perform.

### **Rapid HIV Testing**

Rapid tests usually produce results in five to 30 minutes. Some of these tests do not require a blood sample from the client. HIV tests based on urine or oral fluid samples offer an alternative to blood-based tests. Testing urine for HIV is not as sensitive or specific as testing blood. Available urine tests include the EIA and the Western blot, which can confirm the EIA results. These tests must be ordered by a physician. Results usually are sent back to the ordering physician or his or her assistant. Saliva-based tests (e.g., OraSure HIV-1) collect oral fluid, which is tested for the presence of HIV antibodies. A trained specialist usually collects the sample from between the lower cheek and gum. Testing an OraSure HIV-1 specimen for HIV antibodies is accurate, but testing blood is more accurate. When both tests are available, clients may be allowed to choose.

Rapid tests, as their name implies, work quickly—clients receive the results on the same day and within 30 minutes. This same-day administration eliminates need to track down results from an outside laboratory and reduces risk of specimen mix-up or misplacement when one client is tested at-a-time.

Rapid tests also use a finger stick, not blood draw, which is more attractive to clients and easier to administer. Other advantages of rapid tests include the following:

- Increases access to prevention (VCT) and interventions (PMTCT).
- Reduces HIV transmission to infants with earlier detection in mothers.
- Supports increased number of testing sites.
- Most tests require no refrigeration.
- None or one reagent (a substance used in a chemical reaction to detect or produce other substances).
- Minimal or no equipment required.
- Minimum technical skill required.

Rapid tests do have a few disadvantages, though:

- Small numbers for each test run.
- Providing true and accurate results to the clients requires multiple measures.
- Test performance varies by product.
- Reader variability in interpretation of results.
- Although limited technical experience is required, adequate training and supervision must be provided to ensure that testing staff are competent.
- Significant documentation required for the testing process.
- Adequate lighting necessary for reading results.
- Test results change over time (a negative [non-reactive] result will become positive [reactive] on some test kits over time) so kits must be read within time parameters;
- Temperature storage (too hot) can compromise test device and destroy ability to respond / react to HIV antibodies.
- Inventory management is critical and somewhat complicated.

Supplies needed for rapid testing include the following. A starter-pack includes all the required items need on a testing site for approximately one month:

- Three different HIV rapid test kits (Determine, Uni-Gold and Clearview Complete).
- Lancet for finger-prick.
- Appropriate disinfect to clean the client's finger to prevent infection.
- Cotton pad to clean finger.
- Gloves to protect the person administering the test.
- Protective clothing, e.g., apron or white coat.
- Stopwatch or clock/wrist watch with second hand for timing incubation period of test.
- Work sheets for recording test and control results, stock control, etc.
- Pens and stationary.
- Puncture-resistant container to hold discarded sharp items (needles, lancets).
- Micro filter-tube or pipette for finger-prick blood collection.
- Waste disposal (red bags) bags for contaminated waste material.
- Disinfectant for cleaning working areas and for spillages.
- Two thermometers, one to measure fridge temperature and one to measure room temperature.
- Table cover, e.g., plastic sheeting.
- Vacutainer tubes for blood draw for collection of retesting samples.

### Algorithm

Diagnosis of HIV infection usually is made based on detection of antibodies to the HIV virus. An antibody test is rarely 100% sensitive (i.e., correctly able to categorize an infected person as positive) and 100% specific (i.e., correctly able to categorize a non-infected person as negative). It is recommended using more than one test in an algorithm (a combination of tests, run in a particular order, to accurately diagnose HIV infection) to ensure accuracy, country wide standardization, training and quality control.

### Virologic Tests

The antibody tests discussed above are the most commonly used in VCT settings. But under special circumstances (e.g., in a recently infected individual, during the window period, or in the case of a child born to an HIV-positive mother), more direct diagnostic methods may be used. Unlike antibody tests, virologic tests determine HIV infection by detecting the virus itself. There are three virologic (direct) tests:

- Viral antigen detection test (also known as the P24 antigen test)
- Nucleic acid-based tests (specialized tests that look for genetic information on HIV using polymerase chain reaction or PCR).
- Virus culture, which isolates the virus.

### Interpreting HIV Test Results

A negative test result means that HIV antibodies were not detected in the person's serum sample, either because the person is not infected or because the person is still in the window period. It is imperative that the client understand that a negative result does not mean that the person is uninfected or immune to HIV infection. An HIV-negative person is still vulnerable to HIV infection if he or she engages in risky behaviour. A person who tests negative but has practiced safe behaviours during the window period may be (or become) infected with HIV and infectious to others.

A positive test result means that HIV antibodies were detected in the person's serum sample. It means the person is infected with HIV and that he or she can transmit the virus to others if he or she engages in risky behaviours. It does not necessarily mean the person has AIDS. An indeterminate test result means that the presence or absence of HIV antibodies could not be confirmed. This means one of three possibilities:

- The person may be in the process of sero-converting.
- The person might have had an earlier inoculation that is cross-reacting with the HIV antibody test cross-reactivity does not necessarily mean HIV is present).
- The person may have a prior medical condition that is affecting the test (for example, arthritis or autoimmune problems).

### The Meaning of Test Results

#### **Negative**

A negative test result indicates that no antibodies to HIV were detected in the blood. This result can have one of several meanings:

- The person may not be infected with HIV.
- The person may be infected with HIV, but his or her body has not had time to produce antibodies to the virus. In this case, the person is in the window period.

### **Positive**

A positive test result indicates that antibodies to HIV were detected in the person's blood. This result indicates the person has been infected with HIV; it does not necessarily mean the person has AIDS. An indeterminate test result means one of the following:

- The person may be infected with HIV and in the process of developing antibodies to it (acute seroconversion).
- The person has antibodies in his or her blood that are very similar to antibodies to HIV. These antibodies are reacting to the HIV test.

HIV tests have been developed to be especially sensitive. Consequently, a positive result may be obtained even when there are no HIV antibodies in the blood. This result is known as a "false positive." Because of this possibility, all positive results must be confirmed by another testing method. False positives have many causes, including technical errors, serologic cross-reactivity, repeated freezing and thawing of specimens, and "stickiness" of stored sera in malaria-endemic regions in Africa.

### **False Positive**

HLA cellular antigens may cross-react and cause a false positive on an ELISA or rapid HIV test. There is risk of false positive results in persons with:

- Rheumatoid arthritis.
- Multiple sclerosis.
- Systemic lupus erythematosus.
- Type I diabetes mellitus.
- Addison's disease.
- Ankylosing spondylitis.
- Chronic hepatitis.
- Cancer (particularly lympho-proliferative malignancies).
- Severe kidney disease.

And in persons who have had a:

- Flu shot within the past 30 days
- Gamma globulin injection
- Recent transfusion or organ transplant

Confirmatory tests usually rule out false-positive results.

### **False Negative**

A false negative occurs in an infected person when the blood tested gives a negative result for HIV antibodies, even though it should have showed positive. The likelihood of a false-negative test result must be discussed with clients if their history suggests they have engaged in behaviour likely to put them at risk of HIV infection. Repeated testing over time may be necessary before the client can be reassured that he or she is not infected with HIV.

The most frequent reason for a false-negative result is that the individual is newly infected and is not yet producing HIV antibodies. It is important to remember that someone who has tested negative correctly—that is, because he or she is not infected with HIV—can become infected at any time afterward.

## *Confidentiality in HIV Testing*

Given the absence of clinical symptoms in most people with HIV, a laboratory test is required to diagnose presence of the virus. Sometimes a client may request an HIV test because of his or her self-perceived risk or other reasons; other times, a health care provider recommends a test based on a patient's history and/or clinical findings, such as STIs or OIs. Regardless of the circumstances, HIV antibody testing and counselling should always be voluntary and confidential. Because in many societies HIV and AIDS are sensitive and emotionally charged issues, all information about the individual and his or her sexual partners must be kept strictly confidential. Confidentiality will help win a client's trust and avoid stigmatization and discrimination. Careful record management is a prerequisite for confidentiality. There are three general methods of labelling blood samples to ensure confidentiality:

- Linked testing.
- Linked anonymous testing.
- Unlinked anonymous testing..

In **"linked testing,"** the blood sample sent for testing has an identifier on it, such as a clinic number that links the sample to the individual client. To ensure maximum confidentiality for clients, samples sent for HIV testing should not be identified with a name, but with some other identifier, so that laboratory technicians and other people with access to laboratory records cannot identify the client. Sometimes HIV test request forms have sequential numbers printed on them whereby the laboratory gets copies of the request with a number only and the clinic retains copies with the number and client information.

In **"linked anonymous testing,"** no names or other client identifiers are recorded. The client receives a unique number, in no way linked to any medical record that matches the number on the blood sample sent to the laboratory. The laboratory result for the specific number is reported back to the clinic or counselling site. To learn the result, the client must come to the clinic or counselling site and present the correct number. No record is kept of clients who provided blood samples, and there is no way to find the client if he or she does not return for results.

**"Unlinked anonymous testing"** is often performed on blood samples obtained for reasons other than diagnosing HIV (e.g., syphilis serology in antenatal clinics or blood). In this procedure, all identifiers are removed from the blood sample and the sample is tested for HIV antibodies. Unlinked anonymous testing means test results cannot be traced back to the clients who provided the blood samples, and no record is kept of those clients. Epidemiologists and ministries of health use unlinked anonymous screening to monitor HIV trends in different geographic areas and populations and to further understand the natural history of HIV infection.



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3. HIV and AIDS Resource Guide (2008) Chapter 6: Counselling and Testing.
5. WHO. 2007. "Guidance on provider-initiated HIV testing and counselling in health facilities. (2007)". Retrieved April 2011 from: <http://www.who.int/hiv/pub/guidelines/pitc2007/en/>.



## Learning Activity 1: Guest Speakers for Counselling And Testing

### **Instructions to Lecturer:**

- Invite a VCT nurse/PITC trainer to speak to students about: rationale for counselling and testing, two kinds of counselling and testing (VCT, PITC), national guidelines for testing and counselling.
- Ensure that there is enough time for Q& A sessions from students.

### **Instructions to Students:**

- Read and prepare questions on the above sub-topics.
- Ask and answer questions in the large group discussion.



## Learning Activity 2: Field Trip to Hospital Lab

### **Instructions to Lecturer:**

- Arrange a field trip to the hospital lab for students to see a demonstration of a simulation of an HIV test.
- Ensure that there is enough time for Q& A sessions from students.

### **Instructions to Students:**

- Read and prepare questions on the above topic.
- Ask questions in the large group discussion.



## Learning Activity 3: Case Studies

### **Instructions to Lecturer:**

- Pass out the scenarios and ask for volunteers to read out loud.
- Read the questions and discuss answers as a group.
- Write participant responses on the flipchart.

### **Instructions to Students:**

- Listen to the scenarios and think of possible suggestions/answer.
- Take notes.
- Participate in large group discussions.

### **Case Studies**

**Case Study 1:** Kato would like to get married in the future. The nurse counsels him to use a condom if he has a new partner. He says it is very difficult to do so. The nurse listens carefully to the worries of Kato and understands them. She counsels him on risk reduction. What are some information the nurse can use and what skills will the nurse (counsellor) use to convince Kato?.

**Case Study 2:** When Mr. Richard travels, he often has a partner for just one night. As a counsellor, what would you tell Mr. Richard?.

**Case Study 3:** In a counselling session, a patient tells you, ““You are saying that I need to tell at least one person that I am HIV+. I actually change my mind about telling another person. I do not need anybody to support me. I can do all on my own.” How do you counsel this person that he/she needs additional support?.

**Case Study 4:** Maria is a 22-year-old woman. She thinks she may be HIV+ because she is feeling very ill and has just learnt that her boyfriend is HIV+. She is afraid to get tested. How do you convince her to get tested as soon as possible so that if indeed she is HIV +, she can begin treatment?.



## Learning Activity 4: Role Play

### **Instructions to Lecturer:**

- Form groups of three: Client, Health Worker and Observer (will record notes)
- Ask students to write a role play for each of the case scenarios below:
  - o A client comes to the clinic wanting to do an HIV test. As the VCT nurse, you must ensure that the client is fully informed about the process and implications for both a negative and positive results. Write a script which includes the nurse and client.
  - o A client comes to the clinic wanting to do an HIV test. As the VCT nurse, you must conduct a risk assessment that will determine the client's level of risk for HIV. Write a script which includes the nurse and the client.
  - o A client comes to the clinic wanting to do an HIV test. As the VCT nurse, you must discuss the benefits of knowing one's status as part of future plans. Write a script which includes the nurse and the client.
  - o A client comes to the clinic wanting to do an HIV test. Discuss with the client, a workable plan or steps to help the client reduce the risk of either acquiring HIV infection or passing the virus on to others.
  - o A client comes to the clinic wanting to do an HIV test. Inform the client of all support services available, whether client decides to test or not to test.
- Allow 15 minutes for each role play to be performed.
- Allow 10 minutes to discuss each role play when it is finished.
- Ask group to discuss the role play commenting on what went well, and what could be improved about the interaction—allow observer to share responses first.

# CHAPTER 6

## *Stigma and Discrimination*

### Learning Objectives

- Identify values and attitudes related to HIV/AIDS.
- Explain the importance of one's values and attitudes about HIV and their impact on healthcare delivery.
- Define the concept of stigma and discrimination.
- Discuss contributing factors of HIV/AIDS-related stigma and discrimination.
- Explain how HIV/AIDS related stigma affects the quality of health care for PLWHA.
- Describe client's rights and the roles of healthcare providers in ensuring non-discriminatory healthcare services.
- Demonstrate strategies that effectively address stigma and discrimination.



### Reference Information

**Stigma** related to HIV and AIDS refers to a process of devaluation of people either living with or associated with HIV and AIDS. Stigma can be used to marginalize, exclude and exercise power over individuals who show certain characteristics.

**Discrimination** follows stigma and involves the unfair and unjust treatment of an individual based on his or her real or perceived HIV status. Discrimination occurs when a distinction is made against a person that results in being treated unfairly and unjustly on the basis of belonging, or being perceived to belong, to a particular group.

It is important to remember that stigma reflects an attitude, while discrimination is an act or behaviour, i.e., discrimination is a way of expressing stigmatizing thoughts, either on purpose or inadvertently.

#### Factors Contributing to Stigma and Discrimination

There is a strong history of attaching discrimination to illnesses such as TB, STDs and leprosy as well as mental illness (Skinner, 2004). Yet, few other diseases have had the degree of intensity of stigma and discrimination as HIV/AIDS has. HIV/AIDS is a life-threatening illness that people are afraid of contracting, hence stigma and discrimination against those who might be associated with the virus. Additionally, HIV/AIDS has also been most associated with "others"—affected populations whose sexual practices or identities are different from the "norm." This has reinforced pre-existing stigma against individuals associated with sexually transmitted diseases, homosexuality, promiscuity, and prostitution.

By blaming certain individuals or groups, society has often excused itself from the responsibility of caring for and looking after such populations and generally perceiving that it is “their problem.” This is seen not only in how “outsider” groups are often blamed for bringing HIV into a country, but also in how such groups are denied access to the services and treatment they need (Parker, et al. 2002).

Because HIV/AIDS is often associated with marginalized behaviors and groups, all individuals with HIV/AIDS are often assumed to be from marginalized groups and some may be stigmatized in a way that they were not before. In some settings, men may fear revealing their HIV status because it will be assumed that they are homosexual. Women may fear revealing their sero status because they may be labeled as “promiscuous” or sex workers and stigmatized as such.

HIV/AIDS exacerbates the stigmatization of individuals and groups who are already oppressed and marginalized, which increases their vulnerability to HIV/AIDS. This causes them to be further stigmatized and marginalized (Parker, et al. 2002).

### **Impact of HIV and AIDS Stigma on Individuals, Families, and Communities**

As outlined below, stigma and discrimination can have an impact on the institution, community and individual levels (Parker, et al 2002):

#### **Community**

In communities, one can observe the physical isolation of PLWHA or at times even violence and rejection towards them. The violence and rejection is often motivated by the need to blame and punish and in extreme circumstances can extend to acts of great harm. For example, in December 1998, Gugu Dhlamini was stoned and beaten to death by neighbours in her township near Durban, South Africa, after speaking out openly on World AIDS Day about her HIV status (Avert, 2007).

PLWHA may also be denied access to the resources they need to live their daily lives—water, food, shelter, security and access to the marketplace, to health care and to education. Social isolation also occurs by taking away the identity or social roles of PLWHA in the community. Gossip, taunting, expressions of blame and shame, and labelling and use of derogatory words to describe PLWHA are forms of stigma in communities.

Infected individuals often experience stigma and discrimination at home, and women are often more likely to be badly treated than men or children. Negative community and family responses to women with HIV/AIDS include blame, rejection, and loss of children and home.

Secondary stigma (stigma by association) can affect caregiver or relatives/friends of someone who is HIV positive, as they may be targeted with stigma simply because they are associated with the PLWHA.

#### **Individual**

In contexts where HIV/AIDS is highly stigmatized, fear of such stigma and discrimination may deter individuals from getting tested for HIV. Stigma and discrimination can make PLWHA isolate themselves to the extent that they no longer feel part of civil society and are unable to gain access the services and support they need. This “self-stigma” can lead to increased psychological suffering, internalized shame, poor self-concept, severe depression and even suicide.

### Reflection on Own Values and Behaviours

Because of the serious consequences of HIV/AIDS, nurses and healthcare workers should be prepared to accept and provide counselling and education about the disease regardless of their own values and attitudes. It is important for nurses to reflect on their own values and whether they are perpetuating or combating stigma in the health setting. It is important to examine one's feelings, thought and attitudes about AIDS, particularly in relation to work as health care providers. There are many myths and misunderstandings surrounding HIV and AIDS. If feelings and attitudes about HIV are not addressed, health care providers may consciously or subconsciously treat clients who are HIV-positive or perceived to be infected or at risk, differently, thereby reducing the quality of care in their facility. Fears about HIV in the workplace can also lead to additional work-related stress and decreased job satisfaction and performance for some providers.

### Strategies That Effectively Address Stigma And Discrimination

Health care workers are in a unique position to help reduce stigma and discrimination in the health care setting, community, and on the national level. Several strategies are outlined in the table below:

**Table 1 Strategies To Decrease Stigma And Discrimination**

<p><b>Provide information to stimulate behaviour change</b></p>	<ul style="list-style-type: none"> <li>• Address issues of homophobia</li> <li>• Promote HIV awareness and knowledge and revamp message from “AIDS kills” to “By being tested for HIV and living a healthy and positive lifestyle, someone who is infected with HIV or AIDS can live many years as a valuable and contributing member to society”</li> <li>• Increase awareness of issues faced by PLWHA</li> <li>• Increase awareness of domestic violence faced by newly diagnosed women</li> <li>• Provide ongoing training and HIV education to community members</li> </ul>
<p><b>Create safe and supportive workplaces</b></p>	<ul style="list-style-type: none"> <li>• Encourage the hiring of employees who are HIV positive</li> <li>• Encourage everyone to get tested for HIV</li> <li>• Make testing an everyday part of medical care               <ul style="list-style-type: none"> <li>o Educate and train healthcare providers</li> <li>o Control infection</li> <li>o Maintain confidentiality and obtaining informed consent</li> <li>o Serve as role models and advocates</li> <li>o Facilitate community support and linkages</li> </ul> </li> <li>• Publicize care and treatment programme success stories</li> <li>• Advocate for policies and practices that help protect nurses from occupational exposure               <ul style="list-style-type: none"> <li>o Protective equipment</li> <li>o PEP</li> </ul> </li> </ul>
<p><b>Provide counselling and supportive care</b></p>	<ul style="list-style-type: none"> <li>• Establish support groups for health workers who are HIV+</li> <li>• Encourage referrals to and from community VCT sites</li> <li>• Maintain confidentiality for an individual patient</li> <li>• Provide patient friendly care, giving patients the feeling of being supported</li> <li>• Make the disease the enemy, not the person</li> </ul>
<p><b>Increase involvement with PLWHA</b></p>	<ul style="list-style-type: none"> <li>• Build alliances with churches, schools, social and civic organizations</li> <li>• Help NGOs and churches plan educational sessions and support groups for PLWHA</li> <li>• Encourage educational workshops to include PLWHA speakers who can personalize and normalize the disease</li> </ul>
<p><b>Confront human rights abuses</b></p>	<ul style="list-style-type: none"> <li>• Respect human rights of all in laws, policies and practices</li> <li>• Prohibit discrimination on the basis of HIV/AIDS status</li> <li>• Enforce the Namibian Charter for HIV Rights</li> </ul>



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## Learning Activity 1: Questionnaire on Stigma & Discrimination

### **Instructions to Lecturer:**

- Distribute the questionnaire below to allow students to reflect on their attitudes, values, and comfort level related to HIV and AIDS and working with people living with HIV and AIDS.
- Distribute the questionnaires and give students 15 to 20 minutes to complete it. Let them compare their responses to those in the first checklist they completed in Chapter One.

## Multiple Choice

**Instructions:** Read each statement and write in the number for the answer that best reflects your attitudes, values, and comfort level related to HIV and AIDS, and working with people who are living with HIV or AIDS.

1= strongly agree      2= agree      3= disagree      4=strongly disagree

### I believe...

- \_\_\_\_\_ I believe that people who are infected with HIV should not be treated in the same areas as other patients in order to protect the larger population from infection.
- \_\_\_\_\_ I believe that people infected with HIV are responsible for getting infected.
- \_\_\_\_\_ I believe that HIV+positive patients are the biggest threat to my safety at my place of work.
- \_\_\_\_\_ I believe most HIV+positive health care workers get infected at work.

### I feel...

- \_\_\_\_\_ I feel that providing health services to people infected with HIV is a waste of resources since they are going to die anyway.
- \_\_\_\_\_ I feel that I am at high risk of becoming infected with HIV working in a health facility.
- \_\_\_\_\_ I feel that clients who have sexual relations with people of the same sex have a right to access the highest quality of health services in my facility.
- \_\_\_\_\_ I feel that clients who are sex workers have a right to access the highest quality of health services in my facility.

### I am comfortable...

- \_\_\_\_\_ I am comfortable providing health services to clients who are HIV positive.
- \_\_\_\_\_ I am comfortable performing surgical or invasive procedure on clients whose HIV status is unknown.
- \_\_\_\_\_ I am comfortable sharing the bathroom with a colleague who is infected with HIV.
- \_\_\_\_\_ I am comfortable assisting or being assisted by a colleague who is infected with HIV.

### I avoid...

- \_\_\_\_\_ I avoid touching clients for fear of becoming infected with HIV.
- \_\_\_\_\_ I avoid touching clients' clothing and belongings for fear of becoming infected with HIV.
- \_\_\_\_\_ I avoid performing ANY task at work without wearing latex gloves.



## Learning Activity 2: Lecture/Group Discussion

### ***Instructions to Lecturer:***

- Prepare a PPT with information on factors that affect stigma and discrimination, strategies to address stigma and discrimination.
- Allow time for large group discussion.
- Ask students to share direct/indirect personal experiences with stigma and discrimination.



## Learning Activity 3: Role Play/Case Scenarios

### ***Instructions to Lecturer:***

- Allow students to get into groups of four to prepare a skit based on the case scenarios below.
- Allow students 20 minutes to prepare their skits.
- The skits should portray the scenario described and how the situation could be addressed to reduce stigma and discrimination.
- Ask each group to present their skits to the large group.
- After all the skits have been presented, lead a large group discussion using the case scenarios.
- If there are not enough “characters” for a group, students can choose to add characters to the scenario.

### **Case Scenarios:**

**Instructions:** Each of the following is a scenario for the development of a skit. If there are not enough characters for a group, students can choose to add characters to the scenario.

1. A man with AIDS is being treated by a physician who does not want to touch him.
2. A few nurses and clinic assistants are gossiping about an HIV-positive client in front of other clients.
3. A very sick HIV-positive woman is in the clinic's waiting room with her three children. Her husband and in-laws threw her out of the house and she has nowhere else to go.
4. One of the clinic assistant's female relatives comes to the clinic with her child who is sick and confides in a provider that her husband is HIV-positive and she is afraid and confused. After the session, the provider immediately tells another provider. They gossip about the clinic assistant "dirty" and "immoral" relatives and begin to snub her.
5. When an HIV-positive woman who is known to be a sex worker leaves the clinic after a family planning appointment, other women in the waiting room loudly complain that they do not appreciate being treated in an environment where "sick" and "dirty" women are seen. They do not want the same doctors, nurses, or equipment touching them.
6. A surgeon who is HIV positive is dressing in the doctors changing room when she hears staff talking negatively about people with AIDS.
7. You observe two providers use gloves to perform every task, clinical and non-clinic, because a client in the room "looks like a sex worker and must have AIDS."
8. A midwife working in a clinic hears that one of the other midwives in the clinic is infected with HIV. She gossips about this to you, a staff person in the clinic.
9. The director of a district hospital learns that an orderly who has worked in the operating theatre for many years is infected with HIV. Without giving any explanation, he instructs the supervisor to transfer the orderly to another section of the hospital right away.



## Learning Activity 4: Guest Speaker

### **Instructions to Lecturer:**

- Invite a person living with HIV or AIDS to speak to the class about personal experiences dealing with stigma and discrimination. (Suggested guest speakers: CNET+ representatives)
- Be sure to indicate the topic to be covered, length of presentation, length of Q & A session.
- Ask students to prepare questions prior to the presentation.



## Learning Activity 5: Discriminatory Language

### **Instructions to Lecturer:**

- Divide class into four groups and ask each group to brainstorm one of the following:
  - Stigmatizing words/phrases related to HIV or people living with HIV.
  - Actions or practices you see in health care facilities that stigmatize or discriminate against people with HIV and AIDS.
  - Non-stigmatizing words/phrases related to HIV or people living with HIV.
  - Non-stigmatizing/non-discriminatory actions or practices you might see in a health care facility.
- Prepare two large cards with the words “stigmatizing and discriminating” and “non-stigmatizing and non-discriminating” and post them on the board.
- Ask each group to post their list of words/actions or practices under the appropriate cards.
- Lead a large group discussion using the following questions as guide:
  - What are the origins of some of the terms in the stigmatizing column?
  - Why are stigmatizing words perpetuated?
  - What are the most respectful and appropriate terms to use to refer to HIV-positive persons.
  - What are examples of respectful and appropriate ways to treat persons infected with HIV?.
  - What would your facility need to do to eliminate stigmatizing language and discriminatory practices?.



## Learning Activity 6: Guided Reflections

### **Instructions to Lecturer:**

- Distribute an index card to each student. Explain that they are to write one response on the card and that they should not write their names on the card.
- Instruct them to write responses to the following questions:
  - Briefly describe a situation you have witnessed either at your own facility or elsewhere where an HIV positive client was treated poorly because of their HIV status.
  - Briefly describe a situation you have witnessed where an HIV-positive patient was treated well.
- Tell students that if they do not have any personal experiences then they are to make up a scenario.
- Use the examples below to help students to write their scenarios.

**Example One:** A woman came to the hospital in labor. At a certain point in her care, the doctor found out that she was HIV positive and refused to assist the delivery. He didn't say anything to her, he just left the hospital. She was forced to seek care elsewhere.

**Example Two:** A man came to the health clinic because he had a troublesome cough that would not go away. He worried all the way there about telling the nurse that he is HIV-positive. He thought they might ask him to go away. In the end her told her and she praised him for doing so as it was important to know. She treated just like she would any patient with dignity and respect in a caring manner.

- Allow students 10 minutes to complete their scenarios and collect them.
- Distribute one card to each student.
- Ask them to imagine they are the clients in the card they receive and answer these questions:
  - How would you feel if you were in this situation?
  - What would your reaction be?
  - Would you return to the hospital/clinic? Why or why not?
  - If not, what would you do for care?
- Divide the group into pairs and have students share their reflections with a partner for 10 minutes.
- Reconvene the large group and ask students the following questions:
  - How did it feel to imagine you were the HIV-infected person in the stories?.
  - What client rights issues came up?.
  - How did this activity help us to understand the behavior of health care workers on clients with HIV?.
  - What can we do as health care workers to ensure that there are only positive experiences in our health facilities?.



## Learning Assessment 1: Written Test

### **Instructions to Lecturer:**

- The following are a set of questions to test participant knowledge of the information presented in this chapter. These questions may be incorporated into exams or administered as seen fit.

### **Instructions to Students:**

- Read each numbered statement and state whether the statement is true or false.
- If false, explain why, and how to correct the statement.
- For each multiple choice, select the letter of the correct answer.

## Chapter 6 Test

### TRUE or FALSE

1. Stigma is praise that people give an individual on account of a particular characteristic or trait that they possess.  
True | False
2. Discrimination is unjust treatment of a person because of his real or perceived HIV status.  
True | False
3. Stigma may deter people from getting tested for HIV.  
True | False
4. Health care workers are discriminated against for working with HIV patients, but at times discriminate against their own HIV patients.  
True | False
5. Addressing stigma in Belize should be done on a national level only.  
True | False
6. Any health care worker might be HIV+ or have AIDS.  
True | False
7. Health care workers can choose to withhold care (refuse care) to an HIV-positive patient without violating the rights of the patient.  
True | False
8. Stigma affects not only the individual but their families as well.  
True | False
9. Stigma and discrimination may deter a person from getting tested.  
True | False

10. One method of addressing stigma and discrimination is through public education.  
True | False

### **MULTIPLE CHOICE**

- 1) Which of the following is NOT an effect of stigma?
  - a) Deter people from getting tested
  - b) Encourage people to get tested
  - c) Secondary stigma
  - d) Makes people less likely to acknowledge risk
  
- 2) Which of the following is an effective way to combat stigma?
  - a) Ignore it
  - b) Increase knowledge
  - c) Create rumours
  - d) Offer more testing
  
- 4) Which of the following is NOT a stage of incorporating HIV/AIDS into our lives and work?
  - a) Avoidance
  - b) Recognition
  - c) Concern for person with HIV/AIDS
  - d) Denial
  
- 5) Health care workers are NOT likely to be affected by HIV/AIDS in which of the following ways:
  - a) Getting a promotion
  - b) May be stigmatized
  - c) May be HIV+ or have AIDS
  - d) May experience depression or burnout
  
- 6) How can health care workers, for example, nurses, care for other health care workers (other nurses)?  
(circle all that apply).
  - a) Help create a safe workplace
  - b) Deal with work place issues in isolation without reaching out to others to help them
  - c) Advocate for policies to protect nurses
  - d) Establish support groups

# LESSON 7

## *Bio Safety*

### Learning Objectives

- Describe risk factors for disease transmission in healthcare settings.
- Describe the importance of universal precautions/ standards in health care setting.
- Demonstrate correct hand washing techniques.
- Demonstrate proper gloving.
- Demonstrate the importance appropriate use of PPE.
- Describe the risk factors for needle-stick injuries in health care settings.
- Describe the proper procedures for managing injuries from sharps.
- Describe and demonstrate the proper procedures for use and disposal of needles and other sharps.
- Describe the proper ways of disposing of solid waste, liquid medical waste, and hazardous chemical waste.
- Explain national post-exposure guidelines and treatment protocol.



### Reference Information

#### Increase in Infections

There are many complex reasons why outbreaks of infections have increased, including:

- Rapid population growth.
- Increased poverty.
- Expansion of the population into "remote" areas.
- Environmental degradation.
- Improved transportation, leading to easier spread of disease.
- Inadequate or deteriorating public health infrastructure.
- Poor disease control and disease prevention.

#### Infection in Health Care Settings

Health care facilities are ideal settings for transmission of disease, because:

- Whenever clinical procedures are performed, clients are at risk of infection during and immediately following the procedure.
- Service providers and other staff are constantly exposed to potentially infectious materials as part of their work.
- Many of the people seeking health care services are already sick and may be more susceptible to infections.
- Many of the people seeking services have infections that can be transmitted to others.
- Services are sometimes provided to many clients in a limited physical space, often during a short period of time.

With appropriate infection prevention practices, you can:

- Prevent post-procedure infection, including surgical-site infections and pelvic inflammatory disease (PID)
- Provide high-quality, safe services.
- Prevent infections in service providers and other staff.
- Protect the community from infections that originate in health care facilities.
- Prevent the spread of antibiotic-resistant microorganisms.
- Lower the costs.

### Who Is At Risk Of Infection?

#### Staff:

Service providers are at significant risk of infection because they are exposed to potentially infectious blood and other body fluids on a daily basis. Staff who process instruments and other items, clean up after procedures, clean operating theatres and procedure rooms, and dispose of waste are particularly at risk. Client-to-health care worker transmission can occur through exposure to infectious blood and other body fluids:

- When a health care worker's skin is pierced or cut by contaminated needles or sharp instruments.
- When fluids are splashed on the mucous membranes of the health care worker (e.g., eyes, nose, or mouth).
- Through broken skin due to cuts, scratches, rash, acne, chapped skin, or fungal infections.

#### Clients:

Clients are at risk of post procedure infection when, for example, service providers do not wash their hands between clients and procedures, when they do not adequately prepare clients before a clinical procedure, and when used instruments and other items are not cleaned and processed correctly.

#### Community:

The community is also at risk of infection, particularly from inappropriate disposal of medical waste, such as contaminated sharps. Improperly disposed of medical waste--including contaminated dressings, tissue, needles, syringes, and scalpel blades--can be found by children or others scavenging in open dumps, or can scatter on the ground where adults and children travel, putting them at risk of injury and infection. In addition, some infections can be spread by staff to their family members or others in the community. For example, the Ebola virus outbreak in Africa in 1995 was spread throughout communities, in part, because of poor infection prevention practices in health care facilities.

### Modes Of Infection Transmission

There are four ways that infections are transmitted:

1. Contact - Direct transfer of microorganisms through touch (staphylococcus), sexual intercourse (gonorrhoea, HIV), faecal/oral transmission (hepatitis A, shigella), or droplets (influenza, TB).
2. Vehicle - Material that serves as a means of transfer of the microorganisms. This can be food (salmonella), blood (HIV, HBV), water (cholera, shigella), or instruments and other items used during clinical procedures (HBV, HIV, pseudomonas).
3. Airborne - Microorganisms can be carried by air currents (measles, TB).
4. Vector - Invertebrate animals can transmit the microorganisms (mosquito: malaria and yellow fever; flea: plague).

The best way to prevent infections at a health facility is by following standard precautions. These are a set of recommendations designed by the U.S. Center for Disease Control and Prevention (CDC) to help minimize the risk of exposure to infectious materials by both clients and staff. The modules in this course give detailed explanations of how to apply the standard precautions to your everyday work in a health facility.

**Summary of standard precautions:**

- Wash your hands.
- Wear gloves.
- Wear eye protection or face shields.
- Wear gowns.
- Prevent injuries with sharps.
- Correctly process instruments and client-care equipment.
- Maintain correct environmental cleanliness and waste-disposal practices.
- Handle, transport, and process used/soiled linens correctly.

Standard precautions should be followed with every client regardless of whether or not you think the client might have an infection. This is important because it is not possible to tell who is infected with viruses such as HIV and the hepatitis viruses, and often the infected persons themselves do not know if they are infected.

## *Infection Prevention*

For more than 100 years, research has shown that hand washing is the most important way to reduce the spread of infections in health care settings. However, health care workers wash their hands only about half as often as they should.

**Hand washing:** Reduces the number of infectious microorganisms on your hands; and Reduces client sickness and death caused by infections. Hands should be washed in all of the following situations:

- Immediately after arriving at work and before leaving work at the end of the day
- Before and after examining each client
- After touching any instrument or object that might be contaminated with blood or other body fluid, or after touching mucous membranes (e.g., eyes, nose, and mouth).
- Before putting on gloves for clinical procedures.
- After removing gloves.
- After using the toilet or latrine.
- Before leaving work.

Hands should be washed with soap and running water. Water and mechanical friction (scrubbing or rubbing) alone are not adequate for cleaning hands. Soap must be used in conjunction with water and rubbing to remove transient organisms and soil. Running water does not have to come from a tap mounted on a sink; running water can come from a bucket with a tap or a pitcher. If water is not available and hands are not visibly soiled, an alcohol hand rub may be substituted for hand washing with soap and water. Hands should be dried with a clean towel or allowed to air-dry. If towels are used, they should be either disposable or for personal use only. More than one person should not use the same towel, because towels quickly become contaminated with microorganisms from the users' hands that can easily be passed from one user to another.

## Steps of Proper Hand Washing Technique

**Step 1:** Turn the tap on. To decrease the spread of infection, your hands should be angled down under the faucet.

**Step 2:** Apply soap from a dispenser. (It is preferable not to use bar soap because it allows for cross contamination. It is best to obtain soap from a dispenser). Hold your hands below elbow level to prevent water from running up your arms and back down, as this will contaminate a clean area. Work up lather by scrubbing vigorously for 15 seconds. Be sure to clean under fingernails, around knuckles, and along the sides of fingers and hands.

**Step 3:** Rinse your hands completely to wash away soap and microorganisms. Pat your hands dry with a disposable paper towel. (Multiple use towels are not recommended in the workplace).

**Step 4:** Turn off water. In order to prevent re-contaminating your hands, do not let your bare hands touch the sink. Cover the handles with a dry paper towel when turning off the water. The use of lotions or emollients after hand washing can help prevent irritation to the skin from frequent hand washing. In case soap and water are not available, alcohol based hand gels are as effective as soap for hand cleansing. The gel does not require any water, and dries in room air usually within 5-10 seconds, therefore paper towels are not required for drying.

## Personal Protective Equipment

Personal protective equipment (PPE) or “barrier protection” is used to protect health care workers during procedures or activities with patients that may pose a potential risk for infection transmission. The level of barrier protection used is based on the risk of the patient procedure or activity; not the patient’s diagnosis. Examples are gloves and masks.

### Use of Gloves

Gloves provide a barrier against potentially infectious microorganisms that can be found in blood, other body fluids, and waste. Gloves act as a barrier that protects health care workers and clients. Gloves protect service providers from coming into contact with the potentially infectious microorganisms that can be found in blood, other body fluids, and waste. During examinations and clinical procedures, gloves also protect clients from infections that can be caused by the microorganisms normally found on the skin of service providers. Health care workers should wear the proper type of gloves whenever they might come into contact with blood and other body fluids (for example, during service provision, handling or cleaning used instruments and other items, housekeeping activities, etc.) and whenever they perform a clinical procedure or an examination that might put the client at risk of infection. Gloves should be worn whenever contact with blood or other body fluid is anticipated.

Sterile or high-level disinfected surgical gloves are preferred for procedures in which there will be contact with the bloodstream or tissues under the skin (e.g., surgical procedures, insertion of Norplant implants, pelvic examinations of women in labor). Single-use examination gloves are indicated for all procedures in which there will be contact with intact mucous membranes (e.g., IUD insertion, manual vacuum aspiration, pelvic examination) or for situations in which the provider may be exposed to a client’s blood or other body fluids (e.g., drawing blood, working in the laboratory).

Utility gloves should be worn when handling contaminated instruments and other items, handling medical or hazardous chemical waste and linen, performing housekeeping activities, and cleaning contaminated surfaces.

### **Antiseptics and Disinfectants**

Antiseptics are chemical agents that are used on the skin and mucous membranes to remove or kill microorganisms. Examples include alcohol, chlorhexidine gluconate (e.g., Hibitane, Savlon), hexachlorophene (e.g., pHisoHex), iodine, iodophors (e.g., Betadine), and para-chloro-meta-xyleneol (PCMX) e.g., Dettol. Disinfectants are chemical agents that are used on inanimate objects, such as instruments and surfaces, to kill microorganisms. Examples include chlorine and glutaraldehyde.

**Antiseptics** should be used only on the skin and mucous membranes. Antiseptics are indicated for:

- Surgical hand scrub.
- Skin, cervical, and vaginal preparation before a clinical procedure.
- Hand washing in high-risk situations, such as before invasive procedures or contact with clients at high risk of infections.

Antiseptics should never be used on instruments or other items, surfaces, or reusable gloves. In addition, instruments and other items should never be left soaking in an antiseptic solution.

**Disinfectants** should be used only for processing instruments and other items for reuse and for housekeeping activities. Disinfectants are indicated for:

- Processing instruments and other items (high-level disinfectants).
- Cleaning surfaces (low-level disinfectants).

Disinfectants are not to be used on the skin or mucous membranes. In addition, instruments and other items should not be left soaking indefinitely or stored in disinfectant solutions.

**Aseptic techniques** means “without microorganisms.” Aseptic technique refers to practices that help reduce the risk of post procedure infections in clients by decreasing the likelihood that microorganisms will enter the body during clinical procedures. Some of these practices are also designed to reduce service providers’ risk of exposure to potentially infectious blood and tissue during clinical procedures. Aseptic techniques are those that do some or all of the following:

- Remove or kill microorganisms from hands and objects.
- Employ sterile instruments and other items.
- Reduce clients’ risk of exposure to microorganisms that cannot be removed.

Along with the other elements of aseptic technique, proper surgical attire helps reduce the risk of post procedure infections in clients by decreasing the likelihood that microorganisms will enter areas of the client’s body during procedures.

A surgical hand scrub should be performed before all surgical procedures to prevent the rapid growth of microorganisms inside surgical gloves for a period of time and reduce the risk of infections to clients if gloves develop holes, tears, or nicks during the procedure. A surgical hand scrub should be performed as follows:

- Remove all jewellery.
- Clean fingernails with a stick or brush.
- Wash hands with an antiseptic soap for 3-5 minutes. Beginning at the fingertips, wash between the fingers and move toward the elbow.
- Rinse each arm separately, fingertips first, holding hands above the level of the elbows.

- Dry hands with a sterile towel or allow to air-dry.
- Hold hands above the level of the waist at all times.
- Staff should scrub every hour or after every four clients.

Sterile or high-level disinfected surgical gloves should be put on and removed in ways that do not contaminate the gloves or allow the wearer to touch the contaminated outside part of the gloves. Sterile or high-level disinfected surgical gloves should not be contaminated while they are being put on. When removing contaminated gloves, the wearer should not touch the outside of the glove, which is contaminated.

Shaving the surgical site should not be performed routinely and should be performed only when absolutely necessary. Shaving can create nicks and breaks in the skin, which can lead to increased risk of post procedure infections. Research has shown a reduction in the number of postoperative surgical-site infections when shaving is not performed. Clipping hair with scissors is acceptable if hair interferes with the procedure. Shaving the surgical site should be performed only when absolutely necessary.

The surgical/procedure site should be prepared properly using an appropriate antiseptic solution. The surgical/procedure site should be cleaned with soap and water and then cleaned with an antiseptic solution just before the procedure. If an iodophor (e.g., Betadine) is used, the antiseptic should be left on for 1-2 minutes before wiping off the excess solution. The site should be wiped using a circular motion, beginning in the centre of the site and moving out.

A sterile field should be established and maintained during all surgical/clinical procedures. A sterile field is maintained by:

- Placing only sterile items for use within the sterile field.
- Opening, dispensing, or transferring sterile items without contaminating them.
- Considering items located below the level of the draped client to be unsterile.
- Not allowing sterile personnel to reach across unsterile areas or to touch unsterile items.
- Not placing sterile items near open windows or doors.

Traffic and activities should be controlled and appropriate attire should be worn in surgical/procedure areas. Minimizing traffic in surgical/procedure areas reduces the amount of dirt, dust, and insects in the area. Only necessary staff should be allowed in these areas during procedures. Changing into attire designated for use in the surgical area further reduces the introduction of microorganisms into the area. Proper surgical attire includes caps, masks, gowns, protective eyewear, and sturdy footwear. Staff (including cleaning staff) should wear caps, masks, and sturdy footwear at all times in the surgical area. Masks should cover the nose and mouth. Caps should cover all hair. Street shoes should be clean and covered, or staff should change to shoes or boots that are worn only in the surgical area.

### **Use and Disposal of Needles and Other Sharps**

Waste disposal is a crucial aspect of infection prevention in health care facilities. In health care settings, injuries from needles or other sharp instruments are the number-one cause of occupational exposure to blood borne infections. All staff who come in contact with sharps--from doctors and nurses to those who dispose of the trash--are at risk of infections. Sharps can cause injury and transmission of serious infections, including HIV and hepatitis B. If possible, all staff at risk of exposure to blood or other body fluids should be vaccinated against hepatitis B as a precaution.

Hypodermic needles should not be routinely recapped and should never be bent or broken before disposal. Needles should not be removed from syringes before disposal.

Needles and other sharps should be handled as little as possible after use. If recapping is absolutely necessary, the one-hand technique should be used, as follows:

- Place the cap on a flat surface, then remove your hand.
- With one hand, hold the syringe and use the needle to “scoop-up” the cap.
- When the cap covers the needle completely, use the other hand to secure the cap on the needle hub, being careful to handle the cap at the bottom only, near the hub.

Sharps should be disposed of in puncture-resistant containers. A puncture-resistant sharps container can be made out of a heavy cardboard box, an empty plastic jug, or a metal container.

Sharps containers should be available wherever sharps are used. Containers should be disposed of when they are three-quarters full. Sharps containers should be available in injection rooms, treatment rooms, operating theaters, labor and delivery rooms, and laboratories. They should never be filled to capacity, because sharps may penetrate the container wall and cause injury.

Unprotected sharp items should not be passed directly from one person to another during surgical/clinical procedures. During surgical/clinical procedures, sharps should be placed in and picked up from a kidney basin or a designated “safe zone” to minimize the risk of injury to clients and providers.

A new or properly processed needle and syringe should be used every time an injection is given or medication is withdrawn from a multi-dose vial. A new or properly processed needle and syringe should be used to prevent contaminating the solution in the vial. Needles should never be left inserted in the vial cap, because the hole in the needle can allow contaminants to get into the solution. Processing Instruments and Other Items:

#### **Processing reusable instruments and other items**

used in surgical/clinical procedures involves four steps:

1. Decontamination
2. Cleaning
3. Sterilization or high-level disinfection (HLD)
4. Storage.

The order of the steps, as well as the area in which they are performed, are important to reduce the number of microorganisms on the instruments and other items, and minimize the risk of infections. Proper processing of instruments and other items that will be reused in clinical procedures is critical for reducing infection transmission to clients. Staff involved in processing items for reuse are at high risk of infection and need to take appropriate steps to reduce this risk.

### *Housekeeping*

Housekeeping is the general cleaning and maintenance of cleanliness in a health care facility. In addition to cleanliness, it reduces the number of microorganisms in the facility (thus reducing clients’ and staff members’ risk of infections) and provides an appealing work and service-delivery space.

Non-client-care areas should be kept free of dust, dirt, and organic debris. Non-client-care areas should have an orderly appearance, as follows:

- The areas should be cleaned with a cloth or mop dampened with detergent and water once a week or when visibly dirty.
- Cloths and mops should be damp so the dirt and dust particles are picked up not spread around.
- Waste containers should be emptied daily.
- Toilets, latrines, and sluice rooms should be cleaned daily with a disinfectant cleaning solution.

Client-care areas should be dusted each morning and cleaned with a disinfectant cleaning solution between clients and at the end of each clinic session or day. Client-care areas require special attention to cleaning, as follows:

- Surfaces should be dusted and mopped with water at the beginning of each day, because dust settles overnight. Cloths and mops should be damp so that the dirt and dust particles are picked up, not spread around.
- Between clients, all potentially contaminated surfaces should be wiped with a cloth dampened with a disinfectant cleaning solution.
- At the end of each clinic session or day, all surfaces and floors should be wiped or mopped with a cloth or mop soaked in a disinfectant cleaning solution.
- Spills of any type should be cleaned immediately with a 0.5% chlorine solution.

## *Waste Disposal*

There are three kinds of waste generated at a health care facility: general, medical, and hazardous chemical waste.

**General waste:** nonhazardous waste that poses no risk of injury or infections, including uncontaminated paper, boxes, packaging materials, bottles, plastic containers, and food-related trash.

**Medical waste:** material generated in the diagnosis, treatment, and/or immunization of clients, including: blood, blood products, and other body fluids, as well as materials containing fresh or dried blood or body fluids (e.g., bandages, surgical sponges); organic waste, such as human tissue, body parts, placentas, and products of conception; sharps (used or unused), including hypodermic and suture needles, scalpel blades, blood tubes, pipettes, and other glass items that have been in contact with potentially infectious materials (e.g., glass slips, cover slips).

**Hazardous chemical waste:** chemical waste that is potentially toxic or poisonous, including cleaning products, some disinfectants, cytotoxic drugs, and radioactive compounds.

Proper handling and disposal of waste minimizes the spread of infections and reduces the risk of accidental injury to staff, clients, visitors, and the community. All staff should wear utility gloves and shoes when handling medical and hazardous chemical waste.

**Solid medical waste** should be either burned or buried in a pit. Properly burning or burying medical waste protects the community from accidental exposure to infectious agents. Burning in an incinerator or oil drum is recommended. Open burning is not recommended, because it causes scattering of waste, is dangerous, and is unattractive.

The community should be protected from possible exposure to medical waste. Interim storage sites and medical waste-disposal sites should be located in areas that are minimally accessible to staff, clients, and visitors. If they are not contained (e.g., in an incinerator), they should be protected by a barrier such as a fence or wall to keep animals and children out.

**Liquid medical waste** and hazardous chemical waste should be poured down a drain or buried in a pit. Liquid medical waste and hazardous chemical waste can be hazardous to the environment and should be disposed of according to local regulations. If there are no guidelines, pour solutions down a utility-sink drain, flushable toilet, or latrine, or bury them in a pit. Do not pour solutions directly on the ground or near an outdoor water source.

Medical-waste containers should be cleaned with a disinfectant cleaning solution and rinsed with water daily, or more often, if visibly contaminated. Staff should always wear heavy utility gloves and shoes when cleaning the containers.

### *Post Exposure Prophylaxis*

PEP is the use of therapeutic agents to prevent infection following exposure to a pathogen. PEP is given for exposures including; percutaneous (needle stick), splash, bites, and sexual contact. For health care workers, PEP is commonly considered for exposures to HIV and Hepatitis B.

The biologic rationale for PEP with antiretroviral treatment is that it can take several hours or even days for HIV to actually start reproducing within the body (CDC, 2001). If medication can be given to prevent viral propagation from starting, it can prevent a health care worker from acquiring HIV from a source patient.

The National AIDS Program of the Belize Ministry of Health has outlined specific guidelines for post-exposure prophylaxis for health care workers. (See the National guidelines for Prophylaxis Treatment.)

It is important that ALL nurses and other members of the health care team, including nursing students, familiarize themselves with the PEP policy. Important Steps for Post-Exposure Prophylaxis include:

- First Aid.
- Report Exposure.
- Evaluation of Exposure.
- Evaluation of Exposure Source.
- Evaluation of the Exposed Person.
- Determine the need for PEP.



## Reference Information

1. EngenderHealth(2001). "Prophylaxis Treatment: National AIDS Program", Ministry of Health, Belize. file:///carver/Desktop%20Folder/ip%20for%20pdf/final/index.html.
2. HIV and AIDS Resource Guide, Faculty of Medical and Health Science (2008). University of Namibia, Chapter 14.



## Learning Activity 1: Case Studies

### **Instructions to Lecturer:**

- Divide students into groups of four.
- Assign one case study to each group.
- Allow 15 minutes for small group discussion.
- Ask one student to read the case study to the large group and present a summary of the group discussion.
- Possible answers to case studies are given in parenthesis at the end of each case study.

### **Instructions to Students:**

- Read each case study carefully and brainstorm possible answers.
- Select one person from your group to present to the large group.

## Case Scenarios:

### Case Study 1

Dr.Vanzie works in a family health clinic. The building is old and none of the sinks are located in or near the examination rooms. Though Dr. Vanzie examines many clients during the course of each day, he does not routinely wash his hands before or after examining clients because it is inconvenient to do so. Is this an appropriate practice? If not, what are the alternatives to hand washing for Dr. Vanzie?

### *Case Study 1 Answer*

*Hands should always be washed before and after contact with every client. Hand washing is the most effective way to prevent transmission of infections. If a sink with running water is not available, one of the following should be provided in each examination room:*

*Soap, a bucket with a tap, and a basin.*

*Soap, a bucket and a pitcher.*

*A bottle of alcohol or a container of alcohol hand rub solution.*

*Wherever Dr. Vanzie washes his hands, he should dry them with a clean towel, use a disposable towel, or allow his hands to air-dry, since towels used by more than one person can easily become contaminated.*

### Case Study 2

Mrs. Guerrero is a midwife at a busy medical clinic. This morning, she arrived late to work because she had to take her sick daughter to her mother's house before taking a bus to work. When Mrs. Guerrero arrived at the clinic, many people were waiting for her, so she immediately began seeing clients. At one point, she thought about washing her hands, but she felt guilty about coming to work late and did not want to keep her clients waiting any longer. Besides, her hands did not look dirty. Did Mrs. Guerrero act appropriately? If not, why and what should she have done in this situation?

#### Case Study 2 Answer

*Hands should always be washed immediately after arriving at work. Even though Mrs. Guerrero's hands appeared to be clean, after having contact with her sick child and taking public transportation, her hands harboured many bacteria and infectious microorganisms. She should have stopped seeing clients and washed her hands as soon as she remembered, and she should wash her hands before and after contact with each client.*

### Case Study 3

The Chief Medical Officer (CMO) at a health clinic formed a committee to study the recent and steady increase in the number of clients being treated for infectious diseases as well as the increase in the number of staff absent due to illness. Clinic supplies were being depleted and the staff was overworked due to illness. The CMO was aware that infection prevention practices were poor at the clinic but other problems needed more immediate attention. The committee studied the problem and determined that the increase in client numbers was due to recent urbanization of the area surrounding the clinic and the increase in staff illness was directly related to the increased exposure to infectious diseases at the clinic. The committee recommended that the clinic budget more money for supplies and hire more staff to handle the increased client volume. Are the committee's comments valid? If you were on the committee, would you offer further comments or recommendations?

#### Case Study 3 Answer

The committee identified some reasons for the increase in infectious diseases and staff absenteeism, but they failed to identify a major contributing factor: poor infection control at the clinic. The committee should first have recommended that an infection control team with representatives from all departments of the clinic be chosen. Ideally the entire infection prevention team attends an infection prevention workshop, but if that is not possible then the members should complete a self-instructional course. Once their training is completed, the team should assess the infection prevention practices currently being performed at the clinic, identify problem areas, train the staff in infection prevention practices, monitor these practices, and educate staff and community on disease transmission. In many health care facilities worldwide, the request for funds to increase staff and supplies is not a viable alternative. By improving infection prevention practices at the clinic, both the staff's and clients' health will benefit.

### Case Study 4

Anita works in a woman's health clinic and is responsible for charting client's blood pressure, temperature, and weight, and for drawing a few drops of blood from clients' fingers to check their hematocrit. She does not wear gloves during any part of this process but does wash her hands before seeing the next client. Is this an appropriate infection prevention practice? Why?

#### Case Study 4 Answer

*Anita should not draw blood from a client without wearing gloves, regardless of the amount of blood being drawn. Anita should put gloves on after charting the weight and before drawing the blood. She should also wash her hands after removing the gloves and before picking up a pen to continue charting vitals.*

### Case Study 5

While suturing the peritoneum, Dr. Hemsley punctures her finger with a contaminated suture needle. She drops the needle holder with suture needle on the sterile field and asks the circulator to remove his gloves. The wound is not bleeding much so, she “milks” the punctured finger. The circulator pours Betadine over the site and the scrub nurse helps the surgeon re-glove and removes the needle holder from the field. Surgery resumes. Is this appropriate management of needle stick injuries? Why?

#### Case Study 5 Answer

*Once the injury occurs, Dr. Hemsley should place the contaminated needle in a basin and the scrub should either pass the basin off the field to the circulator or place the needle in a remote area on the sterile back table. If the contaminated suture needle touches part of the sterile drape, the site should be covered with an impervious sterile cover. Dr. Hemsley should not squeeze the wound: instead, the circulator should pour soapy water over the site, followed by alcohol. After the alcohol dries, Dr. Hemsley may re-glove. Dr. Hemsley should report the needle stick injury to the appropriate administrative staff and follow protocols for post exposure prophylaxis.*

### Case Study 6

In a clinic, cotton balls are kept in a small, covered basin filled with benzalkonium chloride (Zephiran). Before giving an injection, Dr. Salazar takes out a cotton ball with her hand and uses it to wipe the client’s skin. Is this appropriate? If not, what should Dr. Salazar have done instead?

#### Case Study 6 Answer

*No. Benzalkonium chloride, a quaternary ammonium, is a disinfectant and thus should not be used as an antiseptic. In addition, it becomes easily contaminated, is slow-acting in killing microorganisms, and is inactivated by cotton gauze. Appropriate options would be povidone iodine, chlorhexidine, or alcohol. Also, cotton balls should not be left soaking in an antiseptic solution, since repeated dipping of forceps or fingers into the container to pick up the cotton balls will contaminate both the solution and the remaining cotton balls. Store cotton balls and antiseptic solutions separately.*



## Learning Activity 2: Field Trip to Clinic or Hospital

### **Instructions to Lecturer:**

- Arrange a field trip to the Western Regional Hospital for students to get a first-hand experience with the way the hospital implements universal precautions, including hand washing, gloving, PPE, and PEP.
- Arrange for a nurse/staff to conduct a lecture on universal precautions in the hospital setting.
- Ask students to use the checklist below to record their observations.

### **Instructions to Students:**

- Observe the hospital setting specifically for hospital rules related to universal precautions.
- Prepare questions a priori and be ready to ask them of the nurse/staff conducting the lecture.

## Waste-Disposal Checklist

Use this checklist to help determine whether the healthcare facility is currently practicing waste disposal adequately. Tour the facility--including the final waste-disposal site--and use this checklist to record whether the following practices are performed correctly.

For each "no" answer below, determine why the appropriate practice is not being performed.

### 1. Sorting

Your facility has separate containers for medical waste, general waste, and sharps. \_\_\_Yes | No\_\_\_

All three types of containers are clearly marked or labelled. \_\_\_Yes | No\_\_\_

Medical and sharps containers are located in every area where they might be needed (including operating rooms, procedure rooms, and instrument processing rooms). \_\_\_Yes | No\_\_\_

Washable, leak-proof containers (preferably plastic or galvanized metal) are used for disposal of medical waste in operating theatres and procedure rooms. \_\_\_Yes | No\_\_\_

These containers are washed with a disinfectant cleaning solution at least once a day. \_\_\_Yes | No\_\_\_

Sharps containers are made of a puncture-resistant material (cardboard, plastic, or metal). \_\_\_Yes | No\_\_\_

Staff do not have to walk across the room or farther carrying used sharps. \_\_\_Yes | No\_\_\_

### 2. Handling

All staff wear heavy utility gloves and sturdy shoes when handling medical waste. \_\_\_Yes | No\_\_\_

After handling medical waste, staff wash both their gloves and their hands. \_\_\_Yes | No\_\_\_

Medical waste containers are emptied daily or whenever they are 3/4 full. \_\_\_Yes | No\_\_\_

Sharps containers are closed securely and disposed of whenever they are 3/4 full. \_\_\_Yes | No\_\_\_

Medical-waste containers are cleaned with a disinfectant cleaning solution and rinsed with water daily, or more often, if visibly contaminated. \_\_\_Yes | No\_\_\_

When transporting waste containers within the facility, the containers are securely closed (staff never cart used waste in wheelbarrows or other open conveyances). \_\_\_Yes | No\_\_\_

### 3. Interim Storage

Interim storage sites and medical waste-disposal sites are located in areas that are minimally accessible to staff, clients, and visitors. \_\_\_Yes | No\_\_\_

All interim storage containers have lids. \_\_\_Yes | No\_\_\_

Interim storage sites are protected by a barrier such as a fence or wall to keep animals and children out. \_\_\_Yes | No\_\_\_

Waste is never stored on site for more than a few days before final disposal. \_\_\_Yes | No\_\_\_

### 4. Final Disposal

Waste is disposed of on the premises. \_\_\_Yes | No\_\_\_

Solid medical waste is either incinerated or buried in a waste-disposal pit. \_\_\_Yes | No\_\_\_

#### **If medical waste is burned in a drum incinerator:**

The incinerator is located downwind from the clinic. \_\_\_Yes | No\_\_\_

The incinerator has sufficient air inlets on the side. \_\_\_Yes | No\_\_\_

The incinerator is placed on hard earth or a concrete base. \_\_\_Yes | No\_\_\_

The incinerator is surrounded by a fence or wall to limit access. \_\_\_Yes | No\_\_\_

The fire is never left unattended. \_\_\_Yes | No\_\_\_

Only medical waste is burned. \_\_\_Yes | No\_\_\_

Ash from the incinerator is disposed of with general waste. \_\_\_Yes | No\_\_\_

#### **If medical waste is buried:**

The burial site is at least 50 meters away from any water source. \_\_\_Yes | No\_\_\_

The site is located downhill from any wells, is free of standing water, is in an area that does not flood, has proper drainage, and is not located on land that will be used for agriculture or development. \_\_\_Yes | No\_\_\_

The pit is 1-2 meters wide and 2-5 meters deep. The bottom of the pit is at least 1.8 meters above the water table. \_\_\_Yes | No\_\_\_

Every time waste is added to the pit, it is covered with a 10-30-cm layer of soil.

\_\_\_Yes | No\_\_\_

When the level of waste reaches to within 30-50 cm of the ground surface, the pit is filled with dirt, sealed with concrete, and another pit is dug.

\_\_\_Yes | No\_\_\_

Liquid medical waste and hazardous chemical waste are poured down a drain, toilet, or sink, or is buried in the waste-disposal pit.

\_\_\_Yes | No\_\_\_

If liquid waste is poured down a drain, toilet, or sink, it does not run through an open gutter or empty onto the grounds of the clinic.

\_\_\_Yes | No\_\_\_

If waste is poured down a drain, toilet, or sink, the area is rinsed thoroughly with water and cleaned with a disinfectant cleaning solution at the end of each day, or more frequently.

\_\_\_Yes | No\_\_\_

Containers that have held liquid waste are decontaminated with a 0.5% chlorine solution and soaked for 10 minutes before washing.

\_\_\_Yes | No\_\_\_

Liquid waste is never poured directly on the ground or near an outdoor water source.

\_\_\_Yes | No\_\_\_

Sharps are burned in a large, industrial incinerator.

\_\_\_Yes | No\_\_\_

**If a large industrial incinerator is not available:**

Sharps are decontaminated, then rendered harmless by being melted into a solid block of plastic before being buried in a proper waste-disposal pit.

\_\_\_Yes | No\_\_\_

(Source of checklist: EngenderHealth [www.engenderhealth.org](http://www.engenderhealth.org) | [info@engenderhealth.org](mailto:info@engenderhealth.org))



## Learning Activity 3: Lab Activity

### **Instructions to Lecturer:**

- Arrange with the lab technician at the University to have a lab session for students to practice the following:
  - o Hand washing.
  - o Gloving.
  - o Proper use of protective gear.
  - o Disposal of needles and sharps.
- After several practices, use a checklist to assess their competency in each category. (See checklist for gloving below).

### **Skills Practice Checklist: Gloving**

**Instructions:** Check “yes” if the task was performed correctly; check “no” if the task was not performed correctly or was not performed.

*Note:* For the purpose of this activity, it is not necessary to perform all of the tasks that are not directly involved in putting on or removing gloves (e.g., performing surgical scrub, placing the used gloves in decontamination solution). Check “yes” if the task is mentioned at the appropriate moment, even if it is not performed.

#### **Putting on Gloves**

1. Prepares a large, clean, dry area for opening the package of gloves. \_\_\_Yes | No\_\_\_
2. Opens the outer glove pack and performs surgical scrub, or performs surgical scrub and then has someone else open the pack. \_\_\_Yes | No\_\_\_
3. Opens the inner glove wrapper, exposing the cuffed gloves with the palms up. \_\_\_Yes | No\_\_\_
4. Picks up the first glove by the cuff, touching only the inside portion of the cuff. \_\_\_Yes | No\_\_\_
5. With the fingers of the glove pointing down, holds the cuff in one hand while slipping the other hand into the glove. \_\_\_Yes | No\_\_\_
6. Waits to make any adjustment to the first glove until the second glove is on. \_\_\_Yes | No\_\_\_
7. Picks up the second glove by sliding the fingers of the gloved hand under the cuff of the second glove. \_\_\_Yes | No\_\_\_
8. Puts the second glove on the ungloved hand by maintaining a steady pull through the cuff. \_\_\_Yes | No\_\_\_

9. Does not attempt to adjust the cuffs once the gloves are on. \_\_\_Yes | No\_\_\_

10. Adjusts the position of the glove fingers until the gloves fit comfortably. \_\_\_Yes | No\_\_\_

### Removing Gloves

1. Rinses gloved hands in a basin of decontamination solution. \_\_\_Yes | No\_\_\_

2. Grasps one of the gloves near the cuff and pulls it part-way off. \_\_\_Yes | No\_\_\_

3. Leaving the first glove over the fingers, grasps the second glove near the cuff and pulls it off. \_\_\_Yes | No\_\_\_

4. Pulls off the first glove, being careful to touch only the inside surface with the bare hand. \_\_\_Yes | No\_\_\_

5. Removes the second glove.

6. If the gloves are intact and are to be reused, places them in a container of decontamination solution. If they are disposable or not intact, disposes of them properly. \_\_\_Yes | No\_\_\_



### Learning Activity 4: Poster

**Instructions to Lecturer:**

- Identify posters with proper hand washing techniques and make copies for students to distribute around campus.

Source of checklist: EngenderHealth | [www.engenderhealth.org](http://www.engenderhealth.org) | [info@engenderhealth.org](mailto:info@engenderhealth.org)



## Learning Assessment 1: Observation

### **Instructions to Lecturer:**

- Use checklists (like the one above) above to assign a grade to students' competencies in hand washing, gloving, proper use of protective gear and disposal of needles and sharps.
- Provide feedback to students at the end of the observations.



## Learning Assessment 2: Written Test

### **Instructions to Lecturer:**

- The following are a set of questions to test participant knowledge of the information presented in this chapter. These questions may be incorporated into exams or administered as seen fit.

### **Instructions to Students:**

- Read each numbered statement and circle the correct answer.

## Chapter 7 Test

### TRUE or FALSE

1. Boiling is a method of sterilization.  
True | False
2. Items such as pickups (lifters, cheatle forceps), suture needles, and surgical scrub brushes should not be left soaking in antiseptic or disinfectant solutions.  
True | False
3. Fumigation (disinfectant fogging) with formaldehyde is an effective way to reduce contamination of surfaces such as walls and ceilings in order to prevent infection.  
True | False
4. Hands should always be washed after removing gloves.  
True | False

5. To reduce contamination, limit the number of people permitted into operating theatres and processing rooms.  
True | False
6. If instruments will be sterilized or high-level disinfected, cleaning with detergent and water is not necessary.  
True | False
7. Housekeeping staff should wear utility gloves when cleaning operating theatres and procedure rooms.  
True | False
8. Proper storage of instruments and other items is as important as careful sterilization or high-level disinfection.  
True | False
9. Hepatitis B can be transmitted to a health care worker through splashes of blood or other body fluids onto unbroken skin.  
True | False
10. Transmission of blood-borne infections from infected health care workers to their clients is a common problem.  
True | False
11. Sterilization is preferred over HLD for items that will come in contact with the bloodstream and tissues under the skin.  
True | False
12. Single-use examination gloves are not acceptable for use during pelvic examination.  
True | False
13. Most surgical site infections occur from contamination of the wound after the client leaves the health care facility.  
True | False
14. Housekeeping equipment such as mops, brushes, sponges, and buckets do not need to be decontaminated and cleaned since those items are used with a disinfectant cleaning solution.  
True | False
15. Burial sites for medical waste should not be located near water sources because of the potential to contaminate the water.  
True | False

## Multiple Choice

16. Proper infection prevention practices are important for:
- Preventing infections in service providers and other staff.
  - Preventing surgical site infections, abscesses, and pelvic inflammatory disease in clients.
  - Protecting the community from infections that originate in health care facilities.
  - All of the above.
17. Decontaminating instruments and other items in a 0.5% chlorine solution:
- Reduces the risk of infections in facility staff by killing HIV and the hepatitis viruses.
  - Should be done after cleaning if the items are very bloody.
  - Allows instruments and other items to be reused immediately.
  - None of the above.
18. Hand washing:
- Decreases client sickness and death.
  - Is usually performed correctly, and when appropriate in most health facilities.
  - Is not necessary if the hands appear to be clean.
  - All of the above.
19. To reduce the risk of infection and injury:
- Recap all hypodermic needles immediately after use by holding the needle still in one hand and carefully placing the cap over the needle with the other hand.
  - When passing sharps, transfer the sharp from your hand to the other person's hand.
  - Dispose of sharp objects along with medical waste, such as used bandages/gauze.
  - None of the above.
20. Housekeeping staff are at risk of infections:
- When cleaning administrative offices and other non-client care areas.
  - When disposing of medical waste.
  - When mixing a disinfectant cleaning solution.
  - These staff are not at risk of infections if they are not directly involved in client care activities.
21. Which of the following are appropriate infection prevention practices?
- Changing the needle, but not the syringe, between injections.
  - Leaving a hypodermic needle inserted through the stopper of a multidose vial.
  - Using a new or processed needle and syringe to draw up medication from multidose vial.
  - All of the above.

22. HIV can be transmitted by all of the following EXCEPT:

- a. Insect bites.
- b. Unprotected vaginal intercourse.
- c. Breastfeeding.
- d. Blood transfusion.
- e. Use of contaminated syringes.

23. Which of the following will likely cause contamination?

- a. Leaving gauze sponges soaking in antiseptic.
- b. Pressing the cotton to the lip of the antiseptic container and inverting it.
- c. Dipping cotton into the main antiseptic container.
- d. All of the above.

24. Which statement about surgical attire is correct?

- a. If shoe covers are not available, staff may walk around the operating room with bare feet.
- b. Caps and masks worn in the operating room should be sterile.
- c. Sterile surgical gloves should be considered contaminated if your gloved hands drop below the level of your waist.
- d. When removing surgical gloves, always remove the first glove completely and then remove the second glove with your bare hand.

25. Which of the following are considered medical waste?

- a. Outdated client records.
- b. Used bandages.
- c. Trash from the hospital kitchen.
- d. Unused condoms.
- e. None of the above.

# CHAPTER 8

## *Adherence to Antiretroviral Therapy*

### Learning Objectives

- Explain how antiretroviral (ARV) medications work in relation to the HIV Lifecycle.
- Identify commonly used HAART in Belize.
- Identify common side effects of HAART medications.
- Discuss the factors to consider when starting a patient on HAART.
- Explain Caribbean guidelines for ART in adults and children.
- Define opportunistic infections of HIV infection.
- Counsel patients in OI prevention.
- Explain why adherence is critically important in HIV and other treatment
- Identify patient, medication and provider barriers to adherence to ART and other medications.
- Discuss key strategies in promoting adherence in ART.
- Counsel patients in adherence counselling.



### Reference Information

HIV is a retrovirus. So drugs against HIV are called anti-retroviral drugs: Antiretroviral drugs - shortened to ARV drugs. Giving ARV drugs in the correct way, with adherence support, is called ARV Therapy - shortened to ART.

#### How do antiretroviral drugs interfere with the life cycle of HIV?

There are 3 big groups of antiretroviral drugs available:

- **NRTI**: this stands for 'Nucleoside and Nucleotide Reverse Transcriptase Inhibitors' (divided into NsRTI and NtRTI).
- **NNRTI**: this stands for 'Non-Nucleoside Reverse Transcriptase Inhibitors'.
- **PI**: stands for Protease Inhibitors.

The nucleoside and non-nucleoside inhibitors (NRTI and NNRTI) both have the same "target." They prevent HIV from entering the infected cell's centre, so HIV can't start making new copies. Protease inhibitors (PI): when the central part of the body cell makes parts of the HIV virus after infection, these parts have to be cut and put together in the right way before the new HIV copies can leave the cell. Protease inhibitors prevent this "cut and putting together" from happening correctly, so the newly produced virus parts cannot leave the infected cell and infect other cells. The important point is that protease inhibitors and nucleoside/non-nucleoside inhibitors work at different steps in the process that HIV goes through when it makes new copies of itself inside cells.

### The Different Antiretroviral Drugs

The table below mentions commonly used ARV drugs. The table is not complete, and does not contain rarely used drugs, or drugs that are not yet available in most resource-constrained settings. They include: zidovudine (ZDV or AZT), stavudine (d4T), lamivudine (3TC), nevirapine (NVP), and efavirenz (EFV). These are the ARV drugs used in the first-line regimens.

<b>Nucleoside reverse transcriptase inhibitors (NsRTI)</b>	<b>Nucleotide reverse transcriptase inhibitor (NtRTI)</b>	<b>Non-nucleoside reverse transcriptase inhibitors (NNRTI)</b>	<b>Protease Inhibitors (PI)</b>
Stavudine (d4T) Lamivudine (3TC) Zidovudine (ZDV) Didanosine (ddI) Abacavir (ABC)	Tenofovir Disoproxil Fumarate (TDF)	Nevirapine (NVP) Efavirenz (EFV)	Saquinavir (SQV) Ritonavir (RTV), as booster Indinavir (IDV) Nelfinavir (NFV) Lopinavir (LPV)

### HAART

HIV treatment with three or more antiretroviral medications is referred to as “Highly Active Antiretroviral Therapy”, or HAART. “Antiretroviral Therapy”, or ART, can be used interchangeably with HAART. “Once a patient starts HAART, it is a lifelong commitment.

Combination therapy makes sense for lots of reasons. Here are the most important ones:

- It takes a lot of force to stop HIV. HIV makes new copies of itself very rapidly. Every day, many new copies of HIV are made. Every day, many infected cells die. One drug, by itself, can slow down this fast rate of infection of cells. Two drugs can slow it down more, and three drugs together have a very powerful effect.
- Antiretroviral drugs from different drug groups attack the virus in different ways. In the beginning of this chapter, we learned how different anti-HIV drugs attack HIV at different steps of the process of making copies of itself (first when entering the cell centre, and then when new copies want to leave the cell). Hitting two targets increases the chance of stopping HIV and protecting new cells from infection.
- Combinations of anti-HIV drugs may overcome or delay resistance. Resistance is the ability of HIV to change its structure in ways that make drugs less effective. HIV has to make only a single, small change to resist the effects of some drugs. For other drugs, HIV has to make several changes. When one drug is given by itself, sooner or later HIV makes the necessary changes to resist that drug. But if two drugs are given together, it takes longer for HIV to make the changes necessary for resistance. When three drugs are given together, it takes even longer.

## Benefits of ART

- Prolongs life and improves quality of life.
- Households can stay intact.
- Decreased number of orphans.
- Reduces mother-to-child transmission.
- Increased number of people who accept HIV testing and counselling.
- Increased awareness in the community, since more people do the test.
- Decreased stigma surrounding HIV infection since treatment is now available.
- Increased motivation of health workers, since they feel they can do more for HIV patients.
- Less spent to treat opportunistic infections and provide palliative care.
- Businesses can stay intact.

## What is the Goal of ART?

- ART blocks viral replication, thus preventing further disease progression and immune system damage.
- The body's defence (immune system) gets a chance to recover and less opportunistic infections occur. However, antiretroviral therapy does not cure HIV infection.
- The goal of the therapy is to reduce the number of virus in the blood as much as possible and increase the number of CD4 as much as possible. The virus can never be eradicated completely, so the person should take the drugs forever, even if symptoms have disappeared. Since the virus cannot be eradicated, safe sex has to be practised.

## When to Start ART

Antiretroviral therapy is not necessarily started when a patient is first infected with HIV. Although some evidence suggests that starting medicines before a patient is symptomatic can prolong life, there are many obstacles to treatment (Sterling, TR, 2003). Antiretroviral therapy can be costly. Also, the virus can develop resistance to these medications in much the same way that bacteria can become resistant to the effect of antibiotics. The medicines can also be difficult to take, they have many side effects and also patients who do not feel ill from their disease may not be motivated to take medicines that make them feel ill.

Due to the complexities of taking ARVs, health care workers should remember that starting HAART is never an emergency. Taking antiretroviral therapy requires a life-long commitment from the patient. Correct and consistent use is required for the medicines to be effective and the response to be durable or to last. Thus, the decision about when to start therapy is an important one. Treating someone too early before therapy is truly indicated or before the patient is psychologically prepared may lead to unnecessary toxicity and development of medicine resistance. Careful consideration of various important factors, e.g. clinical, immunological and social, should be taken into consideration before a patient starts HAART.

## HAART in Belize

MOH utilizes the clinical staging, as established by the WHO criteria, for starting ART and/or a CD4 count of 350 or lower. Aside from the ARV treatment offered at specific treatment sites, the government buys medications for most opportunistic infections at no cost to the patient. The WHO Criteria is a guide as to when ART medication should effectively be administered. This criteria is used in the Caribbean and in Belize.

### Clinical Assessment Prior To Starting Treatment

Once an individual has been diagnosed with HIV, he/she would need to be seen by a health care provider to determine whether or not they are eligible for ARV treatment according to the MOH ART Guidelines. An accurate assessment of the WHO clinical stage of each HIV patient, at diagnosis and at every 6 months thereafter, is a critical and required step in assuring that patients are referred for antiretroviral therapy. Persons who have been ill or hospitalized in the preceding year should be carefully and rapidly assessed. A CD4 count should be determined in order that HIV-infected persons with few or no symptoms (Stages 1 and 2), but who have CD4 cell counts below the appropriate cut off point, are also offered HAART. Considering the variability of CD4 cell determination, this test should be repeated in asymptomatic patients (WHO Stage 1) before starting HAART. An assessment of baseline viral load is not considered essential before starting ART. Some OIs may need treatment before the patient initiates HAART.

Specific laboratory investigations are recommended at baseline before the initiation of ART, and at follow-up as indicated. Such tests are needed to monitor response to treatment and to identify potential toxic reactions which might trigger changes in ARV regimens according to the national guidelines. Results of screening baseline laboratory tests will influence the choice of antiretroviral (ARVs) to be used.

The recommended minimum laboratory tests before initiating ART are:

- HIV antibody test, confirming HIV infection.
- Full blood count to monitor for anaemia and thrombocytopenia.
- Serum alanine aminotransferase (ALT) level to assess the possibility of hepatitis and to monitor for hepatotoxicity.
- Serum creatinine to assess baseline renal function.
- Serum RPR.
- Hepatitis B surface antigen to detect chronic hepatitis B.
- Pregnancy tests for all women of childbearing age.

CD4 testing is recommended at baseline to determine eligibility for HAART and for monitoring response to treatment. CD4 tests are available to all Belizeans receiving HAART. Unavailability of CD4 testing or results should not delay the onset of ARV therapy for those who need it on clinical grounds.

Adult patients with a CD4 cell count of below 300 (and/or in WHO Clinical Stage 3 or 4) and all HIV-exposed children should be started on cotrimoxazole prophylaxis for the prevention of pneumocystis pneumonia. Various studies in African countries have demonstrated that cotrimoxazole prophylaxis has been helpful in preventing cerebral toxoplasmosis, malaria, and bacterial infections such as pneumonia.

Additional baseline and routine laboratory monitoring is recommended for patients on second line regimens, including serum lipid and glucose levels for patients with other cardiovascular risk factors. Other tests may be indicated based on the suspicion of a medication toxicity (such as ddI-induced pancreatitis) or clinical disease progression. Patients should also be evaluated for TB-HIV coinfection.

Patients found to have active TB must be started on appropriate TB treatment. TB treatment can affect the timing of starting HAART, as well as which HAART regimen to use. Patients who are asymptomatic for TB and fit the criteria for IPT can be started on Isoniazid (INH) preventive treatment for TB.

## Drug Effects on the Body

When we take a drug by mouth, it first enters the gastro-intestinal tract (stomach, intestines, etc.). In the gastro-intestinal tract, the drugs are dissolved and absorbed through the gut wall into the blood. The drug then passes through the liver. It is then distributed to the tissue, and in the end it is excreted from the body. When the drugs come into the circulation (the blood) they need to reach a level (or concentration) that is high enough in order to be effective against the virus. We normally have good drug levels in the blood if:

- We take the correct number of pills as the health care worker prescribes.
- We do not miss a dose or take a dose too late.
- We take into consideration interactions with other drugs which can lower the concentration.

Imagine our body as a bottle with a small hole in the bottom.

*Let's now imagine we want to keep the bottle full. To keep the bottle full, we need to add in time what has been lost through the small hole. If we are late to fill the bottle, the water level drops and the bottle will be half empty instead of full.*

*The same is true for drugs in the body: if we do not take our drugs in time, the body will be 'half-empty' with drugs. When the body is 'half-empty' with drugs, the effect against the virus will not be good. While making so many copies of itself, it sometimes makes mistakes.*

### Resistance

Some of the HIV variations or mutations can have a special 'coat' around their body, that makes the virus better protected better against the effect of drugs than the original virus. This virus with mutations is a resistant virus. Resistance is a change in the virus that makes the virus protected and ARV drugs ineffective.

### What happens to HIV when drugs are taken correctly?

When the drugs are taken correctly, the virus cannot make new copies of itself. Both the 'normal' virus and the mutation are suppressed, because the combination of 3 drugs that are constantly present in a sufficient level in the blood is so strong.

### What happens when the drugs are not taken correctly?

When the drugs are not taken correctly, the level of drugs in the blood is still high enough to combat the normal type of virus. So the number of normal virus will not increase.

Some of the mutations of HIV, however, have the 'protective coat' around them. The protective coat is not strong enough if the level of drugs is high. But when the level of drugs is low, because the patient is not taking the drugs correctly, the coat will protect the virus against the action of the drugs. This means that the virus with the protective coat (resistant virus) can still continue to make copies of itself, while the normal type of virus cannot. After some time, the body will contain more and more resistant virus, and less and less normal virus. The result will be that the drugs will lose their effect. This means that slowly, the number of CD4 will decrease again, and after several months, the patient will start to have new opportunistic infections again. This is what we call treatment failure.

### **Mutations and HIV**

When a patient is not adherent, the patient will develop treatment failure and become sick again. For example, your patient takes the fixed drug combination of d4T-3TC-NVP, one pill in the morning and one in the evening. If this patient forgets more than 3 pills per month, resistance will develop! This needs to be explained to the patient.

The same is true for HIV: by mistake, HIV makes some copies that do not look exactly the same as the original. These variations are called mutations. Patients need to know that if they do not take the ARV drugs with very high adherence, the drugs stop working- both for the individual and gradually for the whole community (because of resistance). First-line treatment is the most effective and easiest to take (less side effects than second-line treatment). First-line treatment can give years of life if the patient has almost perfect adherence. Second-line treatment is harder to take and more expensive.

### **Immune Reconstitution Inflammatory Syndrome (IRIS)**

Providers need to be alert to the possibility of a patient experiencing IRIS after commencement on HAART. IRIS usually occurs in the first few weeks after a patient starts therapy. Patients will present with symptoms that suggest worsening of previously diagnosed opportunistic infections or the development of new infections. Although patients with IRIS appear as though HAART is failing, these patients are actually undergoing robust improvements in function of their immune systems. IRIS is a relatively common syndrome that results from a dramatic increase in the inflammatory response to antigens from previous, partially treated or latent infections in HIV patients shortly after initiating HAART. Some of the infections which have been associated with IRIS include focal atypical mycobacterial infection (MAC), cryptococcal meningitis with a marked increase in CSF WBCs, mild herpes zoster, PML, CMV retinitis, and progression of TB lesions.

### **Side Effects**

Most drugs have side-effects of some sorts, although in the majority of cases they are mild, and not all people taking drugs will experience the same effects and to the same extent. Less than 5% of patients taking ART will have serious clinical side effects.

Many more will have non-serious but annoying side effects, especially in the beginning of therapy. Risk of side effects can be a big worry for your patient when they start ART for the first time. It is important that you warn patients about the very common side effects and suggest ways that they can be managed by the patient. It will help if you tell them what they can expect. You should also make it easy to get advice on managing other side effects or any worries they have. People with a higher number of side effects will usually stop taking their drugs correctly because they are discouraged by the side effects. If people do not take their drugs well, the therapy will not be successful. So if people are complaining about side effects, you should take their complaints seriously; if not, they might start to 'forget' taking pills.

### **HAART Side Effects**

Some patients on HAART may not experience any side effects. However, other patients on HAART may experience mild to occasionally severe, or perhaps life-threatening side effects. Side effects experienced depend on the particular HAART regimen that a patient is taking. Many side effects may be transient and only last for days or weeks after commencing treatment. It is essential that patients are monitored carefully so that signs of toxicity can be properly assessed in a timely manner. Nurses are in an important position of helping to monitor for side effects and making appropriate referrals for management.

As part of pre-HAART counselling, patients should be well-educated on potential side effects associated with their particular HAART regimen. They should be advised that they should not stop their medicines without first checking with a health care provider. If the patient experiences uncomfortable side effects, he/she should attend the ARV clinic as soon as possible. Often, side effects can be managed with simple pharmacological measures or patient education regarding taking medications. Stopping medicines without medical supervision can lead to problems with resistance.

Common but mild adverse effects occurring early in most antiretroviral regimens include gastrointestinal effects such as bloating, nausea and diarrhoea, which may be transient or may persist throughout therapy. Other common nuisance adverse effects are fatigue and headache caused by AZT and nightmares associated with EFV. Several uncommon but more serious adverse effects associated with antiretroviral therapy, including AZT-associated anaemia, d4T-associated peripheral neuropathy, PI-associated retinoid toxicity (exemplified by pruritus and ingrown toenails) and NNRTI-associated hypersensitivity reactions, are treated according to accepted therapy for these conditions in patients not receiving HAART. However, the subtle and serious nature of other adverse effects — lactic acidosis, hepatic steatosis, hyperlactatemia, hepatotoxicity, hyperglycemia, fat maldistribution, hyperlipidemia, bleeding disorders, osteoporosis and skin rash — warrant more detailed discussion.

### Three Types of Side Effects

#### Side Effects That Are Uncomfortable For Patient But Not Dangerous

- a) Some side effects are very common. Because they are very common, it is important to warn the patient about them and give them some simple advice on what to do if they occur. They include symptoms such as nausea, headache, dizziness, diarrhoea, feeling tired and muscle pain. Usually they occur when treatment begins and then improve within 2 to 4 weeks. If the patient does not understand these side effects and does not have a plan of how to cope with them, adherence will be poor then HIV resistance will occur and treatment outcome will not be good.

Efavirenz has some typical side effects that occur frequently. The patient should be reassured that this will go away after some weeks. For example: Efavirenz can cause strange dreams and nightmares, mood changes, dizziness and loss of concentration.

The list of possible side effects which are not dangerous is long—telling the patient about all of them could be discouraging and confusing. For each drug (and each drug regimen), we need to learn what the very common side effects are that health workers should prepare the patient to deal with. We also need to know how to provide clinical management when the patient seeks care, because the symptoms persist or become severe. Sometimes even these common side effects can be more severe if they persist for a long time or if the patient has an especially severe reaction. It should be made clear to the patient that after trying home management of the symptoms, that if the symptoms persist or become worse, the patient should seek care.

- b) Less common side effects: It is not necessary (or advisable) to warn patients about these side effects. However, you should be able to manage them. These include blue nails (from ZDV) or side effects that are very common with certain drugs but uncommon but do occur with the other drugs.

### **Potentially Serious Side Effects**

These require emergency consultation. The patient needs to be warned about these. For some, the patients need to seek care urgently if they occur. These are marked with a drum on the Patient Treatment Card. Examples include:

- Pallor (anaemia—can occur with ZDV).
- Yellow eyes due to sick liver (hepatitis—can occur with NVP or EFV).
- Severe abdominal pain.
- Rash – Although many new rashes that occur on NVP or EFV are mild, they can be serious so it is important for the patient to show them to the health worker as soon as possible.
- Burning, numbness or tingling in hands and feet due to d4T (peripheral neuropathy). In this case, the patient may not need to seek care immediately but should tell a health worker at the next appointment.

### **Side Effects Occurring Later During Treatment**

They tend to occur after the patient has been taking ART for several months or even years. The most common one is an abnormal distribution of body fat: fat gain on the abdomen, breasts, shoulders, neck (sometimes with fat lumps under the skin), as well as fat loss from legs, arms, buttocks and face (lipodystrophy). Good management of side effects includes:

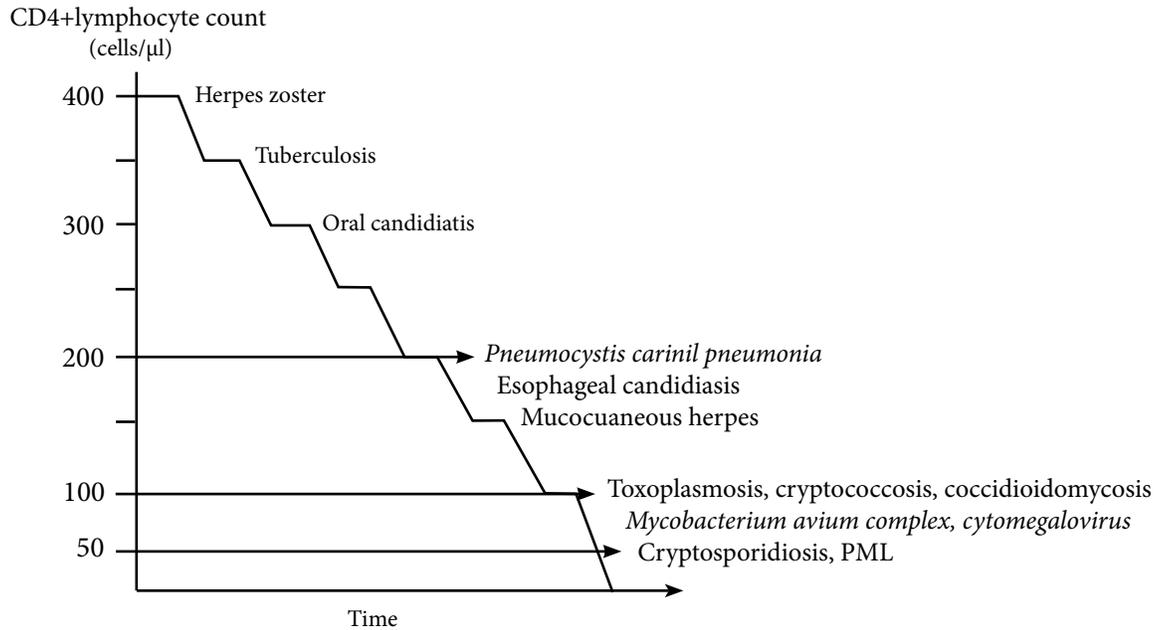
- Discuss very common possible side effects before the person starts the medication.
- Give advice on how to manage these side effects. Use the Patient Treatment Card for the regimen.
- Warn patients about potentially serious side effects and tell them to seek care urgently if they occur.
- Give immediate attention to side effects: access to the clinic or by phone.
- Initiate a discussion about side effects, even if the patient does not mention them spontaneously
- Refer the patient to peer-educators.

## *Opportunistic Infections*

An opportunistic infection (OI) is a disease that takes advantage of a person's immune system when it is weakened by HIV infection or other diseases like cancer. OIs are caused by viral, bacterial, parasitic and fungal organisms. Additionally, many OIs have been shown to increase viral load and may therefore increase HIV transmission. Common OIs that affect people with HIV include tuberculosis, oral and oesophageal candidiasis, PCP pneumonia, malaria, cryptococcal meningitis, and genital and anal herpes. Kaposi 's sarcoma and wasting syndrome are common AIDS defining conditions. The table below shows the relationship between CD counts and OIs.

## Figure 2 Association between OIs and CD4+-Lymphocyte count

### ASSOCIATION BETWEEN OPPORTUNISTIC INFECTIONS AND CD4+-LYMPHOCYTE COUNT



#### Prevention of Opportunistic Infections

When counselling patients with HIV, it is important to emphasize ways in which they can avoid OIs. Easy ways to avoid some of these infections include good hygiene practices such as good hand hygiene and thorough washing of food during meal preparation. (PLWHA should be especially careful about how they prepare food). The following counselling tips should ideally be incorporated into patient education sessions in order to help prevent OIs:

- Meats and poultry should be cooked thoroughly.
- Fruits and vegetables should be washed well.
- Water should be taken from the cleanest source available.
- If clean water is not available, water should be boiled before drinking.
- Infections can be transmitted from person-to-person; avoid contact with sick persons (especially when CD4 count is low).
- Infections can also be passed through contact with faecal material.

## OI Prophylaxis

OI prophylaxis are medications given to HIV-infected individuals to prevent either a first episode of an OI (primary prophylaxis) or the recurrence of an OI infection (secondary prophylaxis). Prophylaxis can benefit HIV-infected clients on ART, as well as clients currently not on ART, e.g., those who are waiting to start treatment. Indication for OI prophylaxis usually depends on the specific OI and a client's T-cell count.

For example, PCP prophylaxis, with cotrimoxazole, is generally started once the CD4 cell count drops below 300/mm<sup>3</sup>. Daily cotrimoxazole (bactrim) is the most commonly used prophylaxis and has been shown to reduce the risk of death and hospitalization of HIV-infected individuals. In several African countries, various studies have shown that cotrimoxazole not only reduces cases of pneumocystis pneumonia but also toxoplasmic encephalitis, malaria episodes, bacterial infections including bacterial pneumonia, bacterial diarrhoea and bacteraemia. (Wiktor SZ, 1999; Zachariah R, 2007) Cotrimoxazole prophylaxis (two x 400/80mg tablets – 800/160mg total-daily) is recommended for HIVinfected individuals who have WHO Clinical Stage 3 or 4 or a CD4 cell count < 300.

Though HIV patients who commence HAART are required to take the medicines for the rest of their lives, patients can actually safely discontinue OI prophylaxis once their immune system has improved. If an HIV patient on cotrimoxazole has an increase of CD4 count to above 300 for greater than 6 months on HAART, a provider can safely stop their cotrimoxazole treatment. (However, note that the patient should be restarted on cotrimoxazole if the CD4 drops below 300 again). HIV patients who have no active signs of TB (who fit specific criteria) should also be started on Isoniazid preventive treatment to prevent tuberculosis.

## Risk Reduction of Opportunistic Diseases Through Cotrimoxazole Prophylaxis

Health workers can decrease the risk of the patient developing some opportunistic infections that can even be fatal. This is done by giving certain tablets to the HIV positive person on a daily basis. This is called prophylaxis. A good prophylaxis is not expensive or complicated, but can increase the duration and quality of life. The most commonly used prophylaxis is prophylaxis with cotrimoxazole.

- *Pneumocystis pneumonia* (PSP) (this used to be called *Pneumocystis carinii* now called *Pneumocystis Jiroveci*): a type of pneumonia typical among people with low immunity. This type of pneumonia presents with shortness of breath on exertion, dry cough, fever, hypoxemia (decreased level of oxygen in the blood). The prognosis of this type of pneumonia is often bad.
- *Toxoplasma* brain abscess: this disease can cause hemiparesis (one side of the body is weak or cannot move anymore), often together with headache and fever.
- Pneumonia from *S. pneumoniae*.
- *Isospora belli*: this type of micro-organism is responsible for some cases of chronic diarrhoea with weight loss.
- *Salmonella* species: gastro-intestinal symptoms and fever.

## Criteria to Start Cotrimoxazole Primary Prophylaxis in Adults

All HIV+ people with WHO clinical stage 2,3,4 or with a CD4 count less than 200 cells/mm<sup>3</sup> should start cotrimoxazole prophylaxis. First ask about a previous history of sulpha allergy - these patients should not be given cotrimoxazole.

## Drug Regimen for Cotrimoxazole Prophylaxis

cotrimoxazole 480 mg, 2 tablets daily

OR

cotrimoxazole 960 mg, 1 tablet daily.

### Duration of Primary Prophylaxis

If an HIV+ patient has no access to ART, the primary cotrimoxazole prophylaxis should be taken for the rest of his/her life. If the patient has access to antiretroviral therapy, the cotrimoxazole primary prophylaxis can be stopped when the CD4 count has increased to 200 cells/mm<sup>3</sup>, and remains more than 200 cells/mm<sup>3</sup> for at least 6 months.

### Cotrimoxazole Prophylaxis Side Effects

In these cases, cotrimoxazole should be stopped and the patient referred.

- **Steven Johnson reaction:** a very severe drug reaction that can be fatal if not recognized. There is involvement of the eyes and mucosa of the mouth. The skin lesions can look like burns with blistering and peeling. Patients lose fluids (as they do from a burn) and can go into shock. These patients need to have cotrimoxazole stopped and should be referred urgently to hospital.
- **Fixed drug reaction:** one or several dark areas on the skin. They disappear when stopping the drug. They reappear on the same location when restarting the drug.
- **Other new generalized drug rashes:** If the patient has peeling or involves the eye or mouth or are associated with fever, stop and refer. If there is no peeling, no fever and no eye or mouth involvement, just stop the drug. Follow-up the next day.
- **Liver failure:** This is detected by jaundice (yellow colour of the white of the eyes) can appear. Stop all drugs. Call for advice or refer.
- **Haematological failure:** In rare cases, cotrimoxazole can suppress the bone marrow. The bone marrow is responsible for making new blood. This can present in several ways: the patient develops severe anaemia (looking pale or having low hemoglobin), and/or the patient develops a decrease in white blood cells (leading to infections) and/or the patient develops easy bleeding due to a decrease in blood platelets, which are responsible for clotting of the blood.

### Opportunistic Infections Even After ART

These can still occur in patients on ART. In the first months after starting ART, the CD4 count may not have gone up high enough yet to protect against infection. Later in treatment, a new opportunistic infection may be a sign of failure of therapy. This means the ART has stopped being effective, because the virus made some changes in its structure or that the patients have not taken the drugs correctly with good adherence.

## Adherence

The term “adherence” in the HIV context may be used to refer to the sum of several aspects of HIV management, including the patient’s ability to take ART medications exactly as prescribed, follow a prescribed care plan, attend follow-up visits, have required laboratory tests done, fill medications on time, adapt a healthy lifestyle and avoid risky behaviours (Rabkin, 2005).

Medication adherence means taking the right medicines, at the right time, in the right way. The “right medications” refers to taking the exact dosages that have been formulated based on international studies and deemed essential to preventing viral replication and resistance from occurring. The “right time” refers to the need for taking ART at set times, as there is a window period before efficacy is diminished. And, the “right way” refers to taking medications with the appropriate diet (e.g. taken with or without food), at the right temperature, and such.

### **Importance of Adherence in ARV therapy**

Adherence is a critical factor for successful ARV treatment and improved health status. Poor adherence is the most frequent cause of treatment failure and the development of resistance. Research shows that even missing one or two doses a week can have a big impact on the chance of successful treatment. (Patterson, 2000).

Patients need to strive to be 100% adherent to ARVs for life. Regular adherence to ART will decrease a patient's viral load, prevent multiplication of the virus, increase his or her CD4, and ultimately decrease morbidity and mortality. Poor adherence to ART will lead to treatment failure by allowing the virus to multiply and medicine resistance to emerge.

Medicine-resistance is a well-recognized occurrence during the course of treatment of various infectious diseases caused by bacteria, viruses and parasites, such as malaria. When an infectious organism is exposed to an antibiotic, an antiviral medicine or an antiparasitic medicine such as chloroquine, some of the organisms will be very sensitive to the agent while others will be partially resistant due to genetic variation. If the course of treatment is stopped for some reason, some of the organisms would have been destroyed by the medication, while the more resistant organisms will have survived and can replicate. If there are repeated interruptions in treatment, only medicine-resistant organisms will survive. Soon the medication that was prescribed for the infection becomes ineffective.

In the case of HIV, the problem is complicated by the very rapid replication of the virus (WHO, 2006). When the viral load is very high, as it is at the beginning of therapy, high adherence to ARVs is required (Carrieri et al., 2003). If an individual misses a few doses at the beginning of ARV treatment, the danger of resistance is much greater than it would be after six months of consistent ARV treatment after which the person is likely to have a low viral load. To prevent the development of medicine resistance, an adherence level of at least 95% is required for the duration of therapy and especially in the first six months (Paterson et al., 2000). This level of adherence is very difficult to achieve.

If an individual develops resistance to ARVs, two problems occur. Firstly, the first line ARVs will no longer work and the individual will start to suffer from multiple OIs. Secondly, the individual may transmit the medicine resistant virus to their contacts and when those individuals go for treatment they will discover that their virus does not respond to the first-line therapy.

Once a person develops resistance to first-line medicines they will need to be changed to second-line ARVs. The decision to change a person from first-line to second-line therapy is a difficult one to make, especially if CD4 and viral load testing is not available. There are not many ARV medications available to treat HIV patients to begin with. The more a patient fails their regimen and needs to move to a second or third line regimen, their ARV options quickly begin to narrow. Therefore, every effort should be made to ensure a high level of adherence (at least 95%) to medicines to keep patients on their first-line ARVs for as many years as possible.

### Barriers to Adherence

Various factors can influence whether or not patients will maintain adherence to their ART regimens. Patients frequently have unexpected events occur in their lives that may pose as barriers to them taking their treatment, such as opportunistic infections, depression, and side effects. These barriers affect all types of people, transcending income, class, educational level, age, and gender. A good multidisciplinary team will make sure that adherence counselling is offered throughout the spectrum of a patient's care in order to prevent patients from failing to adhere not only to their medications, but also their appointment schedules and healthy lifestyles.

### Potential Barriers That Can Affect Patient Adherence

- Patient may not trust the health care worker, or have communication difficulties.
- Literacy barriers.
- Mental illness, especially depression or alcohol abuse.
- Patient may not understand the disease and the treatment.
- Other beliefs of the patient may interfere: Instructions from some traditional healers or religions may make it difficult to accept instructions given by the classical health care worker.
- Unstable living conditions, poor social support (Try to refer to social institutions or NGO to resolve these problems, refer to support group).
- Fear that when taking medications, other people will discover HIV status.
- Unwillingness to set long-term goals (person thinks only about the fact that NOW he has discomfort from the drugs, cannot see the benefit after many years).
- Difficult access to health facility.
- Other immediate life-needs: Needs such as housing and food Barriers associated with the regimen: frequency of dosing, number of pills, food requirements/restrictions, complexity and storage.
- Barriers associated with side-effects: individuals, especially those who did not have very severe symptoms of AIDS and who are now suffering side-effects from the ART, are likely to skip doses.

### Strategies for Addressing Barriers to Adherence

- Though there are many barriers to successful adherence, there are strategies to employ to aid a patient in surmounting these. These necessitate a multidisciplinary approach involving physicians, nurses, Counsellors and pharmacists.
- Be a supportive healthcare provider/counsellor. Follow principles of being good counsellor. Give positive feedback. If a patient is adhering to their medications make sure to congratulate them.
- Link patients with church programs, PLWHA support groups and home-based care program to offer some help. Some church programs provide food donation and PLWHA groups have income-generation activities.
- Use verbal repetition of the adherence message treatment plan and regimen. Use pictorial representation of the message.
- Ensure access at off-hours and weekends for questions or addressing problems. Use treatment plan that best fits into the patient's life: the approach needs to be individualized so that the regimen fits into the patient's daily activities and lifestyle.
- Educate patient regarding goals of therapy, proper dosing, medication interactions, food effects, and side effects. Teach patient about the importance of adherence, how it impacts the treatment of HIV and AIDS and what can happen as a result of poor adherence.

- Establish contact with PLWHA support groups, if patient is willing. Link the patient with a home-based care program and community health workers.
- Provide counselling to patient and family members when he/she is ready to disclose.
- Treat active depression with anti-depressants and provide counselling.
- Carefully evaluate as to whether patient can adhere to therapy. Provide scientific information on the link between alcohol and ARV medicine metabolism on the liver and resulting exacerbation on the liver.
- Use adherence tools. When available reminder tools can help a patient remember to take pills. This may mean helping the patient develop a written schedule, giving the patient a pill box, etc.
- Consider the effects of new diagnoses and events on adherence. Avoid adverse medicine interactions. Simplify regimen regarding: dose frequency, pill burden, pill storage, and food requirement.
- Prepare patient for side effects. If a patient knows what to expect and knows how to deal with expected side effects they are more likely to adhere to prescribed therapy.
- Simplify regimen regarding: dose frequency, pill burden, pill storage, and food requirements. Enlist support network to aid with nutrition.



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## Learning Activity 1: Group Discussion

### **Instructions to Lecturer:**

- Assign one of the following questions to small groups and ask them to discuss in small groups.
- Ask one student to report the discussions to the large group.

### **Instructions to Students:**

- Discuss the following questions in small groups.
- Take notes as you discuss.
- Select one student to report to the large group.

## Questions

1. How do antiretroviral drugs interfere with the lifecycle of HIV?
2. What are the more common ARV medications available in Belize?
3. Why do we have to use the combination of 3 antiretroviral drugs?
4. Imagine that you have a patient in your consultation that comes to you and tells you he is taking 2 antiretroviral drugs he received from a family member abroad. What would you say to this patient? Discuss.
5. What are the benefits of ART?
6. What is the goal of ART?
7. What happens if we do not take the combination of several antiretroviral drugs?



## Learning Activity 2: Guest Speaker

### **Instructions to Lecturer:**

- Invite an individual who is currently on ART to speak to the class about the challenges of adherence to ART. (Refer to CNET+ for possible guest speaker).
- Allow sufficient time for students to ask questions.



## Learning Assessment 1: Quiz

### **Instructions to Lecturer:**

- Use the following questions to “test” students’ knowledge of ART.



4. "My wife - who will be my treatment supporter - does not have time to come to meet you since we have 3 children and one of them is sick".

5. "You are talking about side effects which might really bother me, how can I take drugs that make me feel so bad?"

6. "What if other people can see that I am taking ART?"

7. "What if people see me when I come to get my drug at the clinic?"

8. "I have heard that in the United States, ART is not so complicated. They give 1 pill per week. Why do you want to give me pills to take twice a day?"

# LESSON 9

## ***Nutrition***

### Learning Objectives

- Explain how to determine nutrition needs in children and adults.
- Develop strategies to help patients develop or maintain good nutritional habits.
- Discuss Students' attitudes towards HIV/AIDS at the end of the Course.



### Reference Information

#### **Nutrition**

Nutrition is the science of foods. It is concerned with social, economic, cultural, and psychological implications of food and eating. Nutrition involves the action, interaction, and balance of nutrients in relationship to health and disease and the processes by which food is digested, absorbed, transported, utilized, and excreted in the body (Robinson, 1986). According to Nutrition Guidelines for Namibia (2007), nutrition is the process of consuming food and using it for the body. Food is therefore important for all individuals because it provides the body with energy and the ability to function and grow well.

Nutrition and food are important parts of being healthy. For people living with HIV and AIDS they are especially important. Proper nutrition helps keep the immune system healthy and fight infections. Nutrition can help improve the effectiveness of HIV medications, prevent side effects and help improve the quality of life for people living with HIV and AIDS (FANTA 2004).

#### **Food and HIV/AIDS**

Food can neither cure AIDS nor treat HIV, but it can improve fitness and quality of life for PLWHA. Eating an adequate and balanced diet can help maintain body weight and muscle mass and improve immune function. To understand what constitutes healthy food, it is important to learn about nutrient composition. Food can be divided into four groups, according to its dominant nutrient content: carbohydrates, fats, proteins, and vitamins and minerals.

#### **Foods Rich in Carbohydrates**

- Grains (e.g., corn, wheat, millet, sorghum, rice, barley), potatoes, sweet potatoes, cassava, yam, and legumes (beans and peas) are rich in carbohydrates (starches and sugars). Carbohydrate-rich foods provide the body with energy, and they are usually inexpensive and easy to digest.

#### **Foods Rich in Fats**

- Oils, butter, margarine, fatty meats and poultry, fatty fishes, peanut butter, nuts, and seeds are rich in fats. Like carbohydrates, fats provide the body with energy, but they can be harder to digest than carbohydrates.

### **Foods Rich in Proteins**

- Meat, chicken, liver, fish, ants, caterpillars, dairy products, eggs, beans (soy and others), lentils, nuts, peanuts, peas, and seeds are all rich in proteins. Proteins, which are made up of amino acids, help build and repair the body and play an important role in immune function. Consuming animal proteins provides the range of amino acids the human body needs; individual vegetable proteins do not. Thus, vegetable sources of protein should be varied or combined with other sources. An example of a good combination is legumes and grains.

### **Foods Rich in Vitamins And Minerals**

- Green leafy vegetables (including cabbage, green beans and peas, tomatoes, pumpkin and other squash, carrots, and avocados) and many fruits (pear, mango, orange, guava, banana, mulberry, baobab, peach, pineapple, apple, paw-paw, plum, passion fruit, and lemon) provide the body with vitamins and minerals. There are at least 17 vitamins and 14 minerals, each with a special use in the body; the body cannot work properly if any of these are missing. Each vegetable or fruit is rich only in a few vitamins or minerals, so it is important to eat a variety (varied in colour, shape, and botanical function—leaves, fruits, and roots). Generally, dark green and orange or red vegetables and fruits are best.

### **Balanced Diet**

- Good nutrition requires a balance of proteins, fats, carbohydrates, and vitamins and minerals. No single food contains every nutrient. A healthy meal is made up of at least one food item from each of the four food groups.

### **Food Safety**

It is important to avoid ingesting food-borne bacteria and parasites, especially because PLWHA are 20 times more likely to contract illnesses from these pathogens than are people without HIV. Comprehensive care programs should encourage food safety and, when possible, offer guidelines for action. Following are guidelines for safe food handling (adapted from Food for People with HIV/AIDS).

### **Guidelines for Safe Food Handling**

General:

- Always wash hands with soap and water before and after touching food.
- Keep hot foods hot and cold foods cold.
- Do not eat food after the “best before” date has passed.
- Be especially careful with leftovers; do not eat them unless they were refrigerated immediately after initial serving.
- Store cooked foods for no more than a day, and boil them or heat thoroughly before eating.

Animal products:

- Cook all animal products (e.g., meat, fish, and eggs) at high temperature until well done. Cooking destroys harmful bacteria. Do not eat soft-boiled eggs.
- Use only plastic or Formica cutting boards when cutting raw or cooked animal products. Wooden cutting boards cannot be cleaned adequately.
- Wash utensils and surfaces where animal products have been before handling other foods.
- Put meat, poultry, and fish into plastic bags before placing them in your shopping basket. Put them at the bottom of the basket so they will not drip onto other foods.

Fruits and vegetables:

- Thoroughly wash fruits and vegetables that are to be eaten raw to remove bacteria from the skin. Cut off bruised parts. If washing is not possible, peel skin.

### **Food and Diarrhoea in PLWHA**

PLWHA, especially those who are in advanced stages of HIV/AIDS, often experience diarrhoea. The main causes are infection (viral or bacterial), poor nutrition, and malabsorption (improper absorption of food in the digestive tract). Proper nutrition can play an important role in both minimizing the causes of diarrhoea and treating it. Selecting foods carefully and following the foregoing guidelines for food handling can reduce the risk of infection-related and malabsorption-related diarrhoea significantly. If diarrhoea does occur, practical steps can be taken to prevent dehydration (the biggest danger of severe diarrhoea) and/or malnutrition (the biggest danger of long lasting diarrhoea). Counsellors should provide the following guidelines to clients with HIV/AIDS:

- Drink lots of fluids (non-alcoholic) to prevent dehydration.
- Eat soft, mashed, liquid foods that are easy to eat and swallow, such as porridge and soup.
- Eat small meals five or more times a day.
- Eat food low in fat. Do not add cooking oil and margarine. Boil food rather than fry it. Cut away visible fat in meat and skin on chicken.
- Eat food high in carbohydrates to provide energy (e.g., rice, potatoes, maize, bread)
- Eat soft fruits and vegetables, such as banana, pawpaw, watermelon, pumpkin, squash, and potatoes.
- Avoid milk and milk products.
- Avoid acidic fruits and vegetables, including onions, tomatoes, and pineapple. Do not use “hot” spices like curry or piri-piri.
- Prepare vegetable soups and stews using a refined meal of rice, barley, or potatoes and soft vegetables such as squash, pumpkin, or carrot.
- Be creative in preparing soups and meals, starting with food you like
- Prepare fresh food from fresh ingredients. Do not store prepared food and risk food poisoning.

### **Nutritional Supplements**

When there is insufficient caloric or protein intake (difficulty maintaining or gaining weight), nutritional supplements may be used. These may include blended food products, commercial formulas, intravenous solutions, vitamins, and micronutrients.

Recent studies examining the relationship between micronutrient status and HIV progression suggest that vitamins A, B-complex, C, E, and niacin, and the mineral selenium, may be helpful in replenishing absent nutrients in PLWHA. The role of other micronutrients, such as iron and zinc, and of vitamin A and other antioxidants, appears to be more complex; in fact, high intake of these may be harmful. Although some studies support micronutrient supplementation, there are still no specific guidelines or policies in most settings concerning them. Until such a time, multivitamin and mineral supplements are recommended only if an individual is unable to obtain an adequate balance of nutrients through diet.

## Nutrition Requirements for HIV-Infected Patients

### Energy from Food

Since HIV causes the immune system to become weak and allow more infections, a person with HIV will need more energy or calories from food to stay strong. For an HIV-infected person who is in the early stages of HIV, Stages 1 and 2, their energy needs increase by about 10 percent of normal. This translates into 1 or 2 teaspoons of extra oil to a patient's porridge, eating an extra egg, or having an extra serving of porridge. When an HIV-infected person begins to progress in HIV stages to Stage 3 or 4 with the presence of more opportunistic infections, such as TB and pneumocystis carinii pneumonia, their energy needs will increase by 20-30 percent, especially if they have lost weight or are having diarrhoea.

### Pregnant Women

Adequate nutrition during pregnancy helps to decrease the risk of complications during pregnancy and delivery, prevents or controls anaemia in the mother, and helps to ensure energy storage for lactation. Good maternal nutrition also helps to decrease intrauterine growth retardation and low birth weight in the infant, as well as helps to decrease the risk of HIV transmission to the infant.

In general, pregnant and lactating women need more energy and nutrients because they are feeding themselves as well as their baby—this is true whether the mother is HIV positive or not. A pregnant or lactating woman's needs increase by about 10% than usual. This translates to adding one more serving of staple energy food to a meal, adding 1-2 teaspoons of oil to a meal or one or two eggs to an already balanced meal.

Other nutrition interventions for pregnant women include:

- Provision of iron supplementation.
- Counselling on consumption of iron-rich foods and iodized salt.
- Careful monitoring of maternal weight gain.
- Counselling mother on options of infant feeding (an infant optional feeding. Prepare the client before delivery).

### Children

Adequate nutrition for children is critical for proper growth and development and in order to ensure sufficient nutrients to strengthen their immune systems and fight infection. Children tend to recover more slowly from malnutrition than adults. So it is important to identify and treat malnutrition in children as early as possible to prevent stunted growth, reduced cognitive development and mortality. HIV and opportunistic infections can impact growth in children leading to poor brain development and growth failure. HIV-infected children may also suffer from mal absorption problems due to HIV and other symptoms that can impact nutritional status, e.g., diarrhoea.

## *Nutritional Assessment and Counselling*

### **Nutritional Assessment Helps HIV Positive People Receive Appropriate Treatment, Care and Nutritional Support**

In the US, the Department of Health and Human Services advises that, ideally, all people living with HIV should have access to the services of a registered dietician with expertise in HIV/AIDS. A dietician can assess the patient's diet, lifestyle and nutritional status, and provide counselling and referrals as necessary. Nutritional counselling may include education on various topics, including:

- Healthy eating.
- Achieving or maintaining a healthy body weight.
- Managing lipid abnormalities and lipodystrophy.
- Managing dietary complications related to antiretroviral treatment.
- Managing symptoms that may affect food intake.
- Appropriate use of herbal and/or nutritional supplements.
- The role of exercise.
- Food safety (important for preventing opportunistic infections).

Since children and infants have fewer tissue reserves than adults, relatively small changes in growth, fat, muscle, and fluid stores should receive close attention as a reflection of nutritional status. With improved medical care, malnutrition and wasting are no longer considered inevitable and rarely should be accepted as an irremediable consequence of the disease. Inevitably, early intervention and education are far more effective than are attempts at repletion once nutrition has been compromised.

To make early intervention possible, every child who is infected with HIV, regardless of symptoms, should receive a complete baseline nutritional assessment within 3 months of diagnosis. Follow-up assessment should be conducted every 1 to 6 months, depending on the child's age, identified concerns, and nutritional status.

A baseline assessment should include a review of the child's medical history, present medications, growth history, anthropometric measurements (weight, height, weight per height, body mass index percentile in children 11 to 17 years old; head circumference in children from birth to 3 years; mid-arm circumference and triceps skin fold in children older than 1 year), and laboratory values (serum albumin, prealbumin or transferrin, CD4:CD8 ratio, viral load, haemoglobin, hematocrit, serum glucose, cholesterol, and triglycerides). Fasting glucose and lipid measurements are indicated when these laboratory values are elevated at a random screening.

**Figure 3 WHO Stages and Related Nutrition Issues & Considerations**

**OVERALL IMMUNE SYSTEM FUNCTION**

Stage	Asymptomatic or symptomatic	Nutrition-related clinical characteristics and symptoms	Nutrition considerations
Stage 1	<b>Asymptomatic</b>	<ul style="list-style-type: none"> <li>• Swollen lymph nodes</li> <li>• Generalized fatigue</li> <li>• Flu-like symptoms</li> <li>• Good overall health</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage a balanced diet with a variety of foods (macro- and micro-nutrients) and liquids for hydration</li> <li>• Complete baseline nutrition assessment and provide education on nutritional needs</li> <li>• Provide education on safe food handling and preparation to prevent food-borne illness</li> </ul>
Stage 2	Symptomatic, but still in good overall health	<ul style="list-style-type: none"> <li>• Weight loss (&lt; 10 percent of usual body weight)</li> <li>• Onset of some opportunistic infections (OI), such as upper respiratory tract infections like bacterial sinusitis, herpes zoster, or minor skin irritations.</li> <li>• Mouth or throat sores</li> <li>• Occasional diarrhoea, nausea, and/or vomiting</li> <li>• Loss of appetite, or anorexia</li> </ul>	<ul style="list-style-type: none"> <li>• Continue efforts for stage 1</li> <li>• Complete follow-up nutrition assessment at clinic visits</li> <li>• Address nutrition-related side effects, such as nausea, vomiting, diarrhoea, and mouth sores (see chapter 5 for suggestions)</li> <li>• Prevent weight loss, maintain lean body mass by maintaining calorie and protein intake</li> <li>• Recommend, provide, supervise use or multivitamin/mineral supplements to prevent micronutrient deficiencies and weakening of the immune system</li> <li>• Encourage compliance to antiretroviral therapy for prevention of OI and side effects.</li> </ul>
Stage 3	Symptomatic, with onset of more serious problems	<ul style="list-style-type: none"> <li>• Bedridden for &gt;50 percent of the day during past month, and one or more of the following:</li> <li>• HIV wasting syndrome (weight loss of &gt; 10 percent of usual body weight)</li> <li>• Chronic, unexplained diarrhoea for &gt; 1 month</li> <li>• Unexplained, intermittent fevers for &gt; 1 month</li> <li>• Oral candidiasis (thrush)</li> <li>• Other OI compromising ability to eat properly</li> </ul>	<ul style="list-style-type: none"> <li>• Continue efforts for stages 1 and 2</li> <li>• Increase calorie intake, as well as micro-nutrient intake from fruits and vegetables to help maintain weight, heal infections, and prevent malnutrition</li> <li>• Increase protein intake if infections persist or if untreated</li> <li>• Discuss coping strategies with health worker, community clinic or other support networks</li> </ul>
Stage 4	AIDS; symptomatic, with life-threatening complications	<ul style="list-style-type: none"> <li>• Bedridden for &gt;50 percent of the day during past month, and one or more of the following:</li> <li>• HIV wasting syndrome</li> <li>• Compromised quality of life due to multiple OI</li> </ul>	<ul style="list-style-type: none"> <li>• Attempt to alleviate symptoms and maintain comfort with foods</li> <li>• Encourage plenty of fluids to prevent dehydration: boiled or filtered water, juices, milk or tea.</li> </ul>

Source of information: Committee on World Food Security. The Impact of HIV/AIDS on Food Security. Twenty-seventh Session, Rome, 28 May-1 June 2001. Available from: <http://www.fao.org/DOCREP/MEETING/003/Y0310E.HTM>



## Reference Information

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## Learning Activity 1: Lecture/PowerPoint

### **Instructions to Lecturer:**

- Prepare a PowerPoint with relevant information on nutrition and HIV/AIDS.
- Prepare discussion questions to involve students in the lesson.
- Distribute questions to students and allow time for brief discussions.
- Ask students to read and answer their assigned questions.

### **Questions:**

1. Why is proper nutrition so important for people living with HIV/AIDS?
2. What should a nutritional assessment for a child include?
3. What topics can be included in nutrition counselling?
4. What strategies can be used to help PLWHA adhere to proper nutrition?



## Learning Assessment 1: Poster

### **Instructions to Lecturer:**

- Divide students into groups of four. Provide flip charts and markers and ask them to make poster entitled "the take home message".
- Students should pretend to be nutrition counsellors and prepare the charts for their clients to take home.
- Information on the chart will come from information that has been provided in this chapter.
- Students can be as creative as they like but the information on the chart must be relevant and useful to the client.
- Assign a grade to group posters.
- Make sure you use a rubric.



## Learning Assessment 2: Wrapping up the Course/Student's Attitudes to HIV/AIDS

### ***Instructions to Lecturer:***

- Ask students to complete checklist on attitudes to HIV/AIDS now that the Course is completed.
- Ask students to share their experiences in the Course and reflect on the knowledge and skills and attitudes they have now gained.

# FINAL EXAM

**Worth – 60 points**

**Section 1 – worth 30 points**

**Instructions:**

Read each question that follows and select the best answer. Each correct response is worth 2 points.

1. Health education is the:
  - a. Development of strategies to improve health knowledge, skills and behavior.
  - b. Posters in health clinics to serve as health reminders
  - c. Courses offered in health.
  - d. Method of spreading information on health.
  
2. Health education is important because:
  - a. It improves the health status of individuals, families, communities and the nation
  - b. It leads to increases infertility in women
  - c. It increases premature deaths
  - d. Increased access to healthcare leads to elevated health costs
  
3. The body's immune system is a
  - a. Collection of cells which energizes the body
  - b. Collection of cells and substances that act as the body's defense against foreign substances
  - c. Collection of cells which account for the bodily functions in an individual
  - d. Collection of cells that increases blood flow to the brain
  
4. Which of the following is a method of preventing gonorrhea?
  - a. Using a water-based spermicide
  - b. Having sex with only one partner
  - c. Withdrawing prematurely
  - d. Taking a shower immediately after sex and using an anti-bacterial soap to wash genitals
  
5. What is Acquired Immunodeficiency Syndrome (AIDS)?
  - a. The disease that destroys the nervous system in humans
  - b. The disease that destroys a person's ability to interact with others
  - c. The disease that weakens the body's immune system until it cannot fight infections
  - d. The disease that is transmitted from human to human contact
  
6. Gonorrhea is transmitted through sexual contact with
  - a. Genital organs
  - b. Throat
  - c. Rectum
  - d. All of the above
  - e. None of the above

7. Which of the following is NOT an effect of stigma?
- Deter people from getting tested
  - Encourage people to get tested
  - Secondary stigma
  - Makes people less likely to acknowledge risk
8. Which of the following is an effective way to combat stigma?
- Ignore it
  - Increase knowledge
  - Create rumors
  - Offer more testing
9. Proper infection prevention practices are important for
- Preventing infections in service providers and other staff
  - Preventing surgical site infections, abscesses and pelvic inflammatory disease in clients
  - Protecting the community from infections that originate in health care facilities
  - All of the above
10. Hand washing:
- Decreases client sickness and health
  - Is usually performed correctly, and when appropriate in most health facilities
  - Is not necessary if the hands appear to be clean
  - All of the above
11. Which of the following are considered medical waste?
- Outdated client records
  - Trash from the kitchen
  - Used bandages
  - Unused condoms
  - None of the above
12. HIV can be transmitted by all of the following EXCEPT:
- Insect bites
  - Unprotected vaginal intercourse
  - Breastfeeding
  - Blood transfusion
13. Which statement about surgical attire is correct?
- If shoe covers are not available, staff may walk around the operating room with bare feet
  - Caps and masks worn in the operating room should be sterile
  - Sterile surgical gloves should be considered contaminated if your gloved hands drop below the level of your waist
  - When removing surgical gloves, always remove the first glove completely and then remove the second with your bare hand

14. Circle all that apply. National response to HIV in Belize has adopted universally accepted best practices such as:

- a. A multisectoral approach
- b. Emphasizes sexual and reproductive health
- c. Universal access to antiretroviral therapy
- d. Managed by ministers of government
- e. Elimination of stigma and discrimination

15. Circle all that apply. For people living with HIV, nutrition is especially important because:

- a. Proper nutrition helps keep the immune system healthy and fight infections
- b. Proper nutrition can help improve the effectiveness of HIV medications
- c. Proper nutrition prevents side effects of HIV medications
- d. Proper nutrition helps to get rid of HIV.

## Section 2: - Worth 10 points

### Instructions:

This section is True and False, read each statement and place a T for True or F for False. Each correct response is worth 1 point.

- 16. HIV infection is transmitted through exposure to blood and body fluids infected with HIV ( )
- 17. A person can go to any public health facility for an AIDS test ( )
- 18. The National AIDS Commission implements HIV education sessions ( )
- 19. HIV and AIDS have focused greater attention to the control of sexually transmitted infections ( )
- 20. Syphilis is an incurable sexually transmitted infection caused by a virus ( )
- 21. Stigma is the praise people give an individual on account of a particular characteristic or trait they possess ( )
- 22. Discrimination is unjust treatment of a person because of his real or perceived HIV status ( )
- 23. Medication adherence means taking the right medicines at the right time in the right way ( )
- 24. Risk-reduction is a behavior change strategy ( )
- 25. The purpose of counseling and testing is to help individuals assess their HIV risk behaviors and know their status ( )

### Section 3: - Worth 20 points

**Instructions:**

This section is True and False, read each statement and place a T for True or F for False. Each correct response is worth 1 point.

26. Factors that affect a person's health are mental, physical and social well-being; social, as well as environmental and socio-economic factors. ( )
27. The principles of primary health care are accessibility of health care, use of appropriate technology, individual and community participation, increased health promotion and disease prevention and inter-sectoral cooperation. ( )
28. A young woman comes to the clinic complaining of, an increase in vaginal discharge, pain while urinating, pain during sexual intercourse and bleeding after sexual intercourse may have contracted an STI either chlamydia or gonorrhoea, increasing the risk of HIV infection and infertility. ( )
29. Antiretroviral drugs interfere with the lifecycle of HIV by blocking viral replication and preventing disease progression and immune system damage. ( )
30. Primary health care is the principal vehicle for the delivery of health care at the most local level of a country's health system. ( )

# Key Quiz

## CHAPTER 1

### ***Health And Illness/Primary Health Care***

#### **Short Answer questions:**

**1. Explain fully the concept of health:**

According to WHO, Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Healthy Living is about taking responsibility and making smart health choices for today and for the future. Eating right, getting physically fit, emotional wellness, spiritual wellness and prevention are all apart of creating a healthy lifestyle.

**2. Explain the concept of illness:**

Illness is the subjective experience of loss of health. General malaise, tiredness, sleeplessness, aches and indigestion are examples of symptoms.

**3. Name two social factors that determine health and explain how they impact your health:**

Social class:

Occupation and social economic status are interchangeable. Because social class correlates with income, housing and work environment, researchers have identified a positive correlation between social class and health.

Gender specific diseases affect only a specific gender. For example, gynecological and breast diseases affect women's health but not men's health.

**4. Name two environmental factors that determine health and explain how they impact your health:**

Food hygiene:

Government policy has implications for the food industry. Strict inspection of food premises and food markets ensures maximum food hygiene that affects health. Waste disposal includes the proper treatment and disposal of household, industrial and chemical waste. Incinerators have been abolished and the percentage of recycling is increasing.

**5. Name two socioeconomic factors that affect health and explain how they impact your health:**

Health Education:

People that attain higher educational levels demonstrate higher motivation and are more compliant with treatment regimens. Mothers with less than a high school standard are more likely to give birth to low birth weight infants due to their high incidence of smoking and receiving less attentive antenatal care.

Employment:

Being employed and having a job affect well-being. Financial security enables people to obtain food, to have access to appropriate housing and to be able to participate in social and leisure activities. A sense of self-worth and self-esteem result from having satisfying employment.

**6. Explain the signs of good physical, social, and mental health:**

Physical health (energetic, good posture, normal weight and height for age, bright eyes, good appetite, etc.);  
social (gets along well with others, pleasant manners, helps others, fulfills responsibility towards others);  
mental (control on emotions, sensitive to needs of others, confidence in one's own abilities, freedom from unnecessary tensions, anxieties and worries).

**7. Explain primary health care:**

"The principal vehicle for the delivery of health care at the most local level of a country's health system"

**8. Explain three principles of primary health care:**

- Use of Appropriate Technology
- Individual and Community Participation
- Increased Health Promotion and Disease Prevention
- Inter-sectoral Cooperation

**9. If you are a patient at the KMH, what should you expect as quality health services?**

Services:

- are delivered on time by friendly and respectful staff;
- are safe, produce positive result and that they can afford;
- provide them with adequate information about their condition and treatment;
- provide them with all the drugs they need;
- give privacy

**10. If you are giving a lecture to high school students on health, what important messages would you include in your presentation? (Give at least 3 messages):**

Definition of health, principles of primary health care and factors that can affect our health.

## CHAPTER 3

### **Overview of HIV and AIDS**

#### **Short Answer questions:**

**1. Explain what is the immune system:**

The immune system is a collection of cells and substances that act as the body's defense against foreign substances, known as "antigens." It is composed of T-lymphocyte and B-lymphocyte cells, which defend the body from antigens.

**2. Explain the difference between HIV and AIDS:**

This can be achieved where students define both terms and highlight that HIV is the virus that weakens the immune system whereas AIDS is collection/range of signs and symptoms experienced as a result of the immune system being completely destroyed and thereby creating an opportunity for infections to enter the body as the defense has been compromised; The acronym "AIDS" stands for "acquired immunodeficiency syndrome." AIDS is a condition caused by HIV, which weakens the body's immune system until it can no longer fight off the simple infections that most healthy people's immune system can resist or control (such infections are called "opportunistic infections").

**3. Explain the life cycle of the HIV virus:**

Step 1 – T-cell infection (binding); Step 2 Reverse transcription; Step 3 Integration; Step 4 Replication; Step 5 Assembly; Step 6 Budding and release; Step 7 cell death.

**4. Explain what is a viral load?**

The level of virus in the blood.

**5. Explain one mode of transmission of the HIV virus(3 questions):**

Unprotected sexual intercourse with someone who is HIV positive.

**6. Explain the natural history or progression of HIV infection:**

Primary HIV infection/Acute retroviral syndrome; sero-conversion/window period; asymptomatic chronic infection; symptomatic HIV; Advanced HIV infection/AIDS.

**7. Explain 3 ways of preventing HIV infections:**

Abstain, Be Faithful to one uninfected partner, Correct and consistent condom use.

**8. The risk of becoming infected with HIV as a result of sexual intercourse depends on certain factors among the host. Name at least two of these factors:**

High viral load; primary infection, Advanced age, presence of an STI (if route is sexual) or Presence of blood; presence of semen during contact.

**9. The risk of becoming infected with HIV as a result of sexual intercourse depends on certain factors among the recipient. Name at least two of these factors:**  
Being female; being a young female or Being an older female; presence of an STI.

**10. What are the ways HIV can be transmitted in the health care setting from client to health care worker?**  
Through direct contact with materials that have been contaminated with infected blood during rituals such as circumcision.

**11. What are the ways HIV can be transmitted in the health care setting from healthcare worker to client?**  
Contaminated injecting equipment, exchange and re-use of needles or contaminated syringes, and surgical operations where equipment previously used with an HIV-positive patient has not been sterilized.

**12. What are some myths about transmission that you have heard about in your community, where do they come from, and how can we dispel them?**

Fill in the blanks:

**13. The loss of CD4 cells impairs the immune system and leads to viral replication**

**14. HIV uses the CD4 cells to replicate itself, destroying this cell in the process.**

**15. Transmission of HIV can NOT occur through casual contact**

## CHAPTER 6

### ***Stigma and Discrimination***

#### **TRUE or FALSE**

1. Stigma is praise that people give an individual on account of a particular characteristic or trait that they possess.

True | **False**

2. Discrimination is unjust treatment of a person because of his real or perceived HIV status.

**True** | False

3. Stigma may deter people from getting tested for HIV.

**True** | False

4. Health care workers are discriminated against for working with HIV patients, but at times discriminate against their own HIV patients.

**True** | False

5. Addressing stigma in Belize should be done on a national level only.

True | **False**

6. Any health care worker might be HIV+ or have AIDS.

**True** | False

7. Health care workers can choose to withhold care (refuse care) to an HIV-positive patient without violating the rights of the patient.

**True** | False

8. Stigma affects not only the individual but their families as well.

True | **False**

9. Stigma and discrimination may deter a person from getting tested.

**True** | False

10. One method of addressing stigma and discrimination is through public education.

**True** | False

## MULTIPLE CHOICE

- 1) Which of the following is NOT an effect of stigma?
- a) Deter people from getting tested
  - b) Encourage people to get tested**
  - c) Secondary stigma
  - d) Makes people less likely to acknowledge risk
- 2) Which of the following is an effective way to combat stigma?
- a) Ignore it
  - b) Increase knowledge**
  - c) Create rumours
  - d) Offer more testing
- 4) Which of the following is NOT a stage of incorporating HIV/AIDS into our lives and work?
- a) Avoidance
  - b) Recognition
  - c) Concern for person with HIV/AIDS
  - d) Denial**
- 5) Health care workers are NOT likely to be affected by HIV/AIDS in which of the following ways:
- a) Getting a promotion**
  - b) May be stigmatized
  - c) May be HIV+ or have AIDS
  - d) May experience depression or burnout
- 6) How can health care workers, for example, nurses, care for other health care workers (other nurses)? (circle all that apply).
- a) Help create a safe workplace**
  - b) Deal with work place issues in isolation without reaching out to others to help them
  - c) Advocate for policies to protect nurses
  - d) Establish support groups**

# CHAPTER 7

## *Stigma and Discrimination*

### TRUE or FALSE

1. Boiling is a method of sterilization.  
True | **False**
2. Items such as pickups (lifters, cheatle forceps), suture needles, and surgical scrub brushes should not be left soaking in antiseptic or disinfectant solutions.  
**True** | False
3. Fumigation (disinfectant fogging) with formaldehyde is an effective way to reduce contamination of surfaces such as walls and ceilings in order to prevent infection.  
True | **False**
4. Hands should always be washed after removing gloves.  
**True** | False
5. To reduce contamination, limit the number of people permitted into operating theatres and processing rooms.  
**True** | False
6. If instruments will be sterilized or high-level disinfected, cleaning with detergent and water is not necessary.  
True | **False**
7. Housekeeping staff should wear utility gloves when cleaning operating theatres and procedure rooms.  
**True** | False
8. Proper storage of instruments and other items is as important as careful sterilization or high-level disinfection.  
**True** | False
9. Hepatitis B can be transmitted to a health care worker through splashes of blood or other body fluids onto unbroken skin.  
True | **False**
10. Transmission of blood-borne infections from infected health care workers to their clients is a common problem.  
True | **False**
11. Sterilization is preferred over HLD for items that will come in contact with the bloodstream and tissues under the skin.  
**True** | False
12. Single-use examination gloves are not acceptable for use during pelvic examination.  
True | **False**

13. Most surgical site infections occur from contamination of the wound after the client leaves the health care facility.

True | **False**

14. Housekeeping equipment such as mops, brushes, sponges, and buckets do not need to be decontaminated and cleaned since those items are used with a disinfectant cleaning solution.

True | **False**

15. Burial sites for medical waste should not be located near water sources because of the potential to contaminate the water.

**True** | False

### Multiple Choice

16. Proper infection prevention practices are important for:

- a. Preventing infections in service providers and other staff.
- b. Preventing surgical site infections, abscesses, and pelvic inflammatory disease in clients.
- c. Protecting the community from infections that originate in health care facilities.
- d. All of the above.**

17. Decontaminating instruments and other items in a 0.5% chlorine solution:

- a. Reduces the risk of infections in facility staff by killing HIV and the hepatitis viruses.**
- b. Should be done after cleaning if the items are very bloody.
- c. Allows instruments and other items to be reused immediately.
- d. None of the above.

18. Hand washing:

- a. Decreases client sickness and death.**
- b. Is usually performed correctly, and when appropriate in most health facilities.
- c. Is not necessary if the hands appear to be clean.
- d. All of the above.

19. To reduce the risk of infection and injury:

- a. Recap all hypodermic needles immediately after use by holding the needle still in one hand and carefully placing the cap over the needle with the other hand.
- b. When passing sharps, transfer the sharp from your hand to the other person's hand.
- c. Dispose of sharp objects along with medical waste, such as used bandages/gauze.
- d. None of the above.**

20. Housekeeping staff are at risk of infections:

- a. When cleaning administrative offices and other non-client care areas.
- b. When disposing of medical waste.**
- c. When mixing a disinfectant cleaning solution.
- d. These staff are not at risk of infections if they are not directly involved in client care activities

21. Which of the following are appropriate infection prevention practices?
- a. Changing the needle, but not the syringe, between injections.
  - b. Leaving a hypodermic needle inserted through the stopper of a multidose vial.
  - c. Using a new or processed needle and syringe to draw up medication from multidose vial**
  - d. All of the above.
22. HIV can be transmitted by all of the following EXCEPT:
- a. Insect bites.**
  - b. Unprotected vaginal intercourse.
  - c. Breastfeeding.
  - d. Blood transfusion.
  - e. Use of contaminated syringes.
23. Which of the following will likely cause contamination?
- a. Leaving gauze sponges soaking in antiseptic.
  - b. Pressing the cotton to the lip of the antiseptic container and inverting it.
  - c. Dipping cotton into the main antiseptic container.
  - d. All of the above.**
24. Which statement about surgical attire is correct?
- a. If shoe covers are not available, staff may walk around the operating room with bare feet.
  - b. Caps and masks worn in the operating room should be sterile.
  - c. Sterile surgical gloves should be considered contaminated if your gloved hands drop below the level of your waist.**
  - d. When removing surgical gloves, always remove the first glove completely and then remove the second glove with your bare hand.
25. Which of the following are considered medical waste?
- a. Outdated client records.
  - b. Used bandages.**
  - c. Trash from the hospital kitchen.
  - d. Unused condoms.
  - e. None of the above.

## CHAPTER 8

### ***Adherence to Antiretroviral Therapy***

#### **Questions**

**1. What is HAART?**

HIV treatment with three or more antiretroviral medications is referred to as “Highly Active Antiretroviral Therapy”, or HAART. “Antiretroviral Therapy”, or ART, can be used interchangeably with HAART.

**2. How many different drugs do we need to take in order to have an effective regimen?**

3 or more drugs

**3. At which CD4 count is it generally most appropriate to start patients on ARVs?**

New information from MoH ARVs are introduced at first diagnosis of HIV, no longer dependent on CD4 count.

**4. What are some reasons to consider changing ARV therapy?**

Drug resistance, HIV mutation. IRIS.

**5. What are the 2 main goals of ART?**

- ART blocks viral replication, thus preventing further disease progression and immune system damage.
- The body’s defense (immune system) gets a chance to recover and less opportunistic infections occur. However, antiretroviral therapy does not cure HIV infection.
- The goal of the therapy: reducing the number of virus in the blood as much as possible.

**6. What is a second-line regimen?**

Second-line regimen used after resistance to first-line regimen.

**7. What happens if an infected person does not take the combination of several antiretroviral drugs?**

Combination Drug therapy has a powerful effect to slow down the rate of infection cells, therefore, in absence of the combination the rate infection cells can happen faster, less protection for new cells to be infected and resistance can happen.

**8. What are some “uncomfortable but not dangerous” side effects of ART?**

Nausea, headache, dizziness, muscle pain, lethargy

**9. What are some ‘potentially serious’ side effects of ART?**

Pallor, yellow eyes (hepatitis), severe abdominal pain, burning, numbness

**10. What are some guidelines for managing side-effects?**

Discuss very common possible side effects before the person starts the medication

- Give advice on how to manage these side effects. Use the Patient Treatment Card for the regimen.
- Warn patients about potentially serious side effects and tell them to seek care urgently if they occur.
- Give immediate attention to side effects: access to the clinic or by phone
- Initiate a discussion about side effects, even if the patient does not mention them spontaneously
- Refer the patient to peer-educators.

**11. Define opportunistic infections. Give two examples of OIs.**

Is a disease that takes advantage of a person's immune system when it is weakened by HIV infection or other diseases like cancer.

**12. As a health counsellor, what counselling tips would you give to your client who is HIV infected to help prevent OIs?**

Counsel on what are OIs, causes, importance of treatment adherence, OIs even after ART.

# FINAL EXAM

## Worth – 60 points Section 1 – worth 30 points

### Instructions:

Read each question that follows and select the best answer. Each correct response is worth 2 points.

1. Health education is the:
  - a. Development of strategies to improve health knowledge, skills and behavior.**
  - b. Posters in health clinics to serve as health reminders
  - c. Courses offered in health.
  - d. Method of spreading information on health.
  
2. Health education is important because:
  - a. It improves the health status of individuals, families, communities and the nation**
  - b. It leads to increases infertility in women
  - c. It increases premature deaths
  - d. Increased access to healthcare leads to elevated health costs
  
3. The body's immune system is a
  - a. Collection of cells which energizes the body
  - b. Collection of cells and substances that act as the body's defense against foreign substances**
  - c. Collection of cells which account for the bodily functions in an individual
  - d. Collection of cells that increases blood flow to the brain
  
4. Which of the following is a method of preventing gonorrhea?
  - a. Using a water-based spermicide
  - b. Having sex with only one partner**
  - c. Withdrawing prematurely
  - d. Taking a shower immediately after sex and using an anti-bacterial soap to wash genitals
  
5. What is Acquired Immunodeficiency Syndrome (AIDS)?
  - a. The disease that destroys the nervous system in humans
  - b. The disease that destroys a person's ability to interact with others
  - c. The disease that weakens the body's immune system until it cannot fight infections**
  - d. The disease that is transmitted from human to human contact
  
6. Gonorrhea is transmitted through sexual contact with
  - a. Genital organs
  - b. Throat
  - c. Rectum
  - d. All of the above**
  - e. None of the above

7. Which of the following is NOT an effect of stigma?
- a. Deter people from getting tested
  - b. Encourage people to get tested**
  - c. Secondary stigma
  - d. Makes people less likely to acknowledge risk
8. Which of the following as an effective way to combat stigma?
- a. Ignore it
  - b. Increase knowledge**
  - c. Create rumors
  - d. Offer more testing
9. Proper infection prevention practices are important for
- a. Preventing infections in service providers and other staff
  - b. Preventing surgical site infections, abscesses and pelvic inflammatory disease in clients
  - c. Protecting the community from infections that originate in health care facilities
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- a. Decreases client sickness and health
  - b. Is usually performed correctly, and when appropriate in most health facilities**
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  - b. Trash from the kitchen
  - c. Used bandages**
  - d. Unused condoms
  - e. None of the above
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- a. Insect bites**
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  - c. Breastfeeding
  - d. Blood transfusion
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- a. If shoe covers are not available, staff may walk around the operating room with bare feet
  - b. Caps and masks worn in the operating room should be sterile
  - c. Sterile surgical gloves should be considered contaminated if your gloved hands drop below the level of your waist**
  - d. When removing surgical gloves, always remove the first glove completely and then remove the second with your bare hand

14. **Circle all that apply.** National response to HIV in Belize has adopted universally accepted best practices such as:

- a. A multisectoral approach**
- b. Emphasizes sexual and reproductive health**
- c. Universal access to antiretroviral therapy**
- d. Managed by ministers of government
- e. Elimination of stigma and discrimination**

15. **Circle all that apply.** For people living with HIV, nutrition is especially important because:

- a. Proper nutrition helps keep the immune system healthy and fight infections**
- b. Proper nutrition can help improve the effectiveness of HIV medications**
- c. Proper nutrition prevents side effects of HIV medications**
- d. Proper nutrition helps to get rid of HIV.

## Section 2: - Worth 10 points

### Instructions:

This section is True and False, read each statement and place a T for True or F for False. Each correct response is worth 1 point.

- 16. HIV infection is transmitted through exposure to blood and body fluids infected with HIV (  **T** )
- 17. A person can go to any public health facility for an AIDS test (  **F** )
- 18. The National AIDS Commission implements HIV education sessions (  **F** )
- 19. HIV and AIDS have focused greater attention to the control of sexually transmitted infections (  **T** )
- 20. Syphilis is an incurable sexually transmitted infection caused by a virus (  **F** )
- 21. Stigma is the praise people give an individual on account of a particular characteristic or trait they possess (  **F** )
- 22. Discrimination is unjust treatment of a person because of his real or perceived HIV status (  **T** )
- 23. Medication adherence means taking the right medicines at the right time in the right way (  **T** )
- 24. Risk-reduction is a behavior change strategy (  **T** )
- 25. The purpose of counseling and testing is to help individuals assess their HIV risk behaviors and know their status (  **T** )

### Section 3: - Worth 20 points

**Instructions:**

This section is True and False, read each statement and place a T for True or F for False. Each correct response is worth 1 point.

26. Factors that affect a person's health are mental, physical and social well-being; social, as well as environmental and socio-economic factors. ( T )
27. The principles of primary health care are accessibility of health care, use of appropriate technology, individual and community participation, increased health promotion and disease prevention and inter-sectoral cooperation. ( T )
28. A young woman comes to the clinic complaining of, an increase in vaginal discharge, pain while urinating, pain during sexual intercourse and bleeding after sexual intercourse may have contracted an STI either chlamydia or gonorrhea, increasing the risk of HIV infection and infertility. ( T )
29. Antiretroviral drugs interfere with the lifecycle of HIV by blocking viral replication and preventing disease progression and immune system damage. ( T )
30. Primary health care is the principal vehicle for the delivery of health care at the most local level of a country's health system. ( T )

# Glossary of Terms

**A** **Adherence:** The extent to which a patient takes his/her medication and follows up with medical visits according to the prescribed schedule.

**AIDS (acquired immunodeficiency syndrome):** This is the most severe manifestation of infection with the human immunodeficiency virus (HIV).

**ARV (antiretroviral):** Drug used to fight infection by retroviruses, such as HIV infection.

**ART or ARVT (antiretroviral therapy):** A treatment that uses antiretroviral medicines to suppress viral replication and improve symptoms.

**Asymptomatic:** Without symptoms. In relation to HIV, it is used to describe a person who has a positive reaction to one of several tests for HIV antibodies but who shows no clinical symptoms of the disease.

**C** **CD4 (cluster of designation 4) cells:** A type of T cell involved in protecting against viral, fungal, and protozoan infections. These cells normally orchestrate the immune response, signaling other cells in the immune system to perform their special function.

**CD4 count:** A way of measuring immuno-competency by counting the lymphocytes that carry the CD4 molecule. Normal is well over 1000/ml of blood. A count lower than 200 ml is an indicator of AIDS.

**D** **Discrimination:** This follows stigma and involves the unfair and unjust treatment of an individual based on his or her real or perceived HIV status. Discrimination occurs when a distinction is made against a person that results in being treated unfairly and unjustly on the basis of belonging, or being perceived to belong, to a particular group.

# H

**HAART:** Highly active antiretroviral therapy. The usual HAART regimen combines three or more different drugs.

**Health:** This is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

**Health behavior:** Any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting, or maintaining health, whether or not such behavior is objectively effective toward that end.

**Health education:** This is the development of individual, group, institutional, community, and systemic strategies to improve health knowledge, attitudes, skills, and behavior. The purpose of health education is to positively influence the health behavior of individuals and communities as well as the living and working conditions that influence their health.

**HIV (human immunodeficiency virus):** The virus that weakens the immune system, ultimately leading to AIDS.

# I

**Illness:** This is the subjective experience of loss of health. General malaise, tiredness, sleeplessness, aches, and indigestion are examples of illness.

**Immunodeficiency:** The inability of the immune system to resist or fight off infections or tumors when certain parts of the immune system no longer function.

# O

**Opportunistic infections (OIs):** Illnesses caused by various organisms, some of which usually do not cause disease in persons with healthy immune systems.

**P** **PEP (post-exposure prophylaxis):** The use of ARV therapy just after a possible exposure to HIV has occurred.

**Prevalence:** The number of cases at any time during the study period in relation to the population at risk.

**Primary health care:** The principal vehicle for the delivery of health care at the most local level of a country's health system. It is essential health care made accessible at a cost the country and community can afford with methods that are practical, scientifically sound, and socially acceptable.

**R** **Rapid Test:** An HIV blood, saliva, urine, or vaginal secretions test that yields same-day results.

**Retrovirus:** A type of virus that, when not infecting a cell, stores its genetic information on a single-stranded RNA molecule instead of the more usual double-stranded DNA. HIV is an example of a retrovirus.

**Reverse transcriptase:** This enzyme of HIV (and other retroviruses) converts the single-stranded viral RNA into DNA, the form in which the cell carries its genes.

**Resistance:** The ability of an organism, such as HIV, to overcome the inhibitory effect of a drug, such as AZT or a protease inhibitor.

**S** **Side effects:** Medical problems that result from ARV drug toxicities.

**Stigma related to HIV and AIDS:** This refers to a process of devaluation of people either living with or associated with HIV and AIDS. Stigma can be used to marginalize, exclude, and exercise power over individuals who show certain characteristics.

**STIs (sexually transmitted infections) or STDs (sexually transmitted diseases):** STIs/STDs are spread by the transfer of organisms from person to person during sexual contact.

**Surveillance:** The ongoing and systematic collection, analysis, and interpretation of data about a disease or health condition.

**Symptomatic:** Having evident signs of disease—weight loss, fever, diarrhea, etc.—from DNA.

## W

**WHO Staging System:** A classification of the clinical stages of HIV disease developed by the World Health Organization (WHO).

**Window period:** Time from infection with HIV until detectable sero conversion.

# List of Organizations Involved in the National Response To HIV/AIDS in Belize

Alliance Against AIDS  
Belize Family Life Association  
Belize Red Cross  
Claret Care  
Cornerstone Foundation  
District Offices of the National AIDS Commission  
CNET+  
Hand in Hand Ministries  
National AIDS Commission  
National AIDS Programme (Ministry of Education)  
Pan American Health Organization (PAHO)  
PASMO  
REDCA+  
United Nations Children Efficiency Fund (UNICEF)  
UNDP  
UNIBAM  
USAID| Central America Capacity Project  
Women's Issues Network (WIN)  
Women in Action (POWA)  
Youth Enhancement Services (YES)  
Young Women's Christian Association (YWCA)  
Youth for the Future (YFF)

# Useful Links

1. [http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/progressreports/2012countriesce\\_BZ\\_Narrative\\_Report%5B1%5D.pdf](http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/progressreports/2012countriesce_BZ_Narrative_Report%5B1%5D.pdf)
2. <http://health.gov.bz/www/>
3. <http://www.nacbelize.org/>
4. [http://nacbelize.org/library/search\\_result](http://nacbelize.org/library/search_result)
5. <http://andwhatnow.info/>
6. <http://www.bflasrh.org/>
7. <http://www.hhministries.com/>
8. <http://www.humandevlopment.gov.bz/>
9. <http://www.psi.org/>
10. <http://www.redca.org/>
11. <http://www.pancap.org/en/>
12. <http://www.aidsmap.com/>
13. <http://www.thebody.com/>
14. <http://www.trainx.com/catin/index.htm>
15. <http://www.cdc.gov/globalaids/>
16. <http://www.unaids.org/en/>
17. <http://www.ifrc.org/en/what-we-do/health/diseases/hiv-aids/>
18. <http://www.biomedcentral.com/1471-2458/10/538>
19. <http://www.mayo.edu/mshs/careers/respiratory-care>
20. <http://www.cdc.gov/hiv/topics/basic/www.avert.org>
21. <http://aids.gov/hiv-aids-basics/>
22. [http://www.who.int/topics/hiv\\_aids/en/](http://www.who.int/topics/hiv_aids/en/)
23. <http://www.engenderhealth.org/pubs/hiv-aids-sti/index.php>

