

A large, textured red ribbon is tied in a loop, symbolizing HIV/AIDS awareness. It is positioned on the left side of the page, with its ends extending downwards and outwards.

**HEM 642**

**GLOBAL INITIATIVES ON  
HIV/AIDS**

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## MODULE 1

Unit 1	HIV/AIDS Diagnosis and Clinical Symptoms I
Unit 2	HIV/AIDS Diagnosis and Clinical Symptoms II
Unit 3	HIV/AIDS Diagnosis and Clinical Symptoms III
Unit 4	Modes / Routes of HIV Transmission
Unit 5	Demographic Incidence and Prevalence Of

## UNIT 1 HIV/AIDS DIAGNOSIS AND CLINICAL SYMPTOMS I

### CONTENTS

1.0	Introduction
2.0	Objectives
3.0	Main Contents
3.1	What is HIV and AIDS?
3.2	The Biology of HIV
3.3	Pathogenesis of HIV
3.4	The Impact of HIV/AIDS on the
body	3.5 Risk factors and the at risk group
	3.5.1 Risk factors
	3.5.2 The at risk
group	
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Readings

### 1.0 INTRODUCTION

This is the first unit of this course and will, among other things, deal with the description and explanation of important terms and acronyms so as to establish a good foundation for the successful take off of the course. This will enable you have a good grasp of the basic issue of the course.

### 2.0 OBJECTIVES

It is hoped that after you might have completed this unit, you should be able to achieve the following objectives:

- Understand what HIV/AIDS stand for and be able to differentiate between them
- Know the biology and pathogenesis of HIV/AIDS and the impact on the body
- Know the risk factors of HIV/AIDS and the at risk group
- Appreciate the at risk group and the clinical symptoms

### **3.0 MAIN CONTENT**

#### **3.1 What are HIV and AIDS?**

HIV is a very small germ which cannot be seen with the naked eyes. It affects the immune system, making the body weak. The infected person may feel and look good even after infection. It is HIV that develops to AIDS. This is simply saying that AIDS is an advanced form of HIV. HIV is Human Immunodeficiency Virus which causes AIDS – Acquired Immune Deficiency Syndrome, a condition that breaks down a person's natural defenses against illness. That is, it breaks down the body's immune system by reducing the body's ability to fight other diseases. People with HIV/AIDS get sick while most people with AIDS die from diseases that their bodies cannot fight.

#### **3.2 The Biology of HIV**

HIV is retroviral in nature and similar to those in Monkeys and Chimpanzee. HIV is however human specific and can be found in body fluid such as saliva, sputum, blood, tears. Sweat, amniotic fluid, Lumba fluid and breast milk but not in urine and feaces.

At a workshop on AIDS in 1983 at the centre for Disease Control in Atlanta, USA, Dr. R.C Gallo suggested that AIDS was probably caused by a lymphotropic retrovirus. This virus was presumably related to HTLV- I or HTLV – II, two human T- lymphotropic retroviruses linked to two serious human disease, adult T – Cell Leukemia and hairy cell Leukemia. It was thought it could be a virus as filtered blood products (like those used in the treatment of hemophiliac (patients) were shown to transmit the disease. The target cell of such a virus could be the helper/ inducer lymphocyte subset as their number was markedly decreased in AIDS patients



## SELF ASSESSMENT EXERCISE 1

What Is HIV?

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*Hint: Please see 3.1*

### 3.3 Pathogenesis of HIV

This has to do with the process whereby HIV causes disease in the infected person. A healthy individual can be infected with HIV from an infected person either by blood, sexual or perinatal transmission. The virus might enter as a free particle or as a cell-bound one. After a person becomes infected with the virus, it reproduces itself and infects other cells. Some time elapses after exposure to the virus before the number of infected cells is sufficient to be detected within three to eight weeks after infection, the infected individual develops an illness like influenza or mononucleosis that might last for a week or so. From then on the infected person remains asymptomatic for weeks, months or even years. During this period the virus replicates and can be detected, but more time is required for the person to respond immunologically with the formation of antibodies.

## SELF ASSESSMENT EXERCISE 2

What Is AIDS?

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*Hint: see 3.1*

### 3.4 The Impact of HIV/AIDS on the Body

- Your body is protected by White Blood Cells (WBC)
- White Blood Cells fight disease for your body
- Diseases make you sick but WBC usually overpower infection in the body to free you from sicknesses
- AIDS is a very strong disease whose virus attacks WBC during which time the person affected appears healthy

- After a long struggle, HIV makes WBC weak. The body is not protected thus the signs and symptoms of AIDS start to show or manifest
- Other disease attack the person, develops AIDS and eventually dies.

### **3.5 Risk Factors and the at Risk Group**

#### **3.5.1 Risk Factors**

1. Unprotected sex
2. Any sex act that make you bleed
3. Semen or blood taken into the mouth during oral-genital sex
4. Drug addiction (injectable)
5. Homosexuality
6. Tattooing and ear piercing
7. Acupuncture
8. Use of unsterile instruments
9. Sharing razor blades for cutting nails and sharing or other uses.
10. Blood letting ceremonies e.g. tattooing
11. Circumcision, tribal marks/ scarifications
12. Blood transfusion or any surgical and dental procedure
13. Sharing unstrile needles
14. Sharing of tooth brush and chewing stick
15. Wife sharing, polygyny, polyandry etc

#### **3.5.2 At Risk Group**

- Commercial Sex Worker (CSW)
- People with Sexually Transmitted Diseases (STD)
- Students because of high promiscuity
- Itinerary travelers
- Armed forces personnel
- I.V (Intravenous) drug users and drug abusers
- Traditional surgical practice
- Health Workers as hazard of work particularly needle stick injuries.
- Long distant ( Truck) drivers
- Refugees due to vulnerability to rape
- International jobbers
- Migrants
- Military and Police officer as a result of incessant transfer without their families around.

### **SELF ASSESSMENT EXERCISES 3**

Which risk factors of HIV/AIDS can you remember?

- |      |       |
|------|-------|
| i.   | vi.   |
| ii.  | vii.  |
| iii. | viii. |
| iv.  | xi.   |
| v.   | x.    |

### **4.0 CONCLUSION**

HIV/AIDS is deadly and the impact is also devastating as it puts untold hardship on the individuals, affects the family and the society at large and it has not been possible to find its cure due to the ability of the virus to constantly change its' form and shape. The main risk group should be very cautious because once one is infected it becomes a life long issue as there is no cure yet.

### **5.0 SUMMARY**

- The biology of HIV has made it very difficult to produce its vaccine
- Its pathogenesis is deadly as it ravages the health and whole life of its victim
- The impact of HIV on the body is also enormous
- The risk factors are many but the main issue is about sex acts.
- The main at risk group are the Commercial Sex Workers

### **6.0 TUTOR MARKED ASSIGNMENT**

What are HIV and AIDS?

### **7.0 REFERENCES/FURTHER READINGS**

Adeyi, O. Kanki, P.J, Odutolu .O and Idoko, J.A (2006) AIDS in Nigeria: A nation on the threshold. Harvard: University Press:

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Najera, R and Herrera, M (1988) Biology of the virus. In World Health Organization Geneva: WHO



## **UNIT 2      HIV/AIDS DIAGNOSIS AND CLINICAL SYMPTOMS II**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Diagnosis
  - 3.2 The Clinical Symptoms
  - 3.3 The phases of AIDS Development
    - 3.3.1 Acute Phase
    - 3.3.2 Latency Phase
    - 3.3.3 Persistent (generalize)
    - 3.3.4 AIDS - Related Complex
    - 3.3.5 AIDS
- Lymphadenopathy
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Readings

### **1.0 INTRODUCTION**

This unit is the second part on HIV/AIDS diagnosis and clinical symptoms but unlike the first part that deals with explanation on acronyms and abbreviation and other introductory issue, this part discusses issue of identifying HIV and AIDS as well as differentiating between them. It also discusses the five different phases or stages that HIV passes through as it progresses to full blown AIDS. There are also self- assessment question in – between the write – up to help you assess your understanding

### **2.0 OBJECTIVES**

At the end of this unit, you should understand the following:

- HIV/AIDS diagnosis
- The simple sign and symptoms to recognize HIV infection and full blown AIDS
- The difference between HIV and AIDS
- Appreciation of advanced AIDS symptoms.

### **3.0 MAIN CONTENT**

### 3.1 Diagnosis

This simply means the identification of HIV/AIDS after observing its signs and symptoms. It is worthwhile to be aware of the fact that people with HIV infection may remain asymptomatic (show no symptoms) for quite a long time by feeling and looking healthy you can – not, therefore tell who has the virus by mere looking at people.

Therefore from the fore going it is clear that you can not know who has HIV except an HIV test is carried out through the following process:

- a small amount of blood is taken from patient
- the result is given only to the person concerned
- there will be counseling about the result whether positive or negative

HIV is generally isolated from the peripheral blood of infected individuals. It has also been frequently isolated from semen, lymph nodes, and the brain but very seldom from saliva, sweat, bronchial exudates and so forth. Positive isolates have been reported in 20% of the symptom less seropositive individuals in 50% of AIDS cases and in 80% of the patients with AIDS Related Complex (ARC) syndrome.

### 3.2 The Clinical Symptoms

The infections that often develop because HIV has weakened the system are known as opportunistic infections which include respiratory infections such as tuberculosis: some form of unusual pneumonia or meningitis. Some people may also develop cancers e. g. Karposi sarcoma, a cancer that often causes red skin lesions.

When a person becomes infected with HIV, some develop germs fighters called antibodies to fight off and destroy the virus that have invaded the body. It takes a little while for the body to produce measurable amount of antibodies after infection. For HIV this period is usually 2 – 12 weeks, rarely may it be longer and it is called the “Window period” This means that an HIV antibody test if taken during the window period will be negative, but the person is already HIV infected and can transmit it to others.

The clinical symptom of HIV infections appears to be increasingly complex. It includes manifestations due to opportunistic diseases, as well as illness directly caused by HIV itself. We can subdivide HIV infection to 5

different stages, which are not necessarily present in all patients and may not occur consecutively. These include acute phase; latency phase; persistent generalized lymphadenopathy; AIDS – related complex; and AIDS.

### **3.3 The Phases of AIDS Development**

#### **3.3.1 The Acute Phase**

May occur as early as one week after infection and usually precedes the appearance of antibodies in the blood (sero- conversion). The latter occurs usually between 6 and 12 week after infection, but may take as long as 8 months. The clinical manifestation includes fever, lymphadenopathy, night sweating, headache and cough. One – third to half of the people who develop antibodies to the virus report at least one symptom, and there have been cases of acute encephalopathy.

#### **3.3.2 The Latency Phase**

This phase is characterized by an absence of illness and symptoms the patient looks' and feels good as if nothing is wrong whereas he or she is already infected with HIV and this period in the transmission of the virus is known as 'window period" this is the time or period when the patient is asymptomatic as he shows no symptoms of HIV

#### **SELF ASSESSMENT EXERCISE 1**

Two Phases of HIV infection are (1) ----- (2) -----

*Hint: Please See 3.3*

#### **3.3.3 Persistent Generalized Lymphadenopathy**

This is the situation in which a patient with HIV infection has lymph nodes larger than one centimeter in diameter in two or more sites other than the groin, for periods of at least three months' duration and in the absence of any current condition. About one-third of these patients show no symptoms.

#### **3.3.4 AIDS- Related Complex (ARC)**

Patients with ARC have similar symptoms, sign and immunological defects to those of AIDS Patients but they are less severe. These patients do not show any opportunistic infections or malignancies, but they may have

weight loss, malaise, fatigue and lethargy, anorexia, abdominal, discomfort, diarrhoea with no specific cause, fever, night sweating, headache, itching amenorrhea, lymphadenopathy and enlarged membranes are often the first signs that lead to a diagnosis of AIDS or ARC

### 3.3.5 AIDS

This is the most severe stage of the chemical spectrum of HIV infection. It is characterized by the presence of opportunistic infections and tumours (e.g. Kaposi's sarcoma) as a result of profound cellular immunodeficiency. The type of infection depends largely on the past and present exposure of the patients to microbial agents, and this may explain the differences in frequency of certain opportunistic infections between African and American/European patients with AIDS. Thus, pneumocystis carinii pneumonia is by far the commonest opportunistic infection in Americans and Europeans, but is less frequently found in African patients. In contrast, the gastro-intestinal system is a major site of infection in Africans with HIV disease, possibly because of a high exposure to enteric microbial agents. The same signs and symptoms as described for ARC patients occur, but are much more pronounced.

“AIDS dementia” occurs in approximately one-third of AIDS patients. The onset is usually insidious, with tremor and slowness, progressing later to severe dementia, mutism, incontinence and paraplegia

### SELF ASSESSMENT EXERCISE 2

Mention two clinical symptoms of HIV/ AIDS

- i.
- ii.

*Hint: please see 3.2*

## 4.0 CONCLUSION

HIV infection leads to AIDS while the patient may look good and feel good during the progressive development of the virus (HIV) into full-blown AIDS.

Commonly after the acute phase in which patient experiences the usual symptoms such as fever, headache, body pains, respiratory problem, metabolic disorder, night sweating, cough etc, he goes to latency phase in which most of the initial problems seem to have totally disappeared and



unless he is on the Antiretroviral drugs, he will progress rapidly to full blown AIDS and death might come sooner than later

## **5.0 SUMMARY**

- Diagnosis is the identification of HIV/AIDS after observing its signs and symptoms.
- The clinical symptoms of HIV infections appears to be increasingly complex and include manifestation due to opportunistic infection
- The five phase of HIV progression to AIDS include (1) Acute (2) Latency (3) Persistent generalized lymphadenopathy (4) AIDS Related Complex (ARC) (5) AIDS

## **6.0 TUTOR MARKED ASSIGNMENT**

Mention and discuss all 5 stages or phases of HIV infection

## **7.0 REFERENCES/FURTHER READINGS**

Adeniyi, O.; Kanki, P.J; Odutolu.O and Idoko, J.A (2006) AIDS IN NIGERIA: A Nation on the threshold. U.S.A :Harvard University Press

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World Health Organization (1988) AIDS: a shadow in our world. Geneva WHO

## UNIT 3 HIV/AIDS DIAGNOSIS AND CLINICAL SYMPTOMS ILL

### CONTENTS

- 1.0 Introduction
- 2.0 Objective
- 3.0 Main Content
  - 3.1 Skin condition associated
    - 3.1.1 Pruritic maculopapular rash (Prurigo)
    - 3.1.2 Bacterial infections
    - 3.1.3 Fungal infections
    - 3.1.4 Viral infections
      - 3.1.4.1 Herpes simplex
      - 3.1.4.2 Herpes zoster (shingles)
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Readings

### 1.0 INTRODUCTION

Skin conditions are of great importance in the diagnosis of HIV/AIDS. Skin is often the first barrier the human body has against disease causing organisms. Skin is also an external indicator of disease, which can be used to predict progression of immunodeficiency in a patient with HIV infection. The WHO clinical diagnosis of HIV includes four skin conditions: Kaposi sarcoma, Herpes zoster, Herpes simplex and Pruritic (itching) maculopapular rash. These have been reported to have a predictive value for HIV seropositivity ranging from 71 percent to 98 percent. However, it is important to remember that many skin conditions suffered by people with HIV infection are also seen in non- infected people.

In HIV infected patients and non – infected patients, skin conditions may arise from single or multiple causes.

### SELF ASSESSMENT EXERCISE 1

Mention 2 conditions common to people with HIV \AIDS?

- i.
- ii.

***Hint: See 1.0***

## 2.0 OBJECTIVES

The ambitious objectives of this unit are just which you are expected to have achieved at the end of the unit.

- To know vividly the skin conditions most indicative of HIV diseases, that is AIDS
- To appreciate the impact of these skin condition on the infected person
- To also familiarize with the different types of treatments available for each skin condition

## 3.0 MAIN CONTENT

### 3.1 Skin Conditions Common to People with HIV\Infection or AIDS

The skin conditions most indicative of HIV diseases are described below with some treatment options.

#### 3.1.1 Puritic Maculopapular (Prurigo)

A skin lesion, which is any abnormal change in the skin tissue, is widespread and very itchy. The rash is often the first outward sign of HIV infection, and occurs as early as 2 years before the other signs of AIDS develop. The small flat spots (macules) develop into papules or small blisters. Scratching may lead to secondary bacterial infection. Similar rashes may occur with syphilis (although syphilis is classically non itchy), drug reaction and scabies

**Treatment:** -There is no specific treatment for Prurigo. The patient can be re-assured that the itching lasts only a short time but a permanent hyperpigmented ‘rash’ may remain During the itchy phase soothing preparations such as calamine lotion or E45 emollient cream can be applied occasionally, anti-histamine may be necessary e.g chlorpheniramine 10mg hourly.

#### 3.1.2 Bacteria Infection

Sometimes skin lesions become secondarily infected with bacteria; usually staphylococcus aureus and streptococcus species. This may lead to

inflammation with redness, swelling and pain and sometimes there may be frank pus visible. HIV patients are more prone to develop folliculitis with inflammation of the hair follicles.

**Treatment:** superficial infection may clear with adequate cleaning with soap and water. Persistent folliculitis or carbuncles should be treated with flucloxacillin 250mg QDS for 7 days (clindamycin 150mg QDS if penicillin allergic) carbuncles may require incision and drainage if there is spreading cellulites (redness and swelling of the surrounding skin) the IV or IM antibiotics should not be used if possible. Topical antibiotics should not be used.

### 3.1.3 Fungal Infection

In HIV/AIDS fungal infections are more severe and often develop secondary infections. A (seborrhoeic dermatitis). Fungal diseases more typically present as ring worms of the scalp. Fungal infection should be suspected when a skin lesion is isolated, asymmetrical, itchy, dry and scaling fungal diseases are most often caused by the species *Epidermophyton* and *Trichophyton*.

Candidiasis (thrush) is caused by yeasts, mainly *Candida albicans* and a small percentage by *Tolurosis glabrata*

Many HIV infected patients suffer from greasy lesions affecting the scalp in a dandruff like manner with grey rings of hair loss (*Tinea Capitis*). Similar isolated rings may be seen as patches on the body (*Tinea Corporis*), but if they present in widespread, rash-like manner they are known as *Tinea Vesicolor*. Fungal disease in the pubic hair may form hitchy, scaly lesions, similar to those caused by lice and scabies.

The groin, armpits and skin folds (as well as the mouth) are more prone to candida infections which may even ulcerate. The nails and skin between the toes (athlete's foot) are also common sites of fungal infection.

**Treatment:** Whitfield's ointment (compound benzoate ointment) is effective for ringworm but needs repeated application and may not be cosmetically acceptable to some patients. Specific anti fungal creams such as miconazole or clotrimazole are more effective, they should be applied twice daily to affected areas for at least 2 weeks (Ideally 4 weeks) powder forms also exist for treating fungal infections between toes.

Systemic antifungal tablets such as Ketoconazole, fluconazole and itraconazole are also effective but are no better than topical treatments. In addition to being costly, the drugs are more likely to have side effects such as nausea and vomiting. Ketoconazole has been known to cause Liver damage but very rarely. When there is significant inflammation in association with a fungal skin infection. It is sometimes useful to use an anti fungal preparation combined with a mild steroid e.g. Darktacort cream.

### **3.1.4 Viral Infection**

In HIV/AIDS, viral infection are often more widespread, aggressive, recurrent or chronic than in non – infected patients

#### **3.1.4.1 Herpes Simplex**

Infection by this virus commonly presents as a cold sore on the lips, or as a genital sore, but may present at other sites. In HIV disease, patients typically complain of repeated painful sores at the same site, preceded by irritation and vesicles (Fluid Filled Patches). These ulcers become deep and get infected. In Africa, 4- 6 percent of HIV patients have been reported to have chronic ulcerative Herpes simplex.

**Treatment:** Simple cold sores will usually heal by themselves. Genital herpes may be soothed by salt in a bath of warm water (one tablespoon of salt in a bath of warm water ) Gentian violet lotion may help to reduce secondary infection if applied twice daily. If available, acyclovir tablets, 200mg five times daily for five days , help acute attacks settle quickly. For patients troubled by chronic infection, one acyclovir tablet daily helps to suppress symptoms

#### **3.1.4.2 Herpes Zoster (Shingles)**

This is caused by Varicella Zoster virus. It is said to follow reduced immunity in a dorsal nerve root. This is believed to activate a latent infection. HIV has been associated with an increased incidence of Herpes Zoster. Reports from Africa suggest that it occurs in 6- 23 percent of AIDS cases.

In HIV, it may cover one or more sensory nerve dermatomes. Early symptoms consist of 2- 4 days of intense pain and burning sensation in a particular area. The area erupts to form vesicles which ulcerate to form deep ulcers. These heal with disfiguring scars

**Treatment:** Most attacks of herpes zoster heal by themselves. It is often necessary to give analgesic like aspirin or paracetamol to control the pain. Gentian violet paint may help the eye, acyclovir tablets (300mg five times daily) should be given if available. Acyclovir drops or eye ointment should be given as well. The high cost of Acyclovir means that its use to treat shingles on other parts of the body is rarely justified.

## **SELF ASSESSMENT EXERCISE 2**

Mention 2 Skin conditions common to HIV infection or AIDS.

### **4.0 CONCLUSION**

The Western world initially claimed that HIV\AIDS originated from Haiti then later Africa because of the similarity of the virus found in African green monkeys

The Soviets believe it is from America as a product of a biological warfare research .Some other people argue that it is not a new virus but has always been present with us only that we are now, understanding it better. Others link it to the moral and sexual decadence prevalent in the west e.g. homosexuality, as AIDS was first identified among gay men in the USA in 1981. Others claim that HIV is an act of God's punishment against homosexuality and sodomy. No matter its source or origin of infection, the main issue now is that HIV\AIDS are real and with us as a big problem.

### **5.0 SUMMARY**

- a. HIV is a deadly virus and AIDS that results from its infection is equally devastating.
- b. HIV test through blood sample is the basic diagnosis to confirm infection

The main risk factor is unprotected sex as well as contact with body fluids particularly blood, semen, vaginal discharge and others.

The major at risk groups are the commercial sex workers, drug addicts, homosexuals and contact with unsterile surgical equipment.

### **6.0 TUTOR MARKED ASSIGNMENT**

1. List and discuss the skin conditions common to people with HIV infection

## **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 4     MODES / ROUTES OF HIV TRANSMISSION**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Modes / routes of HIV transmission
    - 3.1.1 Sexual transmission
    - 3.1.2 Extramarital Sex
    - 3.1.3 Prostitution
    - 3.1.4 Polygamy
  - 3.2 High divorce and re-marriage rates
  - 3.3 Widow inheritance and wife sharing
  - 3.4 High Bride price
  - 3.5 Woman as property
  - 3.6 Parental transmission
  - 3.7 Materno -foetal transmission
  - 3.8 Other high risk and culture related practices
  - 3.9 How you can not get HIV/AIDS
    - 3.9.1 Factors fueling AIDS spread in Africa
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Mark Assignment
- 7.0 References/Further Readings

### **1.0 INTRODUCTION**

The United Nations has called AIDS the most devastating disease mankind has ever faced. AIDS has actually ravaged the whole world, becoming one of the deadliest diseases around, a real catastrophe. And according to the Magazine for the victorious life April 2006 edition, it is the biggest plague



in human history which affects over 40 million people out of which 70% are in the sub-Saharan African.

To be able to fight the scourge, there is need to study its modes of transmission, how it can be contracted and how one can not acquire it as well as factors that enhance its spread including cultural practices. All these are issues raised in this unit.

## **2.0 OBJECTIVES**

The various objectives intended to achieve at the end of this unit include the following among others:

- You should be familiar with the different routes / modes of transmission
- Understand that there are high risk behaviours and cultural practices that can help the spread of HIV/AIDS
- Appreciate those factors that can fuel AIDS spread
- Be aware of ways whereby AIDS can not be contracted.

## **3.0 MAIN CONTENT**

### **3.1 Modes / Routes of HIV Transmission**

This section of the course deals with how HIV/AIDS is transmitted from an infected person to another. This is the same as saying how HIV is contracted or spread.

The first report of AIDS in Nigeria was in 1986, since this, several others have been infected running into millions and has since become a world-wide epidemic (Pandemic) disease of which its reality as a deadly disease is currently dawning on the society.

#### **3.1.1 Sexual Transmission**

HIV transmission through sexual contact accounts for about 80% of HIV/AIDS cases in Nigeria, with a low transmission efficiency rates (0.1% for male and 0.3% for female). While in Europe and USA, homosexual transmission is the major mode of HIV spread.

The more sex partner's one has, the higher the transmission rate. The high percentage of HIV/AIDS direct reflection of the cultural and traditional values placed on sex. Cultural practices and values which thus among the spread of HIV/ AIDS include the followings:

#### **3.1.2 Extra- Marital Sex**

In many tribes and ethnic groups in Nigeria, People indulge in extra – marital sex especially men but this is frowned at when women initiate it. Though the two major religions- Christianity and Islam forbid adultery and

fornication, and Nigeria is acclaimed to be one of the most religious countries in the world, still there is high prevalence of extra – marital sex in Nigeria.

### **3.1.3 Prostitution**

This is said to be about the oldest profession in any society. In some societies, it is frowned at while in some, it is quietly blamed. Studies have shown that the highest prevalence of HIV is among commercial sex workers (CSW) commonly called prostitutes. Engagement in casual sex especially by long- distance vehicle drivers, youth, divorcees, widowers, Military, etc has also been implicated in the spread of HIV/AIDS

### **3.1.4 Polygamy/Polygyny**

Strict polygamy per se might not directly spread HIV /AIDS. However, most polygamous men have wives or mistress outside. Generally, polygamy denotes having multiple sex partners, implying that there is greater risk of transmission of HIV and other sexually transmitted diseases (STD). In certain case, the polygamous man is unable to satisfy the economic or even sexual needs of his wives, thus often encouraging some of the wives to look elsewhere including extra-marital activities which make them vulnerable to STDs including HIV/AIDS.

### **3.1.2 High Divorce and Re-marriage Rates**

Divorce rate is very high in some cultures Re-marriage with divorces is also not unusual as it is quite common in certain tribes which implies involvement in multiple sex partners with its attendant problem of being exposed to possible sexual infections.

### **3.3 Widow Inheritance and Wives Sharing**

Although this cultural practice is fast dying out, it nevertheless still exists in some cultures no double sharing of wives and inheritance of widows will surely lead to sharing of diseases as well

### **3.4 High Bride Price**

High bride price in some cultures has led to a substantial number of many young women remaining unmarried and resorting to prostitution in some cases to make ends meet, or engaging in casual sex with many partners to

satisfy their own sexual needs. This will invariably expose them to STDs including HIV/AIDS.

### **SELF ASSESSMENT EXERCISE 1**

Review the modes/ routes of HIV transmission

- |    |     |      |       |
|----|-----|------|-------|
| i. | ii. | iii. | iv.   |
| v. | vi. | vii. | viii. |

***Hint: Please see 3.1***

### **3.5 Women as Property**

The cultural notion that perceives woman as property and as an index of prosperity has often led some men to acquire many wives, in some cultures, the social status of the man is measured by the number of wives he has. This practice which promotes unlimited polygyny encourages transmission of HIV/AIDS.

### **3.6 Parental transmission**

Blood transfusion is the surest way to be infected with HIV/AIDS. About 10% of adult with HIV in Nigeria are reported to have contracted it through blood transfusion. The percentage may be much higher in children where anemia due to higher prevalence of some diseases in this age group is common. 90% of patients transfused with blood from HIV infected individual automatically acquire this infection.

### **3.7 Materno- Foetal Transmission**

10% of HIV/AIDS cases in Nigeria is reportedly transmitted from the mother to the child either during pregnancy or birth and much less after birth. It is estimated that 20 -40% of infants born to HIV seropositive mothers are infected. Although HIV has been detected in breast milk, its role in transmission of the infection is unclear. Generally the risk through this means is much lower as compassed with congenital or perinatal transmission.

Infection could also be transmitted during child delivery not from mother to child but from the traditional birth attendants, that are often employed to assist delivery. This could occur through the use of unsterilised instruments.

Also infected birth attendants could pass the infection both to the mother and child through the use of bare hands during delivery.

Any custom which involves sharing of cutting instruments or use of non-sterile surgical instruments poses a health risk to the recipient of such cultural practice and the general public. It is safer to modify dangerous and risky cultural practices so that everyone is safe from HIV/AIDS scourge.

### **3.8 Other High Risk and Cultural – Related Practice**

Beside blood transfusion which involves direct blood-to-blood contact, there are other cultural and traditional practices that also involve either direct or indirect blood contact and quite risky for HIV/AIDS transmission. They include some of these:

- Head and beard shaving: common in the northern part of Nigeria
- Tattooing: prevalent with women of some cultures as a cosmetic beautification in which non-sterile instruments are often used
- Tribal marks: this is prevalent in most tribes in Nigeria
- Ear – piercing: this is performed on most female children. Some young males are also doing it as the latest vogue in fashion.
- Scarification: This is widely practiced by most traditional and herbal healers, commonly in the middle – belt and southern parts of Nigeria
- Circumcision: Male circumcision is widely practiced all over Nigeria. Female circumcision is less wide- spread as the practice is fast dying out. This practice when carried out by non-medical personnel faces the problem of non-sterile instruments too.

### **3.9 How you can not get HIV/AIDS**

HIV and AIDS are not transmitted by the following

- Hugging
- Touching
- Coughing
- Sneezing
- Cutlery, glasses, cups. Food etc sharing
- Swimming pools
- Towels
- Toilet seats
- Pets

- Mosquito and other insect bite
- Baths and shower

However, it is important to remember that HIV can be found in body fluid like blood, semen, vaginal fluid, Breast milk and saliva and that HIV/AIDS spread occur commonly through

- Having sex with a person who has AIDS
- Using infected blood/ blood products of AIDS patients for blood transfusion
- Using unsterile needles and syringes
- An AIDS infected woman can pass the disease to the baby in her womb

### 3.9.1 Factors Fueling AIDS spread in Africa

Main issues in Africa include people's disbelief in the existence and reality of HIV/AIDS as well as insufficient/ non-availability of fund for AIDS programme and lack of political will on the part of government. Other factors include the followings among others:

- (1) Ignorance
- (2) High illiteracy level
- (3) Refusal to use condom
- (4) Widespread sexually transmitted diseases
- (5) Poverty
- (6) Lack of continuity in governance / inconsistent policies
- (7) Unstable government and political instability
- (8) Breast feeding
- (9) Cultural practices.

### SELF ASSESSMENT EXERCISE 2

List factors that fuel AIDS spread in Africa

- |      |       |      |
|------|-------|------|
| i.   | ii.   | iii. |
| vi.  | v.    | vi.  |
| vii. | viii. | ix.  |

*Hint: please see 3.9.1*

## 4.0 CONCLUSION

Modes of HIV transmission are numerous and anyone can fall victim to it. We all need to re-double our efforts and be extra-vigilant to be able to make attempt to stop the scourge; there is no more time to waste if we must control the scourge. This is the time to act and you are also part of the race

## **5.0 SUMMARY**

- HIV/AIDS global demographic view indicates high prevalence and incidence rates confirming its pandemic nature.
- Sentinel surveillance of HIV/ AIDS and its epidemiological study in Nigeria also point at the disease as being epidemic
- The major transmission route remains sexual especially homosexual and heterosexual activities.
- High risk and culture-related practices are also incriminated in the rapid spread of HIV/AIDS
- Though certain factors fuel AIDS spread in Africa but there are still some activities that will never lead to AIDS spread

## **6.0 TUTOR MARKED ASSIGNMENT**

Discuss high risk culture-related practices in Africa that help in the spread of HIV/AIDS

## **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 5      DEMOGRAPHIC INCIDENCE AND PREVALENCE OF HIV/AIDS**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Contents
  - 3.1    HIV/AIDS global demographic view
  - 3.2    The UNS view of HIV/AIDS pandemic
  - 3.3    HIV/AIDS epidemic in Nigeria
  - 3.4    HIV sentinel surveillance in Nigeria
  - 3.5    Epidemiology of HIV/AIDS in Nigeria
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

This aspect of your study deals with demography which is the statistical study of human population. This course unit essentially will relate HIV/AIDS prevalence and incidence to the epidemiology of the disease. That is, the study of HIV/AIDS in terms of its distribution pattern or spread and the number of new cases around.

### **2.0    OBJECTIVES**

By the end of this unit you should be able to.

- Understand the factors that fuel AIDS spread in Africa
- Have an appreciation of the spread of HIV/AIDS globally and locally
- Have an awareness of HIV surveillance epidemiology in terms of modes or routes of transmission
- Know some high risk culture – related practices/ factors that increase HIV/AIDS spread
- Appreciate how HIV/AIDS can not be transmitted.



### **3.0 MAIN CONTENT**

### 3.1 HIV/AIDS Global Demographic View

The disease spreads through infected blood production and drug abuse, but overwhelmingly by sexual contact, predominantly between men and women. Women are more vulnerable to infection due to physiological and social reasons, and sex workers are far more likely than the population at large to be infected. But the sexual behaviour of men is largely responsible for spreading the disease.

The study of HIV/AIDS general distribution pattern or spread as well as the total number of new cases is shown in the alarming figures enumerated below according to a report by the World Health Organization (WHO)

1.	North America	_____	1.2 Million
2.	Caribbean	_____	300, 000
3.	Western Europe	_____	220,000
4.	Eastern Europe & Central Asia	_____	1.6 Million
5.	East Asia	_____	870,000
6.	South & South East Asia	_____	74, Million
7.	Oceania	_____	74,000
8.	Sub-Sahara Africa	_____	25.8 Million
9.	North Africa & Middle East	_____	510,000
10	Latin America	_____	<u>1.8 Million</u>
			<u>39.774 Million</u>

#### SELF ASSESSMENT EXERCISE 1

What is the total population of HIV positive people in North America?

*Hint ..... 3.1*

### 3.2 The United Nations View of HIV/AIDS Pandemic

The United Nations has called AIDS the most devastating disease mankind has ever faced. AIDS is a worldwide catastrophe and the biggest plague in human history. The latest statistics tell us that around 40 Million people worldwide are HIV- positive. In sub-Saharan Africa, we have 70% of that 40 Million people. Experts estimate that 600,000 people, especially babies become infected each year.

All the wars in the twentieth century resulted in 33 million deaths. But in just about 25 years of AIDS, already about 25 million people or more have

died, 8,000 people die every day from HIV/AIDS in sub-Saharan Africa, from Nigeria to Cape Town, 6,000 people die daily from AIDS. The continent of America and the world were shocked when on September 11 of the year 2001, the world trade centre collapsed through terrorist's attacks, but in Africa, the world trade centre collapses twice a day, in terms of the number of victims that die from AIDS in Africa.

### **3.3 The HIV Epidemic in Nigeria**

The spread of this virus in Nigeria is believed to have started in the 1980s with the first AIDS case reported in 1986. Nigeria is currently experiencing a generalized HIV prevalence persistently above 1% in pregnant women attending antenatal clinics since 1999. In 2003, it was estimated that 3.2 – 3.8 Million persons were living with HIV/AIDS in Nigeria.

It is believed that statistics on HIV/AIDS in Nigeria is not a true picture of what is on ground but it is estimated that there could be 1 to 2 Million people in Lagos alone who are HIV positive. The city of Lagos is also estimated to have the largest number of HIV positive victims than many cities in the world. It is said that, in Lagos, commercial hawking of one's body is a big factor in HIV/AIDS spread. According to the Federal Ministry of Health, the official HIV/AIDS prevalence rate in Nigeria between 2000 to 2005 is around 5.8%, and more recently, the 2007 health statistics indicates 4.4%, hopefully a steady and promising decline.

### **3.4 HIV Sentinel Surveillance**

The virus sentinel surveillance was established to monitor trend in the HIV epidemic and assess the impact of the response. The survey was conducted from August 29 to November 26, 2005 to determine HIV prevalence among pregnant women attending antenatal clinics and also acquire data for estimating and projecting HIV Figures and trends in the general population.

The 2005 sentinel survey involved 36,931 pregnant women attending antenatal clinics in 160 sites (86 urban and 74 rural) in 36 states and the management Team was set up by the Federal Ministry of Health under the chairmanship of the Director of Public Health. The National Action Committee on AIDS (NACA), UN agencies, bilateral agencies and other stakeholders participated as members of the committee.

### **3.5 Epidemiology of HIV/AIDS in Nigeria**

The prevalence of HIV among antenatal clinic clients after the 2005 sentinel survey was found to be 4.4% it was 1.9% in 1991, 4.5% in 1996, and 5.8% in 2001. HIV epidemic in Nigeria has since extended beyond the high risk groups to the general population. Some parts of the country are worst affected than others but no state community is unaffected. All the states of Nigeria have a generalized epidemic (>1% among pregnant women) The epidemic in the country can be described as heterogeneous with various communities in different stages, some declining while others are still rising.

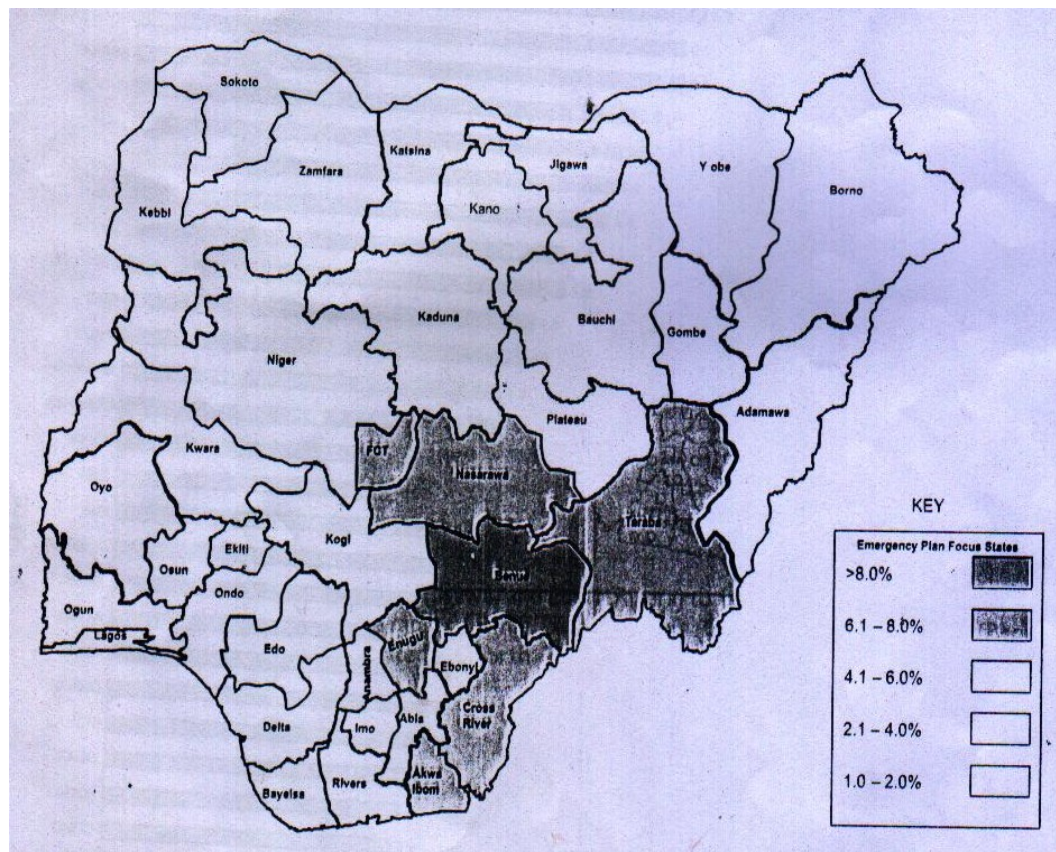
From the result of the 2003 survey, it was estimated that 3.5 million people were living with HIV/AIDS in the country. The report also showed that HIV was more prevalent in the 20-29 years age group in the urban areas and amongst persons with only primary and secondary school education. AIDS cases are becoming more visible in communities. Although AIDS case reporting has been characterized by under – recognition, under – reporting and delayed reporting, the number of reported cases has been on the increase especially since 1996 .

HIV prevalent rate among commercial sex workers in Nigeria has remained high and on the increase from 17.5% in 1991. Through 22.5% in 1993, to 35.6% in 1995. This group constitutes an important reservoir of HIV infection for transmission to the general population through sexual networking. Also the growth in prevalence among tuberculosis patents has remained relatively high 2.8% in 1991, 7.9% in 1993 13% in 1995 and 17% in 2000 (refer to figures 1 to 3 and tables and 2)

#### **3.5.1 HIV Prevalence by State**

States in the North West and South West presents Lower HIV prevalence. High HIV prevalence is concentrated in Benue and adjoining State (Figure Figure 1. Geographical Distribution of HIV prevalence by state (HSS 2005)

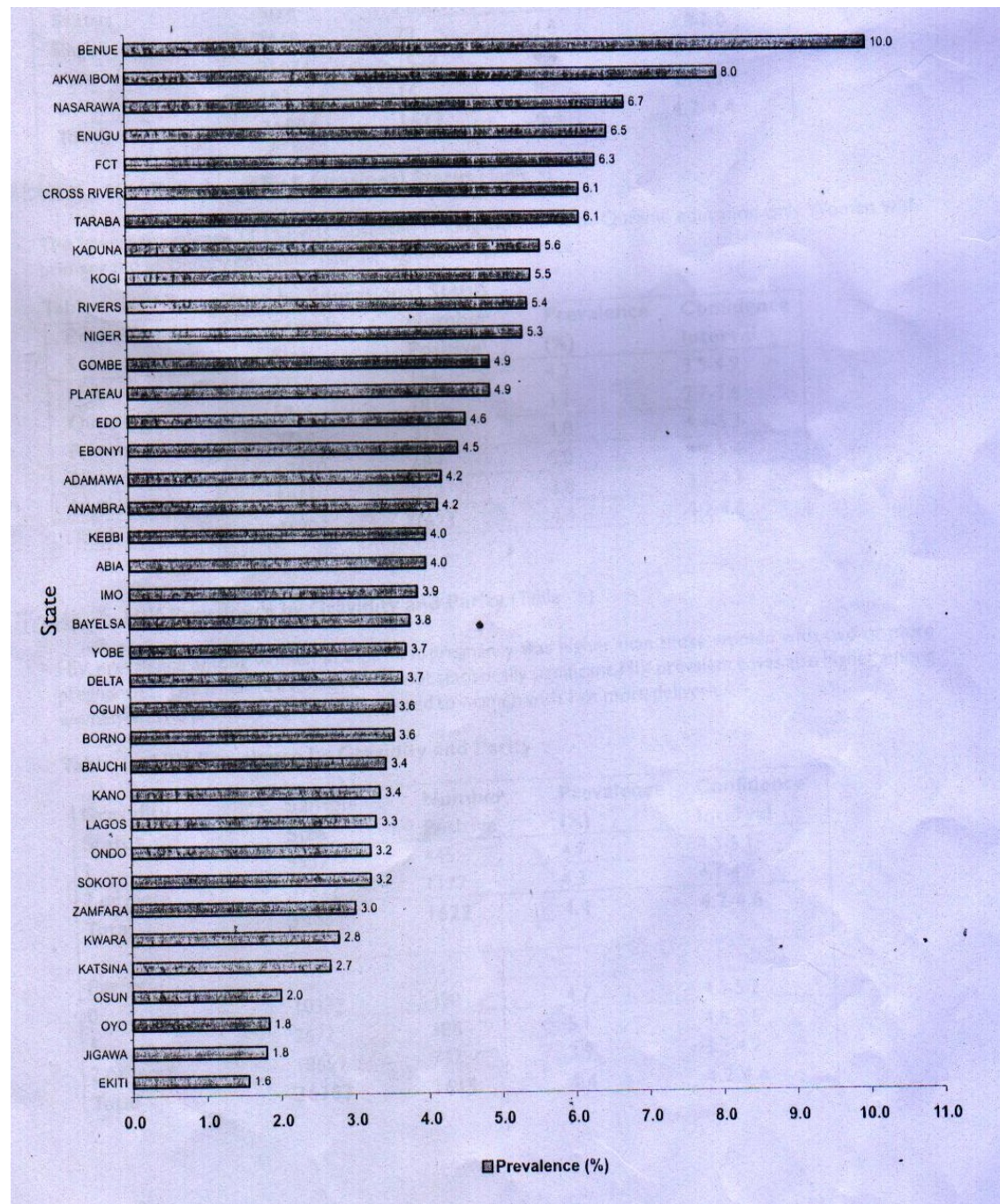
### HIV Prevalence by State (Nigeria 2005)



3.42 The state HIV prevalence range from 1.6% (Ekiti) to 10.0% (Benue) and the median prevalence was 4.0% (Abia) Figure



Figure 2 HIV prevalence by state, (HSS 2005)



2005 HIV SENTINEL SURVEY.

### 3.4.3 HIV prevalence by marital status (Table)

\*HIV prevalence was lowest among married women.

**Table 1: HIV prevalence by marital status (HSS 2005)**

<b>Marital Status</b>	<b>Sample Size</b>	<b>Number Positive</b>	<b>Prevalence (%)</b>	<b>Confidence Interval</b>
Single	1648	78	4.8	3.8-6.0
Married	35074	1528	4.4	4.1-4.6
Other	182	16	8.8	5.1-13.9
<b>Total</b>	<b>36904</b>	<b>1623</b>	<b>4.4</b>	<b>4.2-4.4</b>

**Table 2: HIV prevalence by Educational status.**

<b>Educational Status</b>	<b>Sample Size</b>	<b>Number Positive</b>	<b>Prevalence (%)</b>	<b>Confidence Interval</b>
None	3757	156	4.2	3.5-4.9
Quranic Only	5816	181	3.1	2.7-3.6
Primary	7768	375	4.8	4.4-5.3
Secondary	13650	689	5.0	4.7-5.4
Higher	5911	222	3.8	3.3-4.3
<b>Total</b>	<b>36902</b>	<b>1623</b>	<b>4.4</b>	<b>4.2-4.6</b>

Table 3: HIV Prevalence by Gravidity and parity (Table)

HIV prevalence among those in their first pregnancy was higher than those women with two or more pregnancies. The difference however was not statistically significant. HIV prevalence was also higher among women with no previous deliveries compared to women with one or more deliveries.

**Table HIV prevalence by Gravity and parity**

<b>Marital Status</b>	<b>Sample Size</b>	<b>Number Positive</b>	<b>Prevalence (%)</b>	<b>Confidence Interval</b>
1	9532	445	4.7	4.3-5.1
2 or more	27317	1177	4.3	4.1-4.6
<b>Total</b>	<b>36851</b>	<b>1622</b>	<b>4.4</b>	<b>4.2-4.6</b>
Parity				
0	10332	490	4.7	4.3-5.2
1	7672	388	5.1	4.6-5.6
2 or more	18699	737	3.9	3.7-4.2
<b>Total</b>	<b>36703</b>	<b>1615</b>	<b>4.4</b>	<b>4.2-4.6</b>

### 3.4.4 Trend Analysis

Figure 3: National HIV prevalence trend, 1991 – 2005, (HSS 2005)

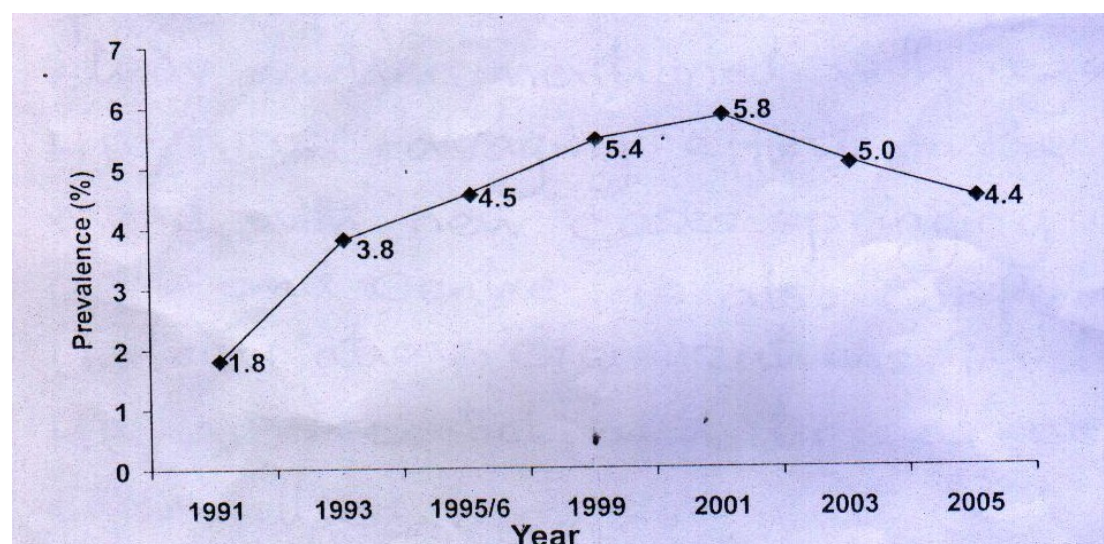


Figure 4 shows the trend of HIV prevalence in Nigeria between 1991 and 2005, as reported from the HIV sentinel sero – surveillance cycle. There was a steady increase in HIV prevalence from 1.8% in 1991 to 5.8% in 2001 before a drop to 5.0% in 2003. The result for 2005 showed a further drop to 4.4%.

**Table 4: HIV prevalence trends by state from 1991 – 2005, (HSS 2005)**

State	1991/92	1993/94	1995/96	1999	2001	2003	2005
Adamawa	0.3	1.3	5.3	5.0	4.5	7.6	4.2
Anambra	0.4	2.4	5.3	6.0	6.5	3.8	4.2
Benue	1.6	4.7	2.3	16.8	13.5	9.3	10.0
Borno	4.4	6.4	1.0	4.5	4.5	3.2	3.6
Cross River	0.0	4.1	1.4	5.8	8.0	12.0	6.1
Delta*	0.8	5.1	2.3	4.2	5.8	5.0	3.7
Edo	0.0	1.8	3.0	5.9	5.7	4.3	4.6
Enugu	1.3	3.7	10.2	4.7	5.2	4.9	6.5
Kaduna	0.9	4.6	7.5	11.6	5.6	6.0	5.6
Kano	0.0	0.4	2.5	4.3	3.8	4.1	3.4
Kwara	0.4	2.4	1.7	3.2	4.3	2.7	2.8
Lagos	1.9	6.8	-	6.7	3.5	4.7	3.3
Osun*	0.0	1.4	1.6	3.7	4.3	1.2	2.0
Oyo*	0.1	0.2	0.4	3.5	4.2	3.9	1.8
Plateau*	6.2	8.2	11.0	6.1	8.5	6.3	4.9
Sokoto	1.8	1.6	-	2.7	2.8	4.5	3.2
Abia	ND	ND	ND	3.0	3.3	3.7	4.0



Akwa Ibom	ND	ND	ND	12.5	10.7	7.2	8.0
Bauchi	NN	ND	ND	3.0	6.8	4.8	3.4
Bayelsa	ND	ND	ND	4.3	7.2	4.0	3.8

## 4.0 CONCLUSION

It is clear from the WHO report of demographic incidence and prevalent study earlier mentioned with regards to HIV/AIDS ravaging effect on the whole world with new cases springing up left, right and. All hands must be on deck in the fight to control the scourge that has been on the increase ever since its emergence.

## 5.0 SUMMARY

- 1) The latest statistics tell us that there are about 40 Million HIV positive people globally.
- 2) 70% of the 40 Million sero-positive people are said to be in sub-Saharan Africa alone
- 3) 600,000 people, mainly babies become infected with HIV every year
- 4) In just about 25 years of AIDS 25 Million people or more have died of it in the world
- 5) 8000 people die everyday of AIDS in sub-Sahara Africa alone
- 6) The 2003 sentinel survey estimated that about 5.0 Million people are living with HIV/AIDS in Nigeria.

## 6.0 TUTOR MARKED ASSIGNMENT

Comment on HIV/AIDS global demographic view

## 7.0 REFERENCES/FURTHER READINGS

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## MODULE 2

Unit 1	Relationship between Poverty and HIV/AIDS
Unit 2	HIV/AIDS Global Initiatives I
Unit 3	HIV/AIDS Global Initiatives II
Unit 4	Sources of Funds and HIV/AIDS Financing
Unit 5	Development Assistance for HIV/AIDS Capacity Building In Nigeria.

## **UNIT 1 THE RELATIONSHIP BETWEEN POVERTY AND HIV/AIDS**

### **CONTENTS**

1.0	Introduction
2.0	Objectives
3.0	Main Content
3.1	HIV/AIDS and Poverty
3.2	Efforts to reduce poverty
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Readings

### **1.0 INTRODUCTION**

This unit deals with the relationship between poverty and HIV/AIDS, and it is also aimed at understanding the impact of poverty on the spread of HIV/AIDS as well as the influence of the poverty on disease causation.

### **2.0 OBJECTIVES**

At the end of this unit, you should be able to:

- Illustrate the economic effect of HIV/AIDS on individuals
- Illustrate the link between poverty and HIV/AIDS
- Identify efforts put in place to reduce HIV/AIDS related poverty

### **3.0 MAIN CONTENT**

### 3.1 HIV/AIDS and Poverty

Unrealistic assumptions about the impact of high HIV/AIDS prevalence rates may be unhelpful as they obscure the complex nature of the development problems facing affected populations. In the area of education, new evidence in some African countries suggests that the impact of HIV/AIDS may not be as simple or direct as has been assumed

HIV/AIDS needs to be analyzed as a cross-cutting issue intrinsically linked to poverty and policy if its impacts area to be addressed adequately. HIV/AIDS has clearly had a devastating impact on many societies in sub-Saharan Africa, but the epidemic is not solely or simply to blame for all the reverses in development progress in the continent. The complex nature of the impact of HIV/AIDS might be felt in the education sector through rising rates of illness and death among pupils and teachers

The economy will undoubtedly be affected if half of new HIV infection are among young people aged 15- 24 , many of whom have no information on prevention services and are still ignorant or will not believe the impacts of HIV/AIDS are realities or that it can ever happen to them and they will not even protect themselves .

In the study of 15-19 years olds in seven African countries, at least 40% did not believe that they were at risk. In one country the figure was 87%. At least 30% of young people in 22 countries surveyed by UNICEF in 2002 had never heard of AIDS, in 17 countries surveyed, over half of the adolescents could not name a single method of protecting themselves against HIV. In all surveys, young women know less than young men and previous research finding show that women are more vulnerable.

Though AIDS epidemics occur in both developed and developing countries but the impact is more on the developing ones due to obvious reasons. HIV/AIDS in the developing countries is destroying lives and livelihoods alike, wiping out decades of progress. UNFPA reports on the state of world population 2002, states that in the industrial countries most infections are among the poor.

UNFPA further states that economic and social changes have created an enabling environment that places tens of millions of people at risk of infection and therefore suggest that HIV/AIDS should not be treated only as a disease but as poverty related and thus initiatives that only seek to change behaviour are insufficient to stem the epidemic, as determinants of the

epidemic go far beyond individual volition since HIV/AIDS accompanies poverty and produces poverty in its turn.

According to UNAIDS and WHO, over 60 million people have been infected with HIV/AIDS and more than 20 million people have been killed and millions are also been infected on daily basis. An estimated 40 million people are living with the virus, over 28 million in Africa and almost 95% in developing countries. It is also said to be spreading most rapidly now in Eastern Europe and central Asia where most new infections are among injecting drug users. India may have more than 4 million infected. Its prevalence in China is unknown, but it may be far more than the official estimate of about a million. Some estimates are as high as 6 million with a possible 10 million by the end of the decade. UNAIDS and WHO now estimates that more than 4 million children under the age of 15 have been infected with HIV, over 90% were infants born to HIV – positive mothers and acquired the virus before or during birth or through breast feeding. These infections have resulted in unprecedented increase in infant mortality because HIV infection progresses quickly to AIDS in children and many of these children have died. Also, of the 580,000 children under the age of 15 who died of AIDS in 2001, 500,000 nearly nine out of ten were African

From the fore-going facts it is glaring that HIV/AIDS has become one of the deadliest and fastest spreading of the diseases of sex and reproduction and poses a greater threat to development prospects in poor countries than any other disease as the impact is hardest among the poor, who have no economic cushion and the weakest social support of any group. Just about twenty five years after the first clinical evidence of AIDS it has become the most devastating disease yet faced by humanity, striking on average, 14,000 men ,women , and children daily ,the leading cause of death in sub – Saharan Africa.

## **SELF ASSESSMENT EXERCISE 1**

What is the title of this unit?

*Hint: see 3.1*

### **3.2 Efforts to Reduce Poverty**

One of the eight Millenium Development Goals (MDG) is the reduction of poverty. Most international agencies including the International Labour Organization (ILO), Food and Agricultural Organization (FAO) and others

have agreed to strengthen collaboration and partnership effort to bolster UN actions designed to reduce poverty and create more Aids.

While the AIDS epidemic has reached every country in the world, more than 95% of all seropositive people live in the rural and urban areas of developing countries.

For this reason and because of the far – reaching consequences of HIV/AIDS at all levels of society and its socio- economic repercussions, stretching far beyond the epidemic should be tackled at all levels and sectors of society: household and community; the public sector; health care, education and welfare sector and the business sector. AIDS impacts in developing countries are out of the ordinary in many ways but three stand out.

First, AIDS affect primarily the most productive age groups; second, although its strikes most harshly among the poor and marginalized in global terms, AIDS does not spare the elite or the middle class, and third AIDS is not gender neutral. For example one has only to look at acute vulnerability of widows compared to widowers in high prevalence societies.

However, no matter what level of prevalence is found in any given country, the impact of AIDS on affected families and communities is of devastating magnitude. Thus while macroeconomic effect are of importance in evaluating the socio- economic impact of HIV/AIDS, they must be separated from human-scale consequence on individuals.

FAO's constitutional mandate is to improve food production and distribution as well as the conditions of rural population. It works in partnership with government, regional organizations, international organization non governmental organizations (NGOs) and, where appropriate with the private sector. For its part, UNAIDS has the task of mobilizing a broad – based response to the global health and development challenges posed by HIV/AIDS. The programme works in partnership with governments and NGOs.

## **SELF ASSESSMENT EXERCISE 2**

Mention the two main issues discussed in this unit

1 ..... 2.....

*Hint: see 3.1 and 3.2 sub -titles*

## **4.0 CONCLUSION**

Poverty aggravates HIV transmission indirectly by increasing migrant labour, family break up, overcrowding and homelessness. All these put together can make people have multiple and casual partners.

The incubation period of HIV is likely to be shortened by poor nutrition and limited access to medical care thus hastening death due to AIDS faster in the poor than rich people. Women and girls are also more vulnerable to commercial casual sex relationship due to poverty.

## **5.0 SUMMARY**

HIV/AIDS is related to poverty. Poverty can lead one to involve in activities that are prone to its acquisition e.g. prostitution. The impact of HIV/AIDS can be more devastating in the presence of poverty while HIV/AIDS often leads to poverty.

The United Nations together with their range of partners and expertise are uniquely positioned to develop measures to alleviate the impact of poverty on AIDS, especially through food security and reduction of vulnerability to infection via sustainable rural development.

## **6.0 TUTOR MARKED ASSIGNMENT**

What effort are being made locally and globally to reduce poverty so as to stop the AIDS pandemic?

## **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 2     HIV/AIDS GLOBAL INITIATIVES I**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Global initiatives on HIV/AIDS
  - 3.2    The strategies employed
  - 3.3    Impact of the global initiatives
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
  
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

The global initiatives on HIV/AIDS have been multifaceted and holistic in approach since about 2 decades and half years of AIDS emergence in 1981 when the infection burst out of obscurity to threaten every nation with crippling social and economic tragedies. Despite the devastating effects of AIDS, some people still refuse to recognize it though the disease continues to expand its territories as it spread like bush fire and according to WHO over 60 million people are already infected while the scourge still continues unabated.

### **2.0    OBJECTIVES**

- To sensitize learners to the devastating effect of HIV/AIDS
- Stimulate students to actively seek latest information about HIV/AIDS programmes.
- Create more awareness about on-going activities on HIV/AIDS
- Encourage you to be part of the global initiatives on HIV/AIDS by supporting/ or financing programmes

### **3.0    MAIN CONTENT**

#### **3.1    Global Initiatives on HIV/AIDS**

On 1<sup>st</sup> of February 1987, WHO's special programme on AIDS (now called the Global Programme) was created at the strategic headquarters of the



global courier-attack. In a remarkably short time, the programme has designed the Global AIDS strategy, raised funds and rapidly started to implement the strategy, and marshaled the support of all nations.

AIDS is a global problem and such a problem of this magnitude and broad impact - social, economic, demographic, cultural and political- requires a global response. WHO has been orchestrating such a response in keeping with its constitutional mandate to direct and coordinate international health. For AIDS to stop, it is becoming more and more glaring the global effort would be required just as smallpox eradication which became a reality only when nations banded together under the banner of WHO. There is therefore need for global mobilization around a global strategy.

The bitter truth is that AIDS is more than just a disease, a medical condition, a health problem but also a great threat to social and economic development, to people especially in the most productive phase of their lives, to family life, to mothers and their children to entire cultures and population.

### **SELF ASSESSMENT EXERCISE**

State in one short sentence the approach required to stop AIDS

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*Hint: please see 1.0*

### **3.2 The Strategies Employed**

From the onset, WHO knew that it will be an error to lose sight of the fact that the social and economic effects of AIDS pathology are as much as the virus itself? Therefore the global strategy was established in such a way that strong AIDS programmes were developed in every country with national committees on AIDS control in over 150 countries. As early as February 1987, 111 countries including 43 in Africa, 25 in Middle East, Asia and Oceania, 37 in the Americas and 6 in Europe entered into collaboration with WHO to support and strengthen their national AIDS programmes. At the request of these governments, WHO has been providing staff and organizing workshops to train laboratory workers, who in turn train others in the latest AIDS laboratory techniques. Throughout the world national programmes are being rapidly established with the technical and financial support of WHO's Global programmes

The Global Initiative Programmes and individual country's national AIDS activities are being supported by strong international leadership. Coordination and collaboration so as to curb the global scope of AIDS and its broad social impact. Vital international meetings have marked distinct turning points in national and regional awareness and action. In collaboration with world-renowned scientists, a global bank for AIDS viruses was organized, and guidelines on such key issues as international travel were issued as well as and laid down standards for screening programme. The global AIDS data bank encourages exchanges of vital information for tracking progress of the diseases which is also helping countries to determine the economic and demographic impact of the disease and are designing models of the epidemic to help predict its future course.

Special prominence has also been given to social and behavioural issues, including public perceptions of AIDS and responses to it, educational strategies to prevent transmission and the impact on demography and on social structures, especially families. Furthermore, a Global Commission on AIDS saddled with the responsibility of bringing together experts in the health, social, economic, legal, ethical body was set up to advise WHO on worldwide developments related to AIDS, in relation to the progress epidemiological, socio-economic and biomedical research. In so doing, it will also help to maintain the momentum of the global strategy.

Funding has been a major issue and constraint in the fight against AIDS, WHO which is one of the main bodies seriously involved in the struggle has had to put a freeze on so many other vital activities by scrapping their regular budget. Many bilateral and multilateral agencies as well as non-governmental and voluntary organizations were mobilized for assistance, financially, materially and in kind. Most of these organizations willingly joined in the AIDS control programmes and worked, some still working within the global strategy of WHO.

However, in the current climate of resources shortages for sexual and reproductive health service, the rise in private sector funding is welcome, but the financial burden shift could lead to health being regarded as a market commodity rather than a human right, with service provision aimed at providing cheap cost-effective services than at ensuring equal access to quality health care for the poorest people and countries. There is therefore need for top-level political commitment, systematic health sector reforms, human rights protection and a range of multi-sectarian reforms to help reduce the factors contributing to HIV spread.

## SELF ASSESSMENT EXERCISE

Which international organization initiated AIDS control programme

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*Hint: see 3.2*

### 3.3 Impact of the Global Initiatives

Research is relevant to every sector of society, especially the health sector and medical research and has provided the strongest support for preventive and curative medicine particularly in the struggle for HIV/AIDS control. Globally, it has become generally accepted that improvement in health care delivery is closely associated with advances in Medical research . Indeed, strengthening medical research capacities at the national level has constituted the most powerful cost effective and sustainable means of advancing health and development. HIV/AIDS Global initiatives have helped to direct medical research toward the most prevalent and unsolved health problems within the population and efforts are being geared towards finding new solutions, providing the most up-to-date information to modify health policies and improve on existing strategies or develop new ones, monitoring the response to intervention, and promoting more research to identify new problems.

The joint efforts of the national, international, bilateral and multilateral agencies and organizations are meant to promote inclusive economic growth, social development inclusive economic growth with social development to benefit the bottom 20-40% of the population. It is also expected to bolster United Nations efforts to achieve the Millennium Development Goals (MDG) by 2015. There is also urgent need to bridge the exploding inequality between the rich and the poor despite unprecedented prosperity to enhance poverty reduction alongside good governance in a democratic and participatory setting to encourage economic empowerment that translates to decent work for all.

### 4.0 CONCLUSION

Implementation of the HIV/AIDS global initiatives require the broadest possible support to confront this disease and all of its social, political and economic repercussions. Remember that AIDS had stolen a march upon us, for it spread silently and widely before we even knew of its existence or its cause. True, infection continues to spread, fear and ignorance create personal, family and social tragedies, defeatism, extremism and

discrimination threaten. Yet enough and all available resources are being mobilized to enhance intellectual capacity, the social tools, the knowledge and the will not just to make a resolute stand but to dominate this disease, rather than allowing AIDS and the fears which surround it to dominate us. Let us not underestimate the challenge before us, for a worldwide effort will be required to stop AIDS. Yet we can, and we must, win this global war. We shall do so by displaying what WHO stands for international solidarity in the drive to improve the health of all people everywhere. However, there is still need for more capacity building as well as more fundamental research before we arrive at the right solutions.

## **5.0 SUMMARY**

- HIV/AIDS activities are spear-headed by WHO in collaboration with UN agencies, NGOs and other world bodies
- The global HIV/AIDS initiative embraces formulation of policy, sourcing for funds, capacity building, international collaboration and research activities
- The strategy employed is mainly a collaborative approach of local, national. International and multinational agencies
- There is still urgent need for the broadest possible support in all ramifications, to be able to effectively confront the disease.

## **6.0 TUTOR MARKED ASSIGNMENT**

Discuss the global AIDS initiative

## **7.0 REFERENCES/FURTHER READINGS**

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WHO (1988) AIDS: a shadow in our world published by. Geneva: WHO.

## **UNIT 3     HIV/AIDS GLOBAL INITIATIVES II**

### **CONTENTS**

- 1.0     Introduction
- 2.0     Objectives
- 3.0     Main Content
  - 3.1     London Declaration on AIDS prevention
- 4.0     Conclusion
- 5.0     Summary
- 6.0     Tutor Marked Assignment
- 7.0     References/Further Readings

### **1.0     INTRODUCTION**

This unit is based on the London Declaration of 1988 which was hinged on AIDS prevention globally and it is following in the foot step of the WHO Global programme on AIDS, aimed at sensitizing and mobilizing, international bodies, government, organizations and individual to be part of the efforts to control AIDS spread.

The unit contains all the 15 points raised at the summit and it is also meant to complement and supplement HIV/AIDS Global initiative I in the previous Unit.

### **2.0     OBJECTIVES**

By the end of this unit, you should be able to:

- Compare the ideas in Global initiative 1 and Global Initiative11
- Explain the rationale behind the London Summit of 1988 in London
- Identify various efforts made by multinational bodies, government, organizations and individual in the fight against AIDS.
- Have enough insight to AIDS initiative and be motivated to join in the race

### **3.0     MAIN CONTENT**

### 3.1 London Declaration on AIDS Prevention

The WORLD SUMMIT OF MINISTERS OF Health on programmes for AIDS prevention, involving delegates from 148 countries representing the vast majority of the people of the world, makes the following declaration:

1. Since AIDS is a global problem that poses a serious threat to humanity, urgent action by all government and people of the world over is needed to implement WHO's Global AIDS strategy as defined by the Fortieth World Health Assembly and supported by the United Nations General Assembly.
2. We shall do all in our power to ensure that our governments do indeed undertake such within urgent action.
3. We undertake to devise national programmes to prevent and contain the spread of Human Immunodeficiency Virus (HIV) infection as part of our countries' health systems. We recommend to all governments the value of a high level coordinating committee to bring together all government sectors, and we shall involve, to the fullest extent possible, all governmental sectors and relevant nongovernmental organizations in the planning and implementation of such programmes in conformity with the Global AIDS strategy.

#### SELF ASSESSMENT EXERCISE

Was the London declaration of 28 January, 1988 on AIDS prevention?  
 Yes \_\_\_\_\_ No \_\_\_\_\_

*Hint: See 3.1 title*

4. We shall impress on our governments the importance for national health of ensuring the availability of the human and financial resources, including health and social service with-trained personnel, needed to carry out national AIDS programmes, in order to support informed and responsible behaviour.
5. In the spirit of United Nations General Assembly Resolution A/42/8, we appeal:
  - a. To all appropriate organizations of the United Nations system, including the specialized agencies;
  - b. To bilateral and multilateral agencies; and

- c. To nongovernmental and voluntary organizations to support the worldwide struggle against AIDS in conformity with WHO's global strategy.
6. We appeal in particular to these bodies to provide well-coordinated support to developing countries in setting up and carrying out national AIDS programmes in the light of their needs. We recognize that these needs vary from country to country in the light of their epidemiological situation.
7. We also appeal to those involved in dealing with drug abuse to intensify their efforts in the spirit of the international Conference on Drug Abuse and illicit Trafficking (Vienna, June 1987) with a view to contribution to the reduction in the spread of HIV infection.
8. We call on the World Health Organization, through its Global programme on AIDS, to continue to:
  - Exercise its mandate to direct and coordinate the worldwide effort against AIDS;
  - Promote, encourage and support the worldwide collection and dissemination of accurate information on AIDS
  - Develop and issue guidelines on the planning, implementation, monitoring and evaluation of information and education programmes, including the related research and development , and ensure that these guidelines are updated and revised in the light of evolving experiences;
9. We recognize that, particularly in the absence at presence of a vaccine or cure for AIDS, the single most important component of national AIDS programmes is information and education because HIV transmission can be prevented through informed and responsible behaviour. In this respect, individual, government, the media and other sectors all have major roles to play in preventing the spread of HIV infection.
10. We consider that information and educational programmes should be aimed at the general public and should take full account of social and cultural patterns, different lifestyles, and human and spiritual values. The same principles should apply equally to programmes directed towards specific group, involving these groups as appropriate. These include group such as:

- Policy makers;
  - Health and social service workers at all levels;
  - International travelers;
  - Persons whose practices may place them at increased risk of infection;
  - The media,
  - Youth and those that work with them, especially teachers; Community and religious leaders;
  - Potential blood donors; and
  - Those with HIV infections, their relatives and others concerned with their care, all whom need appropriate counselling.
11. We emphasize the need in AIDS prevention programme to protect human rights and human dignity. Discrimination against, and stigmatization of, HIV-infected people and people with AIDS must be avoided.
  12. We urge the media to fulfill their important social responsibility to provide factual and balanced information to the general public on AIDS and on ways of preventing its spread.
  13. We shall seek the involvement of all relevant governmental sectors and nongovernmental organizations in creating the supportive social environment needed to ensure the effective implementation of AIDS prevention programmes and humane care of affected individuals.

### **SELF ASSESSMENT EXERCISE**

Which two bodies sponsored the summit?

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*Hint See 3.1*

- Support countries in monitoring and evaluating and preventive programmes, including information and education activities, and encourage wide dissemination of the funding in order to help countries to learn from the experiences of others;
- Support and strengthen national programme for the prevention and control of AIDS



14. Following from this Summit, 1988 shall be a year of Communication and cooperation about AIDS in which we shall:
  - Open fully the channels of communication in each society so as to inform and educate more widely, broadly and intensively;
  - Strengthen the exchange of information and experience among all countries; and
  - Forge, through information and education and social leadership, a spirit of social tolerance
15. We are convinced that, by promoting responsible behaviour and through international cooperation, we can and will begin now to slow the spread of HIV infection

### **SELF ASSESSMENT EXERCISE**

The London Declaration contains how many main points:

*Hint : See last line of 3.1*

## **4.0 CONCLUSION**

The London declaration is an effort in the right direction as it sets to sensitize and mobilize the whole world-multilateral bodies, government, organizations and individuals. Almost two decades after, it is evident that the summit has actually achieved what it was intended for, as HIV/AIDS control activities are all over the place. Though more still need to be done as no cure has yet been found and also struggle for HIV vaccine production also seems endless, and the story is almost the same for other research activities

## **5.0 SUMMARY**

- The world summit of ministers of Health on programmes for AIDs prevention took place in London
- It was a 3 – day meeting held between 26<sup>th</sup> and 28<sup>th</sup> of January 1988
- The delegates involved in the summit were from 148 countries representing the vast majority of the people of the world

- The summit at the end of the 3 – day deliberations came out with 15 points resolution
- An appeal was made to the World Health Organization (WHO) to assist through its Global programme on AIDS
- The United Nations was also enjoined to mobilize its various organizations to assist in the fight against HIV/AIDS
- Governments, organizations and individuals were also appealed for assistance

## **6.0 TUTOR MARKED ASSIGNMENT**

Briefly review the London Declaration on AIDS prevention of 28 January 1988

## **7.0 REFERENCES/FURTHER READINGS**

Adeyi O; Kanki, P.I; Odutolu, O and Idoko, J.A (2006) AIDS IN NIGERIA: A nation on the threshold. USA: Harvard University Press

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## **UNIT 4      SOURCES OF FUNDS AND HIV/AIDS FINANCING**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Contents
  - 3.1    Sources of funds
  - 3.2    HIV/AIDS Financing in developing Countries
  - 3.3    Agencies in Support of HIV/AIDS Control
    - 3.4    UNAIDS Co-sponsors
      - 3.4.1    UNAIDS
      - 3.4.2    UNDP
      - 3.4.3    UNFPA
      - 3.4.4    UNDCP
      - 3.4.5    UNESCO
      - 3.4.6    WORLD BANK
- 40.    Conclusion
  - 5.0 Summary.
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings.

### **1.0    INTRODUCTION**

Since the emergence of AIDS in the 80s, a lot of funds have been committed to the various activities and a lot more is being required for effective control of the scourge, thus multinational organization, agencies non-governmental bodies and individuals have been involved with their time, money and resources.

### **2.0    OBJECTIVES**

At this end of this unit, you are expected to know the following:

- Source of funds for HIV/AIDS activities
- The Agencies and organizations involved in the support of AIDS activities.
- The roles played by them individually and collectively.

### **3.0 MAIN CONTENT**

#### **3.1 Sources of Funds**

Traditionally, the donors associated with population and reproductive health activities have been the bilateral wing of wealthy Northern governments (notably the United States, Britain, Germany, Netherlands and the Scandinavian. Countries) and the major United Nations multilateral institutions notably the UN Population Fund (UNFPA) and UNICEF. Over the last decades however, North American and European donors have become increasingly reluctant to commit sufficient funds for sexual and reproductive health. Needs are being met financially and in kind by Japan, development banks (such as the World Bank and African and Asian development banks) and other quasi-private or private sources such as the Gates foundation. In addition, notably in response to the AIDS crisis, pharmaceutical companies are offering support through donations of drugs. However, banks and private companies also participate by giving loans. Other agencies involved in AIDS funding include UNESCO, UNDCP, UNDP AND UNAIDS

Family Planning safe motherhood and HIV/AIDS continue to be the three major areas of donor funding. Accurate figures on donor financing remain extremely difficult to find, despite repeated calls for establishment of an international tracking record system. UNFPA estimates suggest a total global budget of \$ 10 billion, while little information is available on funding for HIV/AIDS services, although funding by the World Bank and other development banks is reported to have almost tripled since 1990. Funding for HIV/AIDS now appears to come predominantly from this non-donor source and increasingly from the private sector.

#### **SELF ASSESSMENT EXERCISE**

What is the full meaning of UNFPA?

*Hint ..... See 3.1*

### **3.2 HIV/AIDS Financing in Developing Countries.**

Several studies and reports have estimated the amount spent on HIV/AIDS related activities. Some focused only on expenditure incurred by the public sector, whereas others provided more information on the sources and uses of funds for HIV/AIDS. In the early 1990s, two studies sought to estimate expenditures on HIV/AIDS in Asia, one in Thailand for 1991-92 and the other in Sri Lanka for 1993. The Thailand study highlighted HIV/AIDS expenditures by various sources of funds - the government, the donor community and the private sector. In most cases, records of expenditures on HIV/AIDS are not complete when they are available as there are often no records of pocket expenditures incurred by households, a key indicator of the economic burden of AIDS on families and also expenditures linked to the management of HIV/AIDS related activities and research.

### **3.3 Agencies in Support of HIV/AIDS Control**

Some agencies have been assisting in financing HIV/AIDS programme. Many of the agencies are international and also multi-national and in the fore-front is the United Nations (UN) through UNAIDS – The United Nations response to AIDS.

From 1986, the World Health Organization (WHO) had the lead responsibility on AIDS in the UN, helping countries to set up much-needed national AIDS programmes. But by mid-1990s, it became clear that the relentless spread of HIV, and the epidemics devastating impact on all aspects of human lives and on social and economic development, were creating an emergency that would require a greatly expanded UN effort, nor could any single United Nations organization provide the coordinated level of assistance needed to address the many factors driving the HIV epidemic, or help countries deal with the impact of HIV/AIDS on households, communities and local economies. Greater coordination would be needed to maximize the impact of the UN efforts.

Addressing these challenges head of the UN took an innovative approach in 1996, drawing six organizations together in a joint and co-sponsored programme - the joint UN programme on HIV/AIDS (UNAIDS). The six original co-sponsors - UNICEF, UNDP,

UNFPA, UNESCO, WHO and the World Bank - were joined in April 1999 by UNDCP.

The goal of UNAIDS is to catalyze, strengthen, and orchestrate the unique expertise, resources and networks of influences that each of these organizations offers. Working together through UNAIDS, the co-sponsors expanded their outreach through strategic alliances with other UN agencies, national governments, corporations, media, religious organizations, community-based groups, living with HIV/AIDS and other non-governmental organizations.

### **3.4 The UNAIDS Co- Sponsors**

In developing countries, UNAIDS operates mainly through country-based staff of seven co- sponsors. Meetings are as the host country's UN theme Group on HIV/AIDS, representatives of the co- sponsoring organizations share information, plan and monitor coordinated action between themselves and with other partners and decide on joint financing of major AIDS activities in support of the country's government and other national partners. The principal objectives of the theme Group is to support the host country's efforts to mount an effective and comprehensive response to HIV/AIDS. Working singly, jointly and with the UNAIDS offered countries a broad range of expansive efforts and resources of relevance to the fight against the epidemics.

#### **3.4.1 UNICEF**

The United Nations Children's Fund (UNICEF) mobilizes the moral and material support, governments, organizations and individuals worldwide in a partnership committed to giving children a first call on society's resources in both good times and bad. A decentralized operational agency, UNICEF works with government and NGOs to improve the lives of children, youth and women. The epidemics is having a significant impact on adolescents and adolescence is both a period of increased risk and a window of opportunity to develop the skill, attitudes and behaviour needed to prevent HIV infection in adulthood. UNICEF's priority programme areas in HIV/AIDS include youth health, school AIDS education, communications, assistance to children and families affected by AIDS and the prevention of mother-to-child HIV transmission

#### **3.4.2 UNDP**

The United Nations Development Programme, supports countries in strengthening and expanding their capacity to respond to the HIV/AIDS epidemic. UNDP emphasizes support to initiatives which catalyze community and national mobilization , create a supportive ethical legal and human rights frame work, a gender - sensitive empower people to take charge of their own well-being drawing on local resources and building on local knowledge and values and foster an enabling political, economic and social environment . UNDP is responsible for assisting the secretary –General in strengthening the

resident co-ordinator system through which the UN theme Groups on HIV/AIDS operate.

### **3.4.3 UNFPA**

The United Nations Population Fund (UNFPA) has a mandate to build the knowledge and capacity to respond to needs in population and family planning.

Reproductive health is a major focus of UNFPA support and includes family planning and sexual health, of which HIV prevention is an integral component. In its reproductive health activities, UNFPA gives special attention to adolescents, to information, education and communication, and to the training of service providers. Among other things UNFPA brings in UNAIDS a network of country-level offices which support national reproductive health programmes, its expertise in reproductive health promotion and service delivery with a special focus on the needs of women and its experience in logistics management of contraceptives, including condom.

### **3.4.4 UNDCP**

The United Nations Drug Control Programme ( UNDCP) which became a UNAIDS co- sponsor in April 1999, is responsible for co-ordinating and providing effective leadership for all United Nations Drug control activities. Because HIV spreads through drugs, both via shared injection equipment and as a result of the disinhibiting effects of drugs on sexual behaviour. In this context UNDCP is active in supporting HIV/AIDS prevention programmes and including prevention in its own programmes to reduce the demand for illicit drugs. Youth and high-risk groups are of particular concern.

### **3.4.5 UNESCO**

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is to foster international cooperation in intellectual activities designed to promote human rights to help establish a just and lasting peace, and to further the general welfare of mankind. Thus, the ethical imperative is central to UNESCO's mandate. In its field of competence – education, science, culture and communication – UNESCO can bring the vast network of institutions with which it collaborates into the fight against AIDS.



### 3.4.6 WHO

The World Health organization (WHO) is the directing and co-ordinating authority on international health work. In 1986, WHO established the special programme on AIDS later renamed Global programme on AIDS which was dismantled in 1996 with the creation of UNAIDS. Through WHO's new initiative on HIV/AIDS and sexually transmitted infections (STIs), the organization contributes by providing countries with expertise in areas relevant to the health sector. These areas include strengthening HIV and STI prevention (Particularly for those vulnerable and/or at increased risk); ensuring safe blood supplies; surveillance of HIV/AIDS and STIs; developing health policies and standards; planning of integrated services; caring for people with STIs, HIV or AIDS and evaluating STI/HIV policies and programmes.

### 3.4.7 World Bank

The mandate of the World Bank is to alleviate poverty and improve quality of life. HIV/AIDS entails an enormous loss of human and economic resources and poses a substantial threat to the economic and social growth of many nations in the developing world. Between 1986 and early 1999, the bank disbursed over US \$ 750 million for more than 75 HIV/AIDS projects worldwide. Most of these resources were provided on highly concessional terms through the International Development Association.

#### SELF ASSESSMENT EXERCISE

List Five (5) agencies that fund AIDS

- |            |           |
|------------|-----------|
| i. _____   | ii. _____ |
| iii. _____ | iv. _____ |
| v. _____   |           |

*Hint: See 3.41 to 3.47*

## 4.0 CONCLUSION

There is urgent need for financial support in activities so as to put the scourge into permanent control before it makes the whole human race go into extinction due to its devastation.

A lot has been done by these agencies including non-governmental organizations and individuals but it seems we are still far away from the Promised Land. There is therefore the need for effective collaboration and proper coordination to avoid duplication and repetition of some and similar

effort so as to quicken both the race and the pace toward total control of the disease.

## **5.0 SUMMARY**

- A lot of governments including Britain, United States, Germany, Netherlands and the Scandinavian are important donor for HIV / AIDS activities
- United Nations agencies such as UNAIDS, UNESCO, UNDP, UNDCP, UNICEF and other multinational organizations like WHO also fund HIV/AIDS PROGRAMMES
- The World Bank between 1986 and 1999 disbursed over US\$750million for more than 75 HIV/AIDS projects worldwide.
- Non- governmental organizations, communities and individuals have not been left out in the race for AIDS control.

## **6.0 TUTOR MARKS ASSIGNMENT**

List and discuss the roles of five multinational agencies in HIV /AIDS FUNDING

## **7.0 REFERENCES/FURTHER READINGS**

Adeyi, O; Kanki, P.J; Odutolo; O and Idoko, J.A (2006) AIDS in Nigeria: A Nation on the threshold. USA. Harvard University Press

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## **UNIT 5      DEVELOPMENT ASSISTANCE FOR HIV/AIDS CAPACITY BUILDING IN NIGERIA**

### **CONTENTS**

- I.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Rationale for Development Assistance to Support  
Capacity Building.
  - 3.2    Types of development assistance required
    - 3.2.1    Financial
    - 3.2.2    Organizational and Individual Capacity
    - 3.3.3    Current      Development      Assistance
- Building Response to HIV/AIDS
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    Reference/Further Readings

### **1.0    INTRODUCTION**

In their quest to mount effective responses to the HIV epidemic, countries often face the challenge of ensuring that development assistance supports the capacity of local institutions. Development assistance in this context refers to the transfer and use of resources to achieve and sustain effective programmes that offer HIV prevention, treatment, or care that mitigate the impact of the epidemic on families, communities, and sector of the economy. The scope of this definition includes institutional development, capacity utilization, improvement of the country's knowledge base for HIV/AIDS control, official development assistance, and development assistance for health.

- (1)    “Institutional capacity” refers to the organized skills, systems, and components required to mount effective HIV/AIDS control initiatives in Nigeria.

For Years a global debate has raged about the conditions under which development assistance can be effective. Considerable

- evidence has accrued that development assistance works best in the presence of strong policies and effective institutions
- (2) Yet development assistance can also help to nurture effective institutions. A more recent study suggest that development assistance engenders success in countries with weaker policy environments: the author found that higher than average short-impact aid to sub-Saharan African raise per capital growth rate by half a percentage point over the growth that average aid flows would have achieved.
  - (3) The basic result depends on neither the recipient's level of income nor the quality of its institution and policies; the authors found that short – impact aids causes growth on average, regardless of those characteristics. The authors also found evidence that the impact on growth tends to be greater in countries with stronger institutions or longer life expectancies. This debate contains a circular element, in that development assistance may strengthen institutional capacity, yet may not be forthcoming in the absence of a certain level of institutional capacity. The Future of the market for development assistance continues to be a matter of intense discussion.
  - (4) Data on health expenditures and aid dependency reveal that Nigeria spends less on health than is average low –income countries. Nigeria also receives less foreign aid than is Average for low- income countries, both in per capita terms and as a percentage of gross national income. (5.) (see table 21-1)

A full understanding of development assistance and sustainability in Nigeria would require analyses of domestic objectives, resource commitments, the structure and function of institutions, relationships among local and international institutions, past and current resource needs, allocations and expenditures and projections of future resource requirements. Unfortunately, the lack of accurate and reliable data on yearly allocations to—and expenditures on – HIV/AIDS control in Nigeria and the difficulty in obtaining data in a timely fashion prohibit a quantitative analysis of HIV/AIDS financing in Nigeria in this chapter. We place emphasis, therefore, on the qualitative aspects of development assistance and sustainability. The absence of valid quantitative data limit the discussion to institutional and organizations aspects. Yet this limitation itself helps to identify the critical need for government to ensure that information on the main sources and quantities of public expenditure and development assistance for HIV/AIDS is available in the public domain.

## **2.0 OBJECTIVES**

On completing this unit, you should be able to;

- Discuss the issue of HIV/AIDS development assistance for capacity building in Nigeria.
- Mention the type of assistance required.
- Explain the rationale behind the choice of assistance and training needs.
- Review the journey so far on HIV/AIDS capacity building.

## **3.0 MAIN CONTENT**

### **3.1 The Rationale for Development Assistance to Support Capacity Building.**

Despite the president's strong commitment and leadership in the national response to HIV/AIDS, one of the country's constraints has been its limited organized capacity to address the epidemic. This limitation has been recognized for both the super sectoral coordination functions and the health sector. For example, in addition to funding shortfalls at the national AIDS and STDs control programme (NASCP) of the Federal Ministry of Health (FMOH), the "managerial organizational, logistic, and technical capacities within NASCP are inadequate to coordinate so many players and programme in a country's of this size and complexity". The situation analysis further noted a "clear and urgent need for institutional capacity strengthening as a pre- requisite to ensuring leadership of the health sector response "THE Rationale for external development assistance in HIV/AIDS control is multiple. The immediate purpose would be to support locally led efforts to control the epidemics. In the short terms, since HIV spreads across national boundaries, it has the potentials for negative externalities beyond the confines of a particular country. In this medium –to long-term, not only would an uncontrolled epidemic have a large and negative impact on the Nigeria economy, but it could also reduce the inter-generational transfer of human and intellectual capital. With Nigeria's share of the regional population and economic output so significant, an unraveling of the Nigeria economy and social structure could have a negative impact on much of West Africa, including its security. Finally, achieving one of the targets of the Millennium development Goals on HIV/AIDS –to have halted and begun to reverse the spread of HIV by 2015-would be impossible in

West Africa without successful efforts in Nigeria. The HIV epidemic also has direct and indirect impact on many of the other Millennium Development Goals.

## **3.2 The Types of Development Assistance Required**

### **3.2.1 Financial**

The level of development assistance per year to Nigeria is unknown. NACA, the body responsible for coordination, tried to develop many documentation that provide the full picture of development assistance for HIV/AIDS control in Nigeria but more still needs to be done in order to get the true statistics. This is due in part to difficulties the committee encountered in collecting data from some development assistance sources.

Determining the amount of financial resources allocated to HIV/AIDS is complex because of its multi-sectoral nature. For example, resources allocated to NACA and the SACAs, or reported by these committees, are not a good proxy for the total allocation, as most resources are allocated directly to the implementing agencies. Therefore resource allocated and used by ministries, NGOs and private agencies often go through neither NACA nor the SACAs, and these organizations rarely receive full information about the allocations. At the same time it seems unnecessary to spend a great deal of public sector resource on coordination of private sector effort if those private sector efforts are effective and working. In addition, the amount of development assistance from the international community is difficult to estimate due partly to the lack of coordination of information and partly to the large discrepancy between planned and allocated budgets. This is particularly true of two of the largest international HIV/AIDS funders – the World Bank and the Global Fund to fight AIDS, Tuberculosis and Malaria – in which the actual allocation per year is less than 20% of that planned. In addition, the resource the private sector has made available to HIV/AIDS are unknown and largely uncoordinated. The same is true for the financing from private individuals, foundations, charities, and faith-based organizations. Despite the lack of data, it seems likely that until recent years, the government has underfunded the country's HIV/AIDS control effort. In a 2003 survey 78% of the SACAs reported that their lack of financial resources had prevented them from implementing their work-plans. Most had long since exhausted the 2million naira that NACA had sent in 2002. While this allocation was

well intended it led to the impression in some states that the level HIV/AIDS response- included the SACAs- would be federally funded. It has taken some time for the states to realize that they must take the HIV epidemics seriously by allocating adequate resources to state-led activities.

At the federal level, NACA has received government resources. The FMOH also has received substantial federal funding to implement its antiretroviral programme (850 million naira in 2003 and 2004) resulting in one of Africa's largest publicly funded antiretroviral programs, with approximately 14,000 people on treatment.

This programme has been clouded, however, by the slow release of government funds and the oversubscription for treatment. Overall, inadequate planning and management resulted in interruptions of treatment for many patients at the end of 2003.

The picture is mixed at the state level. Some state Governors have begun to take the epidemic seriously, allocating resources to control efforts. After a slow start for example 16 states have now committed counterpart funding of US\$100,000 for the World Bank assisted HIV/AIDS project. Most of these financial pledges followed the elections of new state governors in 2003 which may signal a new commitment to the epidemic in addition some states have dedicated additional resources to procure antiretrovirals.

At the local level the lack of funds is cited as a critical reason activities have been hampered not just for HIV/AIDS services but for all services so the local government level is considered the main sources of service delivery

Another crucial funding issue has been the need for greater information collation and transparency of allocation and expenditure enhanced information will enable better planning and more directed and focused support. One important development in 2005 was the creation of a single work plan construct for NACA and the SACAs are encouraging all partner agencies to declare their funding commitment and incorporate their activities into the work plan. For the first time NACA and the states may been able to assemble a comprehensive picture of the activities being undertaken within their constituencies and therefore been able to coordinate efforts of the Nigeria government.

### **3.2.2 Organization and Individual Capacity Building**

Probably as important as direct financial assistance, the national, state, and local government HIV/AIDS response requires development assistance in term of capacity building of individuals and institutions. Capacity development needs to be considered in broad terms, including ensuring the existence of function, organization, structure, physical infrastructure and functional system. The skill areas required to tackle the full complexity of the HIV/AIDS epidemic also are extensive, from basic science to biomedical and clinical research, and from policy development to management and service delivery.

### **3.3 Current Development Assistance Response to HIV/AIDS**

The major multilateral source of external development assistance include the World Bank (through a credit of US\$90.3 Million) and the Global Fund (through grants of US\$41.7 Million to scale up the government's Antiretroviral programme. Other organisations that are receiving assistant include National, State and local AIDS Control Agencies as well as civil society organisations (CSOs) and some community based organizations (CBO).

#### **SELF ASSESSMENT EXERCISE**

List 5 Organizations that are currently enjoying development assistance on HIV/AIDS.

- |     |     |
|-----|-----|
| (1) | (2) |
| (3) | (4) |

*Hint – see 3.3*

### **4.0 CONCLUSION**

In recent years, Nigeria has developed a number of HIV/AIDS coordinating groups that represent the interests of various key constituencies. Nigeria has an active UN Expanded Theme Group, Established in 1996, which meets bimonthly and represents development partners, government agencies and CSOs, among the many groups and networks. A review of HEAP began at the end of 2004, with the intention of developing a new National HIV/AIDS strategic Framework for 2005-2009. The strategic framework was



developed in partnership with many stakeholders in line with the internationally endorsed approach of “The Three Ones” (One national strategic framework, one national coordination body, and one monitoring and evaluation system), development agencies reached consensus about the need to work on this single national strategic plan.

The strategic framework is set within context of the National Economic Empowerment Development Strategy (NEEDS), which is Nigeria’s framework for poverty reduction. NEEDS set the stage for coordination of strategies toward the achievement of Nigeria’s long-term vision for economic development. States have been developing their own strategies, known as SEEDS, and HIV/AIDS has been mainstreamed into NEEDS and SEEDS.

## **5.0 SUMMARY**

NACA was envisioned as a multisectoral mechanism that could coordinate the country’s HIV/AIDS response rather as an implementing agency. The committee includes representatives from the public sector, the private sector, nongovernmental organization (NGOs), faith based organizations, and networks of people living with HIV/AIDS. NACA members meet irregularly; the committee also has a secretariat that serves as its technical and management arm.

A credit from the World Bank provided funds to strengthen both the NACA secretariat and a National project Team (7). While this was useful in view of the complexity of programme coordination and management, it has become clear that two parallel structures were being developed. Confusion arose about roles and responsibilities, as well as the appropriateness of the structure and system in relation to needs. Under a consultancy financed by the Department for International Development (DFID), the coordinating structures of the national response were assessed, and a restructuring plan was formulated together, ensuring better clarity in job descriptions, terms of reference, and “measurable deliverables” for each staff member. The restructuring plan requires new staff and changes in the function of some of the existing staff.

## **6.0 TUTOR MARKED ASSIGNMENT**

Briefly review development assistance for HIV/AIDS capacity building in Nigeria

## **7.0 REFERENCES/FURTHER READINGS**

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## **MODULE 3**

Unit 1	Research and HIV/AIDS
Unit 2	Quests for an HIV Vaccine
Unit 3	Aids: The Impact of Other Sexually Transmitted Diseases
Unit 4	Prevention, Treatment and Control of the HIV/AIDS Scourge I
Unit 5	Prevention, Treatment and Control of HIV/AIDS Scourge II

### **UNIT 1 RESEARCH AND HIV/AIDS**

#### **CONTENTS**

1.0	Introduction
2.0	Objectives
3.0	Main Contents
3.1	HIV/AIDS global research efforts
3.2	Research effort on the HIV epidemic in Nigeria
3.3	Research capacities on the HIV epidemic in Nigeria
3.3.1	Initial activities (1986 – 1991)
3.3.2	Subsequent and follow – up activities (1992 - 1997)
3.3.3	Recent and current efforts (1998 to Date)
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Readings

#### **1.0 INTRODUCTION**

Research according to Oxford mini reference Dictionary simply means to study and investigate so as to discover new facts. In actual fact, a lot of research activities are going on, as follow ups to previous efforts, alongside new ones in both social and scientific aspects of HIV/AIDS. This is part of the global initiatives aimed at finding lasting solutions to the HIV/AIDS pandemic, as it has been the concern of international organizations and agencies to urgently and effectively put the AIDS scourge under permanent control

Globally, a lot of research activities relating to HIV/AIDS control are on-going and these include the following among others

- HIV transmission and condom use
- AIDS and nutrition
- HIV/AIDS counseling and education
- HIV/AIDS vaccine search
- AIDS and combination therapies
- AIDS and education and awareness
- Impact of HIV/AIDS on breastfeeding
- Poverty and AIDS
- HIV/AIDS prevalence and incidence
- Capacity building for AIDS control
- HIV/AIDS: mother to child transmission

## **2.0 OBJECTIVES**

At the end of this unit you will be able to:

- Understand clearly what research is all about
- Know how much research activities are in place concerning HIV/AIDS
- Appreciate the various efforts of researchers in all parts of the world particularly Nigeria, to curb AIDS scourge

## **3.0 MAIN CONTENT**

### **3.1 HIV/AIDS Global Research Efforts**

Fundamental to our understanding of AIDS were the early effort of biomedical research. At the early stage of the epidemic the need to identify the aetiologic agent to better understand the epidemiology of the disease was urgent. Among the suspected agents were cytomegalo virus because of its association with immunosuppressant. Epstein Barr virus because of its known ability to populate lymphoid tissues and hepatitis B virus because it was transmitted by blood and sex.

In 1981, Mountaineer and his colleagues first reported the association of this clinical syndrome with a candidate retrovirus. In 1984, Montagnier and Gallo provided conclusive virology and epidemiologic evidence that the virus now known as human immunodeficiency virus (HIV) was the

causative agent of AIDS. It should be noted that decades of earlier researches in animal retrovirology were critical to the ability of the biomedical community to identify the aetiologic agent of AIDS so quickly. Essex and colleagues had earlier and first proposal that a human retrovirus could be the etiologic agent of AIDS it was soon established that HIV belongs to the lentivirus subfamily of retrovirus known for their protracted cause of infection and latency. In 1986, a new type of HIV was isolated from people in West Africa. Subsequent studies found this type to be virulent than the first and the two viruses differed in 60% of their genome sequence. The earlier identified virus was designated HIV I while the West African virus was designated HIV 2

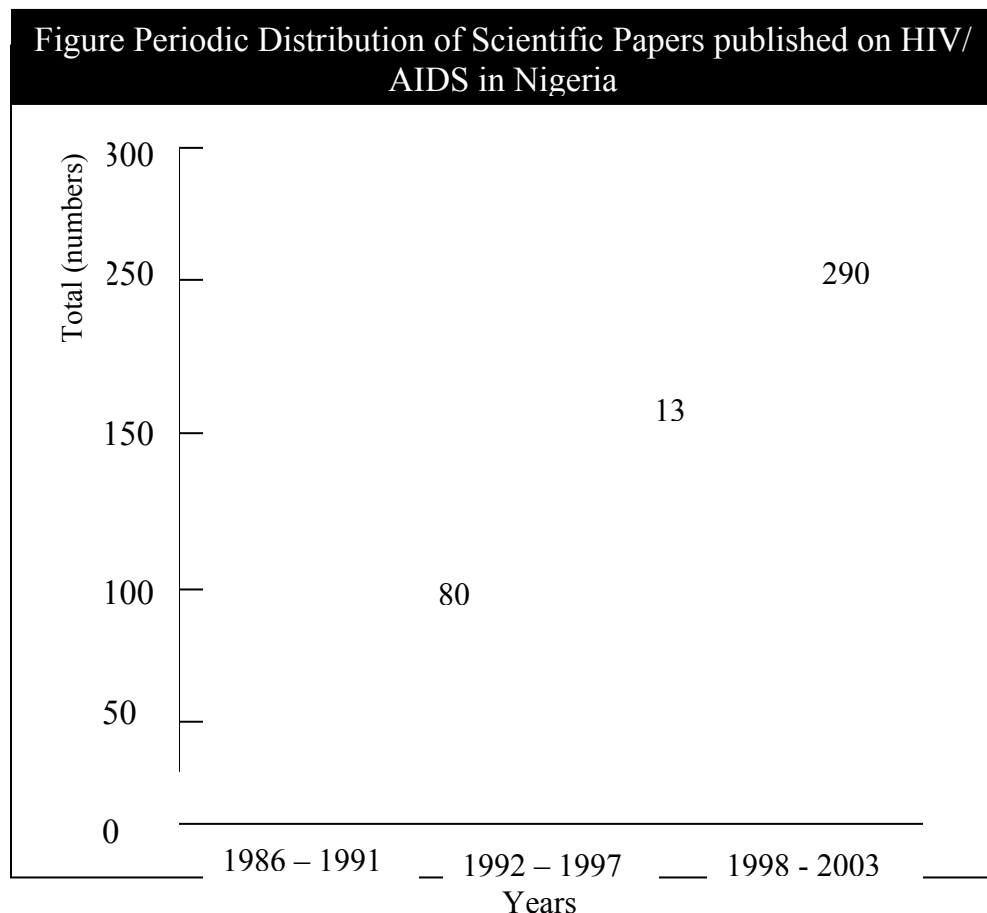
Upon identification of HIV, Scientists – through intensive efforts in the broad area of basic, applied and operational research – made major strides in the basic understanding and therapeutic management of all stages and manifestations of HIV infection. Basic research led to a full description of the biological existence of several subtypes of HIV 1 and HIV 2 distributed within different geographic areas. Through the efforts, applied and operational research, information generated from basic research allowed investigators to develop laboratory techniques – both antibody and antigen based – for diagnosing infection, devising techniques for monitoring disease progression and responses to intervention developing antiretrovirals (ARVs). Thus, the efforts of biomedical and social science research have not only contributed significantly to the knowledge of HIV/AIDS but have also helped investigators to develop effective strategies for preventing transmission of the virus and treating those already infected.

### **3.2 Research Efforts on the HIV Epidemic in Nigeria**

In the early 1980s, after the first AIDS cases were reported in the United States and later in other countries there was high level of uncertainty and anxiety about whether cases of HIV infection were present in Nigerian communities. The wide response was that of denial; HIV infection was non-existent in the country. Thus, the earliest efforts on the HIV epidemic were focused simply on establishing whether there were HIV/AIDS cases in the country.

Subsequently, surveillance systems were put in place to track cases of the infection in the country. The first case of full blown AIDS was identified in a 16 years old girl by a team of scientists at the Nigerian Institute of Medical Research in Lagos. This case was reported at the International AIDS Conference in Paris in 1986 subsequently, a few cases of HIV seropositive but asymptomatic individuals were identified, as well as a few

cases of AIDS related complex. These early reports were clouded by sensationalism, panic, and politics, as the level of available information on HIV/AIDS during this period was low. In a study carried out among students in secondary and tertiary institution in Lagos 98.5% of the respondents had heard about AIDS, although 85% did not know how infection was transmitted and 74% viewed AIDS as a disease of foreigners.



*Source Idigbe E.O. Harry To Ekong E E Audu RA. Musa EO. Nigeria Contributions to Regional and Global Meeting on HIV/AIDS STLs. 1986 -2003 Lagos Niyi Faniran Publishers. 2003*

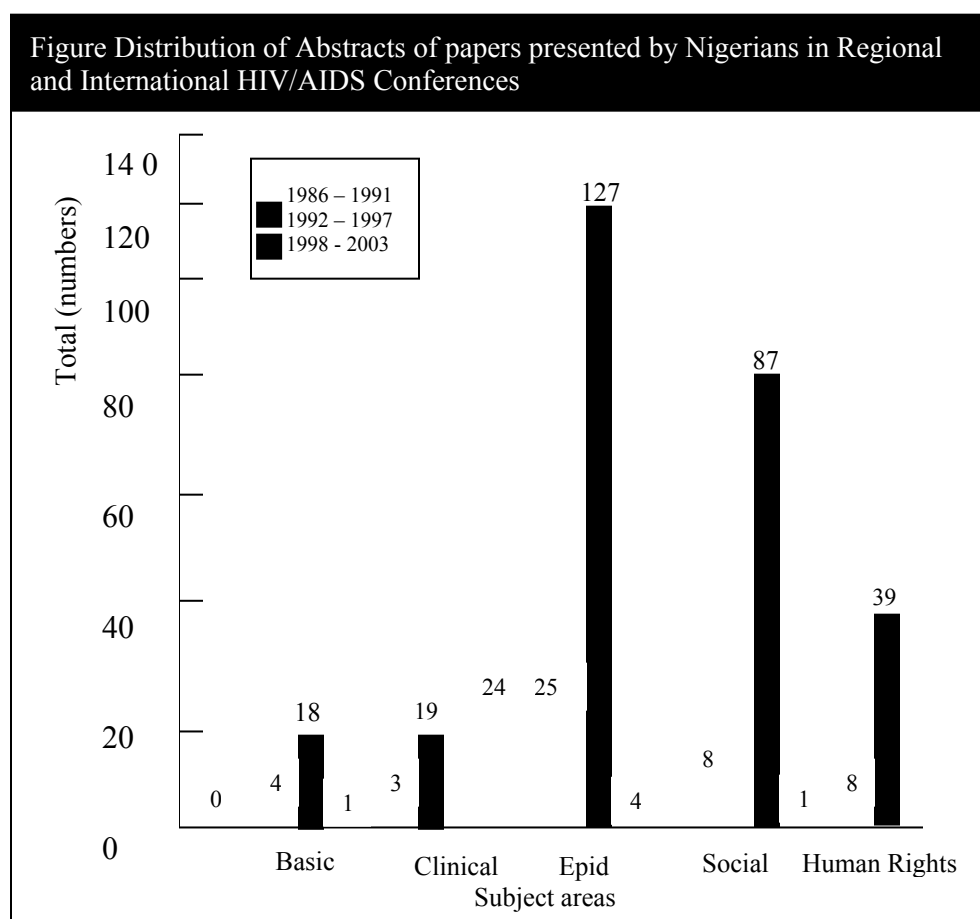
Despite this, the few reported cases of AIDS foretold the urgent need for surveillance in the various populations and communities in the country. The earliest on efforts on systematic research on HIV/AIDS in Nigeria were based primarily on descriptive epidemiology. As the epidemic matured, however, the tempo and scope of the research activities progressively increased to embrace broad area of basic clinical, and social science as well as human rights. Legal issue, advocacy, data from several studies on the evaluation of research inputs on HIV/AIDS in Nigeria indicated that the pattern of research efforts in the country was significantly influenced by the

various stages of the evolution of the epidemic. This initial research focused on epidemiology and prevention, with little attention paid to the social and human right issue and only minimal effort on the basic biomedical, and clinical science. As the number of HIV infected people grew, however, the control efforts expanded from prevention to the provision of a continuum of care and support strategies. This shift equally stimulated efforts on HIV related basic, clinical and social science research.

In 2000, the government developed a bibliographic database of the HIV in Nigeria. The study, which covered all 36 states and the Federal Capital Territory, focused on the retrieval and collation of all scientifically published and documented data on HIV/AIDS in the country between 1986 and 1999. a total of 506 publications were eventually retrieved from various libraries, educational institutions, research institutes, private sector establishment, and NGOs. Eighty, or 16%, of these publications were published between 1986 and 1991, 136 (27%) between 1992 and 1997, and 290 (57%) between 1998 and 2003 (Figure). A breakdown of these publications based on subject area showed that 26 (5%) were in the area of basic science; 31 (6%) on human right, politics, and advocacy; 94 (18%) on clinical science; 75 (35%) on social science; and 180 (36%) on epidemiology and prevention.

In 2003 another project developed a compendium of all abstracts of scientific papers presented by Nigerians in international conferences on HIV/AIDS. The compendium comprised 356 abstracts presented in Nigerians in 17 regional and global conferences between 1987 and 2003. The abstracts were grouped into subject areas and period of publication. The data obtained from the project clearly indicated that the number of scientific papers presented by Nigerians in these conferences increased progressively between 1986 and 2003 (Figure). Of the 366 abstracts, 8% were presented between 1986 and 1991, 12% between 1992 and 1997, and 80% between 1998 and 2003. The overall data indicated a considerable increase in research efforts on the HIV epidemic in the country between 1998 and 2003. The distribution of the abstracts based on the subject areas showed that 22 (6%) focused on basic science, 23 (6%) on clinical sciences, 45 (13%) on human right and advocacy, 99 (27%) on social sciences, and 176 (48%) on epidemiology and presentation (Figure). Although these data did not differ much from the findings of the earlier study information from the later study showed that between 1986 and 1991, no paper from the social science. Between 1998 and 2003, however, the number of paper presented had risen to 18, 19, 87, and 39, respectively, in basic science, clinical science, social science, and human rights.

Specific data presented in these abstracts indicated that research efforts between 1986 and 1991 were geared toward establishing the magnitude, dynamics, and trends of the epidemic within various populations, as well as developing better strategies for the prevention of new infections. With the number of cases increasing and many patients beginning to manifest with opportunistic infections, research efforts were enhanced between 1992 and 1997, to generate more data for a better understanding of the pathogenesis of the infection, the profile of associated opportunistic infections.



Source: Idigbe EO. Harry To, Ekong EE. Audu RA, Musa AZ, Funsho EO. Eds, *Nigerian Contributions to Regional and Global Meetings on HIV/AIDS/STIS, 1986-2003*, Lagos: Niyi faniran publishers, 2003  
HIV/AIDS research evolved over time period 1986 – 1991; 1992 – 1997; and 1998 – 2004.

### 3.3 Research Capacities on the HIV Epidemic in Nigeria

#### 3.3.1 Initial Activities (1986 – 1991)



At the early part of this period, Nigeria's capacity for HIV research was minimal. Soon after the first AIDS case was diagnosed, the government responded by establishing the National Experts Advisory Committee on AIDS and the National AIDS and STDs Control programme (NASCP), both within the Federal Ministry of Health. These bodies pioneered the initial control strategies and research efforts on HIV/AIDS in Nigeria.

The major preoccupation at the stage was surveillance for the detection of infected cases. In developed countries, research efforts had contributed considerably to the generation of data on the clinical signs and symptoms associated with HIV infection, as well as the major modes of transmission of the infection. With some enhanced knowledge and awareness of the modes of transmission of the infection the early national response focused primarily on prevention of transmission. The surveillance efforts at this period focused on detection of people already infected, particularly those considered high risk, such as sex workers, long distance truck drivers and migrant workers.

The World Health Organization (WHO) and the U.S. Center for Disease Control and Prevention (CDC) had developed clinical surveillance and passive AIDS case definition systems, in which clinicians observed patients prospectively presenting at health facilities or retrospectively from hospital records. The Health personnel were encouraged to notify the federal and state health ministries of diagnosed and recorded cases. This system failed to capture the true picture of the epidemic, however, for several reasons: the long incubation of the virus meant that infected people were often asymptomatic; most health facilities had poor records because of underreporting, delayed reporting, or no reporting; HIV infected people had inadequate access to health facilities; and, most importantly, health care providers tended to have little knowledge of the major and minor signs associated with AIDS. This surveillance system, used in Nigeria between 1986 and 1990, recorded only 52,962 AIDS cases, while the actual cumulative number of cases was estimated to be 850,000. Thus, the country's human and infrastructural capacities to implement this surveillance system were inadequate at the time. When serologic tests for screening and confirming HIV specific antibodies became available, however, HIV surveillance improved dramatically. These tests allowed investigators to obtain direct laboratory diagnoses of HIV infection. Between 1984 and 1988, The Nigerian Institute of Medical Research in Lagos developed the initial capacity to use these serologic tests, which were based on the Enzyme Linked Immunosorbent Assay (ELISA) and were conducted with equipment donated by Abbott Laboratories, USA.. Confirmatory test kits were based on the Western blot; at the time, the tests

were performed with equipment from the Kenyan Medical Research Institute. It was through these initial efforts that the country's first 'true' AIDS case was diagnosed and reported.

In 1987, the WHO, working in collaboration with NACA and the NASCP, established nine additional HIV antibody screening centers within health institutions. Six were located in the southern part of the country: University College Hospital in Ibadan; the University Teaching Hospital in Ife; the University of Nigeria Teaching Hospital in Enugu; the University Teaching Hospital in Calabar; the University Teaching Hospital in Benin City; and the Federal Vaccine production Laboratory in Lagos. Three additional screening centers were in the north: the University of Maiduguri Teaching Hospital; the Ahmadu Bello University Teaching Hospital in Zaria; and the Jos University Teaching Hospital. From these centers, limited HIV sero prevalence surveys were carried out among specific groups, including sex workers, blood donors, patients with sexually transmitted infections (STIs), and pregnant women. Samples screened positive in these nine centers were sent to the University College Hospital in Ibadan and the University of Maiduguri Teaching Hospital for confirmation. At the time, these were the only two centres in the entire country with the capacity to perform the Western blot, the necessary confirmatory test to prove HIV infection.

In 1988, the WHO established an additional 12 screening centres across the country, bringing the total number to 22. Seven of these new centres were established in the north (Yola, Sokoto, Kano, Kaduna, Makurdi, Minna, and Katsina), while five were established in the south (Lagos, Port Harcourt, Owerri, Uyo, and Ilorin). The number of centers with the capacity to perform Western blot confirmatory tests also increased, from two to five. During this period, screening for HIV infection was anonymous and unlinked. Some level of human capacity for research was developed within this period as laboratory staff members were trained on the laboratory screening and confirmatory tests for HIV serostatus. Although the only major tool available for clinical and biomedical research at the time was HIV serology, several scientists used this limited capacity to carry out a few research studies. Most of these studies sought to estimate seroprevalence rates in various groups, especially populations engaged in high risk behaviours. Some of these early studies, although based essentially on serologic tests generated important data on the epidemiology of HIV/AIDS in Nigeria. For instance, HIV seroprevalence rates of 0.7% to 18% were reported for blood donors; 29% to 45% among sex workers; 0.2% to 1.7% among pregnant women; 0.3% to 1.7% among STI clinic patients; and 2.0% to 4.0% among tuberculosis patients. Some of these studies also reported HIV 2 infection cases within these groups.

During this period, social science research increased as well, particularly in the development of strategies to prevent HIV transmission in the general population. Several research efforts were based on questionnaires designed to assess the knowledge, attitudes, practices, and beliefs among different population groups. Better strategies for advocacy and increasing awareness through health education – based mainly on various media of information, education, and communication – also kept evolving within this period. Research into preventive strategies hinged on three major modes of transmission and included promotion of protected sex, screening of blood before transfusion, and discouraging the use of contaminated sharp objects. Although the capacity for social research on HIV infection was minimal, most of the studies yielded data that gave insight into possible social factors driving the epidemic, including local traditional and cultural practices, poverty, and low condom usage. This information facilitated the development of better prevention strategies targeting the biological and social factors fueling the epidemic at the time.

Support for HIV programmes during this early period was essentially government-driven. The latter period, however, witnessed the coming on board of some international donor and development agencies, NGOs, and several other private sector organizations, including the United Nations agencies, the WHO, the Department for International Development, the Canadian International Development Agency, the Japan International Cooperation Agency, the U.S. Agency for International Development (USAID), the Ford Foundation, the CDC, the U.S. National Institutes of Health, and the Institute Pasteur. The collaborative efforts of these various organizations contributed immensely to the development of the initial human and infrastructural capacities for research on HIV infection in the country.

### **3.2.2 Subsequent and Follow-up Activities (1992 - 1997)**

From 1992 to 1997, biomedical and social research in the developed world added considerably to our understanding of various aspects of the global epidemiology, as well the socioeconomic factors fueling the epidemic in different geographic locations. Some of the findings translated into the development and production of cheaper, efficient, early to use, and rapid testing kits for HIV infection. Investigators also described the existence of multiple circulating subtypes of HIV 1 and HIV 2, the natural history of HIV infection, and the profile of opportunistic diseases associated with HIV infection in different parts of the world. Moreover, issues of stigmatization,

discrimination, and ethical considerations for people living with the virus began to emerge.

These global data greatly influenced Nigeria's capacity for HIV research between 1992 and 1997. More people were diagnosed with HIV, and the reported number of infected people rose. Serologic data strongly suggested a progressive increase in transmission and the emergence of new cases. By the end of 1993 an estimated 800,000 adults were living with the virus. In 1997, the number of adults living with the virus was estimated at .9 Million, an increase of more than 50%. This increased support remarkably enhanced the level of human and infrastructural capacities for basic and applied research on HIV/AIDS.

Issue of pre and post test counseling for HIV tests also emerged during this period. People started giving informed consent to be tested, which stimulated clinical research, as infected patents could be directly identified and followed up both clinically and biologically through laboratory tests.

Several research efforts centered on more in-depth laboratory studies on the epidemiology of the infection in various populations, identification of biological parameters for diagnosis, and the array of opportunistic infections associated with HIV infection also emerged. Levels of co-infection with HIV and tuberculosis were documented at 7% to 15%. The involvement of typical mycobacteria strain and fungal agents including histoplasma, Cryptococcus, and aspergillus – in HIV associated respiratory diseases also was reported. Data from some of the studies showed that the prevalence of HIV and tuberculosis was much higher among prison inmates than among the general population.

Because the human and infrastructural capacities for HIV research were still developing, Nigeria scientists conducted most of their sophisticated and cutting-edge HIV research in conjunction with institutions in developed countries. Through this collaboration, researchers were able to establish the national prevalence of HIV 2 and identify the various subtypes of HIV 1 and HIV 2 circulating in Nigeria. Working with laboratories in the United States, Britain, Germany, and France, Nigeria researchers established the demographic characteristics of retroviral infection – including HIV 1, HIV 2, and human T cell lymphotropic virus I (HTLVI) – among female sex workers and isolated and characterized a new variant, classified is a variant of HIV I subtype A (56-58), now known as CRF02 AG.

The WHO, introduced the sentinel surveillance system to monitor the dynamics of infection in various countries. The sentinel groups included,

those with tuberculosis and STIs; those whose behaviour put them at higher risk of HIV infection, such as sex workers, migrant workers, and long distance truck drivers; and antenatal clinic attendees, who were considered repetitive of the general population.

Nigeria adopted the sentinel surveillance survey in 1991 to serve as an active system to complement data generated from the passive AIDS case reporting system in use since 1986. Investigators used the sentinel surveillance system to estimate and monitor the magnitude and trend of the infection in various groups over time. The median seroprevalence rates from antenatal attendees were extrapolated to estimate national rates in the general adult population; those aged 15 to 49 years. Six anonymous, unlinked, and confidential seroprevalence surveys among antenatal clinic attendees were carried out at the national level between 1991 and 2003. Based on these studies, the estimated national HIV seroprevalence rates among the adult population showed a progressive increase from 1.8% in 1991 to 5.4% in 1999, 5.8% in 2001, and a slight drop to 5.0% in 2003.

These surveillance data enhanced efforts at developing newer preventive strategic based on sexual, behavioural, and cultural practices. Within this period, researchers began to address gender, as well as the social and demographic status of people living with HIV/AIDS. Health education and awareness programmes on HIV increased and were targeted toward various strata of the Nigerian society. Several seminar programmes on HIV infection and its prevention strategies were organized for public and private sector organizations as well as the general population. Various print media published information on HIV prevention and broadcast media aired reports as well. Billboards on HIV were introduced in different strategic locations across the country. Research efforts and strategies for prompt management of opportunistic infection started to emerge.

At the same time, researchers in developed countries analyzed the genome of the virus, identified biologic markers to track the natural progression of the infection, explored vaccine issue, developed ARVs, and initiated small treatment trials for the clinical management of HIV infection as well as for various opportunistic infections. These researchers also made progress in developing more sensitive diagnostic techniques based on detection of HIV antigens.

Despite the establishment of laboratories with the capacity to detect HIV infection, Nigeria human and infrastructural resource was not advanced enough to allow molecular biology studies. The newer molecular biology and immunologic techniques required highly trained personnel and sophisticated equipment that was too expensive for resource poor countries,

including Nigeria. At the time, no laboratory in the country had the capacity to conduct the tests needed to monitor the progression of HIV infection, including those aimed at determining viral load and CD4 + Cell counts. This situation significantly diminished Nigeria's overall research capacity.

### **3.2.3 Recent and Current Efforts (1998 – Date)**

From 1997 to 2004, the level of information on the global HIV/AIDS pandemic rose tremendously, enhancing the efforts of basic, applied, and operational research on the HIV epidemic worldwide. In Nigeria, this period witnessed a significant development of human resources and infrastructural facilities for HIV research. HIV screening and confirmatory tests became available in nearly every part of the country. Several innovations also enhanced the capacities for improved and sustainable prevention strategic, counseling, and testing, as well as for hospital, home, and community based care for people living with the virus. Issues of the human rights of people living HIV/AIDS also attracted attention. Several international agencies provided financial and technical support for establishing new laboratories and upgrading existing ones to enhance their capacities for research. Notable among these agencies were the WHO, UNAIDS, UNICEF, the United Nations Population Fund, the Canadian International Development Agency, the Department for International Development, USAID, the Ford Foundation, the Bill & Melinda Gates Foundation, the John D. and Catherine T. MacArthur Foundation, and the David and Lucile Packard Foundation. These organizations not only helped established laboratories, but they also provided funds and technical support for research in such other areas as social science and related sciences.

The human capacity development for HIV research also grew considerably during the period. Several international organizations and NGOs developed modules for training health care providers. Moreover, critical mass of clinical and biomedical scientists were trained at both the national and international levels. The output research within this period was significant, as investigators generated important in country data. In 2001, the Ford Foundation established the first national reference laboratory with a full capacity for HIV research at the Nigerian Institute of Medical Research. This laboratory became the first in the country with facilities for estimating viral load and CD4+cell counts based on automated techniques. Since then, other organizations, most notably APIN and the USAID have established HIV research laboratories in several other centers. APIN established laboratory facilities at teaching hospitals in Lagos, Ibadan, Jos, and Maiduguri, as well as at the Military Hospital in Lagos; it also enhanced facilities at the Nigerian institute of Medical Research in Yaba, Lagos.

More recently, the USAID established laboratory facilities at the National Hospital in Abuja and the teaching hospitals in Benin City, Nnewi, Port Harcourt, and Kano.

Most of these centers have trained personnel for determining CD4+cell counts as well as other immunologic, haematology, and clinical parameters. With these facilities now equipped, staffed, and functional, scientists have been able to conduct meaningful basic, applied, and operational research on various aspects of HIV/AIDS, generating significant information on the epidemic in Nigeria.

In 2000, the WHO advocated adoption of the second generation surveillance system, which offers behavioural surveillance surveys alongside sentinel surveillance surveys. With the support of such organizations as family Health international, the Society for Family Health, and APIN, Nigerian researchers were able to conduct several behavioural science studies at the national level until 2003, however, it was not possible to carry out the behavioural surveys alongside the sentinel surveys. It is hoped that this capacity will be developed in the near future to implement the second generation surveillance system take off more effectively.

Globally, this period also witnessed a major breakthrough in the clinical management of HIV infection; clinical trials confirmed that ARVs reduced mortality and morbidity among infected people, and several developed countries adopted ARVs in the clinical management of HIV. At first, the ARVs were not readily available in developing countries because of their high costs and the lack of other infrastructural requirement for the proper and effective implementation of ARV treatment programmes. Over time, less expensive, generic brands of ARVs became available, and developing countries that could afford these cheaper drugs initiated ARV therapy programmes.

In 2002, the Federal Government of Nigeria initiated a National ARV treatment programme, under which 10,000 adults and 5,000 children living with HIV/AIDS were to be treated. The programme is currently being implemented in 25 health centers across the country's six geopolitical zones. At its inception, the relevant clinical and biomedical health personnel were minimally trained on the use of ARVs and the laboratory monitoring test for the treated patients.

Nigeria's immediate challenge during this period was to develop a critical mass of health personnel trained in implementing and sustaining these ARV programmes. The biomedical personnel needed to learn the various

laboratory techniques to monitor people undergoing treatment. Social scientists had to be trained to provide crucial psychosocial support to the patients during treatment. Despite the urgent need for this training, no adequate training tools, manuals' or modules were available. The immediate need was to develop appropriate training tools, then organize and implement those training programmes across the country.

In 2003, APIN provided support for the development of training modules on ARVs for health personnel including doctors; pharmacists, nurses, counselors, laboratory scientists, and data managers. With these training modules and addition support from the USAID and the Fund, for AIDS, Tuberculosis and Malaria, several training programmes took place in 2003 and 2004. By the end of 2004, 200 doctors, 98 pharmacists, 320 nurses, 270 counselors, and 268 laboratory scientists from more than 50 health facilities had been trained in the proper use of ARVs, the effective management of opportunistic infections, the relevant laboratory techniques for monitoring the outcomes of treatment, and counseling tools to ensure sustained base in developing the human resources for operational research.

As the use of ARVs grew, the need to enhance laboratory facilities to monitor patients on treatment became urgent. By the end of 2004, four government laboratories – the Nigerian Institute of Medical Research, the Jos University Teaching Hospital, the University College Hospital in Ibadan, and the University of Maiduguri Teaching Hospital – had acquired the capacity to test for viral load. In addition, 20 laboratories had acquired the capacity for automated CD4+ cell counts; 35 acquired the capacity for using manual techniques to estimate CD4+ cell levels. More than a hundred other laboratories enhanced their capacities for hematological, clinical chemistry, and microbiological tests.

Laboratory equipment and reagents were expensive, and the costs of various laboratory tests were high while the government subsidized the patient costs for drugs under the Nigerian national ARV programme, there was no provision for the costs of the laboratory tests. As a result, only the few patients who could afford them were monitored for their response to treatment; most other patients were monitored simply using clinical parameters. Thus, the data were inadequate to facilitate the monitoring and evaluation of the ARV treatment programme on a national level. One of the few studies carried out at the institutional level, however, revealed the effectiveness of the national ARV programme, as more than 80% of the patients achieved suppression of viral replication and improved immune status within 48 weeks of treatment.



The period of 1997 to 2004 also witnessed the launch of several initiatives geared toward boosting Nigeria's national response to the epidemic. Nearly all these initiatives provided for the development of adequate human and infrastructural capacities for HIV/AIDS research. Prominent among these initiatives are the Global Fund for HIV, Tuberculosis and Malaria; the US president's Emergency Plan for AIDS Relief (PEPFAR); APIN; and the Nigeria's federal government with substantial grant support to provide ARVs to infected people and to accommodate other logistical support, such as laboratory facilities and service for the ARV programmes. The Global Fund initiative has also provided support for establishing tools and other facilities for monitoring ARV resistance. Prior to this, there had been no articulated national study to establish the level of primary and acquired resistance to ARVs. Through The Global Fund support, however, a team of experts has been able to conduct a national survey on ARV resistance. This project is expected to stimulate the establishment of additional facilities for ARV resistance testing.

#### **4.0 CONCLUSION**

One of the major strategies being employed for HIV/AIDS control is research. Like the disease itself, the scientific efforts to master it is now firmly and irrevocably international. Looking to the future, there is need for international research –drugs for to the entire world.

#### **5.0 SUMMARY**

- Research involves investigations so as to discover new facts
- Research can be social, scientific, medical etc.
- For research, especially HIV/AIDS investigations to be effective, there is greater need for collaboration
- A lot of research activities are going on HIV/AIDS, particularly vaccine production so as to permanently abate the scourge.

#### **6.0 TUTOR MARKED ASSIGNMENT**

HIV/AIDS and research – what is your view?

#### **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 2      QUESTS FOR AN HIV VACCINE**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Race against time
  - 3.2    Justification for HIV vaccine in Africa
  - 3.3    The role of vaccines in controlling infections diseases
  - 3.4    Properties of an ideal HIV vaccine
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

More than two decades have passed since researchers identified HIV as the cause of AIDS. HIV vaccine research has received more money than other vaccine effort in recent years, and at least 50 different vaccine preparations have entered clinical trials. Yet an effective HIV vaccine, which could prevent millions of new HIV infections each year, remains a distant dream.

AZT, or zidovudine, the first antiretroviral (ARV) for the treatment of HIV infection, was licensed in 1987. Subsequent ARVs have been used in combination as highly active antiretroviral therapy (HAART), which has dramatically improved the prognosis of people living with HIV/AIDS, particularly in developed countries, where most HIV- infected people can afford such treatments. It is well proven that such therapy prolongs suppression of viral replication, allows for significant immune reconstitution, and improves quality of life for people living with HIV/AIDS. Yet HAART has not been effective in eradicating latent reservoirs virus, which contribute to viral resurgence when the therapy is discontinued.

### **2.0    OBJECTIVES**

At the end of this unit, you should be able to:

- Justify the need for HIV/ AIDS vaccine

- Describe the features of an ideal HIV vaccine
- Identify the efforts made so far especially in terms of research

### **3.0 MAIN CONTENT**

#### **3.1 Race against Time**

The Acquired Immunodeficiency Syndrome is the first great pandemic in recent times and has become a major health problem for some developed and developing countries because there is no cure for it yet. It has also raised serious social and economic problems. There is therefore an urgent need to protect people. Although there are already some hopes of progress but more fundamental research is still needed before we arrive at the right solutions.

More than two decades have passed since researchers' works on HIV vaccine production and at least 50 different vaccine preparations have entered clinical trials, yet an effective HIV vaccine appears to be a distant dream. Nonetheless, researchers are hopeful due to encouraging data from monkey experiments indicating that vaccines can protect animals from Simian Immunodeficiency Virus (SIV), a relative of HIV. Another study also indicated that a small percentage of HIV- infected people never develop AIDS while others control the viral load to a level that it does not affect their immune system.

#### **3.2 Justification for an HIV Vaccine in Africa**

Treatment of HIV/AIDS can include ARVs that directly reduce viral load, treat co-morbidities, or treat opportunistic infections. It may also involve boosting the CD 4 cell count; thus strengthening the immune system against external - internal infections. In all these cases, treatment slows disease progression rather than leading to a cure. In some developed countries, where ARV therapy has been available for several years, HIV may now be considered a chronic infection with only a limited effect on life expectancy.

Although many African countries now have HIV/AIDS treatment programmes, the treatment numbers are still small and there are many limitations. Therefore, AIDS treatment is not widespread enough to make a significant impact on the incidence of new HIV infections under the present circumstances. This limitation in treatment has led African nations to devote most efforts to prevention efforts, including behaviour change, communication initiatives, programmes to prevent mother-to-child

transmission of HIV, voluntary counselling and testing services, and prevention and treatment programmes for other infections such as sexually transmitted infections and tuberculosis.

Despite these efforts, HIV continues to spread at alarming rates in Africa, underscoring the need to explore new approaches to current strategies and to adopt completely new measures. Vaccination is one of such obvious measures.

In Africa, vaccines carry a strong reputation for endemic and epidemic diseases control. Smallpox- which was so dreaded in many African countries that it was accorded the status of a deity with its own priests and devotees- was eradicated by vaccination, a feat that would have been unimaginable to traditional belief. Yellow fever is close to being eradicated; through vaccination, it is no longer the dreaded killer that used to explode uncontrollably until a few years ago. Neonatal tetanus and post-partum tetanus in the mother are gradually yet steadily being consigned to history, once again because of vaccination. With the huge success of the global Expanded Programme on Immunization in preventing several childhood infectious diseases and the impending elimination of poliomyelitis, it can be understood why many Africans hope on the future availability of a safe, effective, and affordable HIV vaccine.

### **3.3 The Role of Vaccines in Controlling Infectious Diseases**

A vaccine is a substance that contains immunogens; when given to a person, these immunogens are “seen” by the immune system. This exposure results in an immune response that mounts a defense against the pathogen. The goal of an HIV vaccine is to stimulate the immune system to create strong responses targeting two arms of the immune response which consists of antibody production of the neutralizing type, and the cellular immune response which results in the generation of cyto-toxic T lymphocytes (CTLs) that specifically target and eliminate HIV-infected cells.

The main goal of a candidate vaccine is to either prevent or control an infection. An HIV vaccine may succeed in preventing infection by stimulating “sterilizing immunity.” Successful vaccines, however, seldom, if ever, achieve sterilizing immunity. Virtually no vaccine has ever succeeded in giving complete protection from a virus. Re-infection occurs in an immunized person, but the infection is eliminated both by the individual’s immune response and the self limiting nature of most of the viruses for which we have vaccines. Additionally, these viruses kill the cells they infect; they do not set up a reservoir in the host.

Another scenario would be a preventive vaccine that may not prevent primary infection entirely, but rather would decrease the probability of HIV transmission from an infected individual to another person. The primary action of such a vaccine would be to prevent HIV infection in an exposed person. To achieve this, replication of the virus is eventually preventing in the vaccinated person with the result that the infection fails to take hold. The vaccines currently in Phase III clinical trials are not expected to block HIV infection completely. Nonetheless, given our limited options, they would be considered acceptable and worthy of deployment for HIV prevention, at least in Africa, if they either lowered viral load and subsequently reduced the infectiousness of the disease, or reduced transmission of HIV. This “none sterilizing” scenario is an acceptable objective in the short term; however, the long term goal aims for a completely sterilizing HIV vaccine. Both policy makers and vaccine recipients in Africa found the low efficacy of early vaccines disappointing, as their experience with prevention vaccines had led them to believe that an HIV vaccine would be a magic bullet.

### SELF ASSESSMENT EXERCISE

The role of vaccine is to stimulate the immune system to create strong responses

- i. Yes----- ii. No -----

*Hint – See 3.3*

### 3.4 Properties of an Ideal HIV Vaccine

In a 2005 interview, the president and founder of the International AIDS Vaccine Initiative, Seth Berkley, listed the properties of an ideal HIV vaccine.

- **Efficacy.** The vaccine should be able to stimulate the production of a durable, functional, and protective immune response against most-if not all- subtypes to which an individual is likely to be exposed and from all potential routes of exposure. That is, it should be able to protect against genetically diverse HIV 1 strains and subtypes.
- **Safety:-**The Vaccines should have no early, intermediate, or late toxicity, and it should be well tolerated regardless of route of administration. It must be safe in infected and non-infected persons, thus removing the need for HIV screening before dosing. In addition, the vaccine should be safe in pregnancy, therefore removing the need for

pregnancy screening. It should also be safe for use in people with tuberculosis, sexually transmitted infection, or cardiovascular, renal, or hepatic disease. The vaccine should have no adverse interactions with commonly used medications, including oral contraceptives, antimicrobials, antidiabetics, and antihypertensive. Finally, the vaccine is also intended for children, and should be compatible with other childhood vaccines.

- **Delivery.** Commercial production should be restricted to only a few sites because of the complexity of vaccine manufacturing procedures, the need to comply with the good manufacturing practice requirements set forth in the quality system, and the high cost of setting up manufacturing facilities (up to USD million). Initially, only large manufacturing companies would be involved with production. Ideally, the goal would be to simplify production procedures sufficiently to allow only one or two West Africa countries to participate in vaccine production. As Nigeria and Senegal have experiences with vaccine production, one or both of these countries should start planning for eventual participation in the commercial production of HIV vaccine.
- **Stability:** The vaccine should be stable and have a long shelf life.
- **Route of administration:** The vaccine should be active orally; if injection is necessary, it should be possible to deliver the vaccine with an injection route.
- **Duration of action:** The ideal vaccine would have a long lasting effect with only a single dose. Alternatively, it should require two or three doses at most.
- **Efficacy indicator:** A cheap, simple, rapid, and sensitive test that can clearly distinguish between post-vaccination seroconversion test and post-infection seroconversion should be available.
- **Cost:** The vaccine should be affordable – or a special differential costing should be negotiated to make it affordable – to resource poor countries. Distribution cost should also be reduced to affordable levels.

## SELF ASSESSMENT EXERCISE

List the properties of an ideal HIV vaccine

- |      |       |
|------|-------|
| i.   | ii.   |
| iii. | iv.   |
| v.   | vi.   |
| vii. | viii. |

*Hint: see 3.4*

## **4.0 CONCLUSION**

Rapid progress has been made in understanding the biology, the mechanism of pathogenesis and the molecular biology of HIV. The greatest challenges however, for the immediate future are to control AIDS epidemic and to provide effective treatment for those infected.

Avoiding exposure to the virus is the most effective means of prevention. But this may not be adequate to eliminate the disease, so it is essential to develop an antiviral vaccine to control its transmission.

Antiviral chemotherapy with the chemical compound AZT, is very effective but not a cure and thus can not replace the choice of vaccine production. AZT has however proved to be useful in prolonging the life of several patients and this result has also stimulated vigorous research to develop new drugs.

It is also worthwhile to mention that the global scope of the AIDS crisis has triggered extensive international cooperation among scientists, and coordinated efforts on the part of public health officials, aimed at initiating effective programme for monitoring and evaluating activities geared at controlling this deadly disease called HIV/AIDS.

## **5.0 SUMMARY**

- Though Antiretroviral drugs are helping to prolong the life of HIV/AIDS patients but it is not a cure.
- AIDS' impact is ravaging on the body as well as on the economic and social aspect of the population.
- Vaccine production should be accepted universally.
- There is need for an ideal HIV vaccine in Africa to curb the scourge

## **6.0 TUTOR MARKED ASSIGNMENT**

What are the properties of an ideal HIV VACCINE?



## **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 3      AIDS: THE IMPACT OF OTHER SEXUALLY TRANSMITTED DISEASES**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    STDs as cofactors in sexual transmission of HIV
  - 3.2    A prospective study by FA Plummer et al
  - 3.3    Another prospective study in Nairobi
  - 3.4    Prevention of AIDS and STD control
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

Human Immunodeficiency Virus (HIV), the virus that causes AIDS, can be transmitted by sexual intercourse, be it heterosexual or homosexual. In fact, in most parts of the world, an overwhelming majority of patients with AIDS acquired the infection through sexual contact. Thus, it is not surprising that the same populations that are at increased risk for various Sexually Transmitted Diseases (STDs) are also experiencing high rates of HIV infection. There is growing evidence, however, that at least some STDs may enhance the efficiency of sexual transmission of HIV.

### **2.0    OBJECTIVES**

At the end of this unit, you should be able to:

- Examine the impact of STIs on AIDS
- Examine the need to carry along other sexually transmitted diseases in the control of AIDS
- Identify the features to look for in people with other sexually Transmitted diseases as potential or possible AIDS symptoms.

### **3.0    MAIN CONTENT**

### 3.1 STDS as Cofactors in Sexual Transmission of HIV

Among the genital syndromes, genital ulcers have been most convincingly implicated as co-factor for potential sexual transmission of HIV. Several cross-sectional studies among heterosexual men and women in Africa originally showed that both the history of and the presence of genital ulcers was correlated with HIV infection. These findings are complemented by studies of HIV infection in homosexual men in the United States, which documents a strong association between HIV antibodies and a history of syphilis and of oral or genital herpes.

### 3.2 A Prospective Study by FA Plummer et al

A prospective study in Nairobi by E.A. Plummer and W. Cameron from the University of Manitoba has provided good evidence that genital ulcers, particularly Chancroid, increase the susceptibility to HIV infection among women. In a cohort study of seronegative female prostitutes, the presence of genital ulcers greatly increased the risk of acquisition of HIV infection whereas gonococcal infection was not related to HIV infection. Genital ulcers may permit easier penetration of HIV by causing disruption of the integrity of the mucosal epithelium.

### 3.3 Another Prospective Study in Nairobi

Another prospective study in Nairobi of men who acquired an STD from a group of prostitutes found that men who acquired genital ulcers had five times the rate of HIV infection as men who acquired urethritis. This study not only supports the role of genital ulcers in enhancing HIV transmission, but also documents a higher efficiency of heterosexual transmission after a single exposure than has been suggested by studies of heterosexual transmission in the West.

Finally, in the same cohort of prostitutes mentioned earlier, *Chlamydia trachomatis* infection also increased the risk of acquisition of HIV. Chlamydial infection and other STDs that elicit an inflammatory reaction in the female genital tract may increase the risk of HIV cells in an HIV infected person, or the pool of potential target cells (CD4 + lymphocytes) in seronegative women.

### 3.4 Prevention of AIDS and STD control Programmes

The identification of modifiable co-factors for HIV transmission has important implications for AIDS control programmes, since control of STDs could have a major impact on limiting the spread of HIV infection, particularly in heterosexual populations and in the developing world. Effective and inexpensive antimicrobial therapy is available for most bacterial STDs. Although health education and promotion of condom use remains the cornerstone of AIDS prevention, thus, programmes for the diagnosis and treatment of STDs should be integrated into AIDS control programmes.

#### SELF ASSESSMENT EXERCISE

STIs are cofactors in sexual transmission of HIV True or False?  
.....

*Hint- see 3.1*

### 4.0 CONCLUSION

A further implicating of the role of STIs in the spread of HIV infection is that diverting resources from STI control programmes for AIDS prevention, this may not only result in an increasing incidence of STIs, which are associated with considerable morbidity, but may also be counterproductive for the prevention of HIV infection itself. The AIDS epidemic should not be a reason for decreasing support for STI control programmes, but an incentive to strengthen or initiate such programmes.

### 5.0 SUMMARY

- A study of F.A Plummer and W. Cameron from the University of Manitoba carried out in Nairobi has provided evidence that genital ulcer increase susceptibility to HIV infection
- Another study also confirms that finding of Plummer and Cameron on genital ulcers and HIV infection
- Sexually transmitted diseases (STDs) are co-factors in sexual transmission of HIV/AIDS
- There is need to properly integrate AIDS prevention with STD control so as to achieve a decline in spread.

## 6.0 TUTOR MARKED ASSIGNMENT

Sexually transmitted diseases (STDs) are cofactors in sexual transmission of HIV. Discuss

## 7.0 REFERENCES/FURTHER READINGS

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## **UNIT 4      PREVENTION, TREATMENT AND CONTROL OF THE HIV/AIDS SCOURGE I**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Treatment of HIV/AIDS
  - 3.2    The case for antiretroviral therapy
  - 3.3    Adverse effects of antiretroviral therapy
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

At present HIV/AIDS knows no cure and no vaccine exists to prevent infection due to HIV to the complexity of the virus. Only the symptoms of HIV are being managed with multiple drugs while full blown AIDS overwhelms its victim within a very short time as it has an almost 100% fatality rate after the development of serious symptoms.

This is the more reason why HIV/AIDS treatment is quite paramount in the bid to effectively control and minimize the scourge. However, there is urgent need for prevention as the popular saying goes, “prevention is always better and cheaper than cure.”

### **2.0    OBJECTIVES**

At the end of this unit, you should be able to:

- Identify available drugs for the treatment of HIV/ AIDS symptoms
- Recognize the fact that AIDS has no known cure yet

### **3.0    MAIN CONTENT**

#### **3.1    Treatment of HIV/AIDS**

The key words in the title of this unit are treatment, prevention and control. And according to Oxford Mini reference Dictionary, treatment is something

done to relieve illness, while prevention, disallows illness from restrain, regulate or check illness.

Treatment is therefore applied when illness is ongoing. The treatment of HIV however, requires comprehensive integration of patient-centered medical and social services. Essential elements of this approach include the provision of clinical care, nursing care, nutritional care and psychological support as well as health information with counselling, legal protection and economic sufficiency. Notable components of successful clinical care include early diagnosis, access to care, antiretroviral therapy, symptom control, prophylaxis against opportunistic infections and malignancies, and end of life care. The achievement of all the above requires multisectoral and multidisciplinary teams that are cross-linked to provide a continuum of care that involves patients, their families, health care providers, governmental and non governmental organizations and society at large.

AIDS treatment should incorporate prevention of new infections since this disease remains incurable despite advances in antiretroviral treatment.

### **SELF ASSESSMENT EXERCISE**

Differentiate between, treatment, prevention and control

*Hint: see 3.0*

### **3.2 The Case for Antiretroviral Therapy**

Antiretroviral Therapy (ART) according to WHO, has significantly reduced morbidity and mortality, prolonged life expectancy and improved quality of life among people with HIV infection. ART has also been effective in the prevention of mother to child transmission of HIV (PMTCT). The increasing availability of ART is said to have created a major incentive to participate in voluntary counselling and testing and has broaden and enhanced prevention efforts by reducing stigma and increasing behavioural change. It is also believed that effective ART may reduce overall transmission in the country.

The provision of affordable, accessible and good quality treatment and care on a global scale for people living with HIV is essential for tackling the epidemic, improving lives and for protecting the significant gains of these past years. Adequate provision of care and treatment for HIV victims is a critical component of achieving the Millennium Development (MDG). Until 2005 only 5% of the 6millum people who required ART in resource

limited countries could access these drugs between 2003 and the end of 2005. However, these numbers rose significantly, mainly from the massive scaling of programmes supported by the WHO, Global fund to fight AIDS, Tuberculosis and malaria: the World Bank and the U.S president's Emergency Plan for AIDS Relief (PEPFAR). Nigeria, with a national seroprevalence of 5% and an estimated 4-6 million people living with HIV, has at least 800,000 people in urgent need of ART. Only about 5% of those in need are currently receiving ART while the number will undoubtedly rise sharply.

### **3.3 Adverse Effects of Antiretroviral Therapy**

It should be noted that ART has many risks and limitations. Such adverse effects include metabolic disorders, mitochondrial toxicities, and numerous organ specific adverse reactions. The scope of these adverse effects is said to be broad as the understanding of their pathogenesis and clinical presentations continue to emerge. To compound the problem was the initial ideas from mathematical models that AIDS was going to be cured through long and persistent use of ART. This hypothesis has long been faulted especially due to the ability of HIV to mutate and change its form very fast. And because of the aforementioned reasons, monotherapy is no longer encouraged as clinical evidence also favours combination therapy. Therefore combination therapy is being employed to treat HIV/AIDS.

### **SELF ASSESSMENT EXERCISE**

Quickly review the adverse effects of ART (Hint-please check 3.2)

### **4.0 CONCLUSION**

The bitter truth is that upon all efforts, treatment is only for symptoms as there is no known cure for AIDS. As efficacious as vaccine is, none has been effectively produced to protect us against this deadly disease. Antiretroviral is the drug of choice though with numerous adverse effects still there are no viable options than to follow efficiently the Antiretroviral regimen to prevent early progression of HIV to AIDS and eventual death. It also helps to prevent mother- to- child transmission.



## **5.0 SUMMARY**

- Treatment with drugs is a very crucial and integral part of HIV/AIDS Control
- Antiretroviral drugs are used for the treatment of AIDS and it is not without some adverse effects.
- The adverse effects of Antiretroviral drugs include toxicity and the issue of resistance
- No known cure yet for AIDS and no effective vaccine for its prevention

## **6.0 TUTOR MARKED ASSIGNMENT**

Review the adverse effects of antiretroviral therapy

## **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 5    PREVENTION, TREATMENT AND CONTROL OF THE HIV/AIDS SCOURGE II**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Rationale for Combination Therapy.
  - 3.2    Combination Therapy
  - 3.3    Other Pharmaceutical Care Services
  - 3.4    Preventive Measures for Target Group
  - 3.5    Preventive Measures For Medical personnel
  - 3.6    Preventive Measures for the General public
  - 3.7    Care for those already infected with HIV/AIDS
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

This unit is the second part and complementary to the first one on HIV/AIDS treatment, leading to the advent of combination therapy. Combination therapy as the name implies comes as a follow up to antiretroviral therapy because of certain problems due to the use of antiretroviral drugs, chief among which are toxicity and resistance. The virus is also capable of constant mutation thus the need for combination therapy.

### **2.0    OBJECTIVES**

At the end of this unit, you are expected to:

- Know what combination therapy is all about in HIV/AIDS treatment
- Understand the rationale for combination therapy
- Familiarize with other pharmaceutical care services
- Appreciate the different preventive measures for target groups

### 3.0 MAIN CONTENT

#### 3.1 Rationale for Combination Therapy

- A) Combination therapy is useful in increasing efficacy through addition and/or synergistic antiviral activity.
- B) To reduce the toxic effects associated with each drug used at higher doses.
- C) To delay the emergence of drug resistance and/or broaden coverage against pre-existing drug resistant virus.
- D) To target virus in different cellular reservoirs and/or different tissue reservoirs and direct treatment towards cells at different stages of activation.

#### 3.2 Combination Therapy

- 1) Retrovir (AZT)/ Epivir (3TC) combination. It gives pronounced and prolonged fall in HIV RNA Load. It also gives marked and sustained increase in CD4 cell counts.

**Dosage:**

Retrovir	200mg	t.i.d
Epivir	150mg	b.i.d

- 2) AZT/3TC/indinavir combination
- 3) The issue of treatment of HIV opportunistic infection has been dealt with thoroughly under unit 1 of this course and in the discussion of skin conditions associated with HIV/AIDS (please refer to it)

#### SELF ASSESSMENT EXERCISE

List the rationales for combination therapy

- |            |           |
|------------|-----------|
| i. _____   | ii. _____ |
| iii. _____ | iv. _____ |

*Hint: see 3.1*

#### 3.3 Other Pharmaceutical Care Services

- 1) Drug information for AIDS patients:  
Information on new drugs and therapies. Medical literature, newsletters, computer bulletin etc must be available to all concerned.
- 2) Protection of patients: It is the ethical and legal responsibility of the pharmacist and others involved in AIDS patient' care, to protect their confidentiality
- 3) Counseling of HIV patients: Counsel patients from time on the use of medical devices and appliances.

**For example:**

- i) Use of condoms, made of latex as more effective barrier to virus than lambkin or natural membrane that is porous.
- ii) Adding the use of spermicide to a condom may provide additional protection.
- iii) It is safer to use condom with lubricant
- iv) Community services  
All health providers involved in the care of HIV/AIDS patients should provide needed information to the patients and others in the community, including those who do not have AIDS.  
Lastly, due to many problems of treatment especially toxicity, there is therefore need to emphasize prevention which is often said to be safer and cheaper than cure.

### **3.4 Preventive Measures for Target Group**

These are measures that essentially apply to risk groups such as long distance truck drivers, prostitutes, youths, intravenous drug users, market women and medical personnel.

- 1) Maintain regular and faithful sex partners. Do not share partners or engage in group sex.
- 2) Avoid patronizing commercial sex workers. The highest percentage of HIV/AIDS cases has been reported with this group.
- 3) Always use condom if you must have casual sex but do not rely on it. The tensile strength of some of these condoms is inadequate because of our tropical environmental condition. A sizeable number of them tear during use. More-over the pore sizes are much larger than the largest viral particle; hence do not offer absolute protection against HIV infection.
- 4) Do not share injection needles or other surgical appliances. Insist on fresh ones.

- 5) Do not patronize unqualified medical personnel for injection, tattooing, circumcision and scarification. If you must do any of the above, provide your own blades or surgical equipment.
- 6) Request and insist that your traditional medical practitioners use fresh blades or other incision instruments when any cut, or incision or scarification is to be done.
- 7) Insist that your barber disinfect his barbing instruments before he applies them on you.
- 8) Do not donate blood if you have engaged in risky behaviours.

### **3.5 Preventive Measures for Medical Personnels**

- a) Assume that all blood, blood products and other body products and other body fluids are infectious and adopt measures to prevent direct contact with them.
- b) Sterilize all re-useable needles and syringes, surgical and skin piercing instruments after use
- c) Screen all blood for HIV before transfusion. It is worthwhile to maintain this standard in all situations so as to ensure safety
- d) Wash your hands with soap and disinfect after any accidental exposure to blood, semen, vaginal secretions and body fluids
- e) Wear hand gloves during vaginal examinations, blood, dental procedures etc
- f) Decontaminate all re-usable instruments immediately after use, then disinfect or sterilize them.
- g) In case of accidental cuts, or needle stabs, wash the area thoroughly with soap and disinfect with suitable and effective agents.
- h) Spills of body fluids and blood should be well cleaned using suitable disinfectants such as preparations containing chlorine
- i) Wash your hands with soap and water after working with a patient and before you start with another patient.
- j) Avoid blood transfusion to patients except in critical cases and where there are no alternatives/options

### **3.6 Preventive Measures for the General Public**

General preventive and control measures are needed for the general public and the main interest here are:

- 1) To prevent HIV infection
- 2) To prevent and control cross-infection
- 3) To reduce the personal and social impact of HIV and care for those already infected

- 4) Preventive measures for the general populace are designed to prevent the spread due to ignorance

### **3.7 Care For Those Already Infected with HIV/AIDS**

#### **1) Information, Education and awareness creation:**

The above three are the key to aids prevention. It is only through enlightenment information that people can voluntarily and individually decide to change some of their risk behaviours. It should be remembered that such behaviours are private and often known to the individual alone. The media must be fully involved in the dissemination of information to the general public and not AIDS victims alone.

#### **SELF ASSESSMENT EXERCISE**

Review HIV/AIDS preventive measures for the general public

- |            |           |
|------------|-----------|
| i. _____   | ii. _____ |
| iii. _____ | iv. _____ |

#### **2) Health and social services for patients**

Information and education programmes alone do not sustain prevention. A supportive social environment and health services must be put in place especially for those already infected.

The HIV infected individual needs counseling so also their sexual partner and family. A supportive social environment such as tolerance, avoidance of discrimination towards the infected individual at the workplace and at home, helps to protect and give assurance to the victim. There is no health rationale for the isolation of HIV/AIDS patients. What the HIV patients need is empathy, understanding and not pity. Actually, existing prejudices serve to scare people from volunteering for HIV screening. Certain health and social services such as counseling of I.V drug users, provision of free sterile needles and syringes to I.V drug users during the period of counseling and drug withdrawal, supply of drugs free at subsidized rates to strengthen people's capacity to make long term behaviour changes are helpful.

Treatment with drugs is a very crucial and integral part of HIV/AIDS control and in line with the National Drug Policy launched in 1990 It is absolutely necessary to make available at all times, drugs which are very

effective, affordable, safe, and of good quality in all sectors of health care through the rational use of drugs.

#### **4.0 CONCLUSION**

There is thus need for behavioural change as high rates of sexual contact with multiple partners is also incriminated in AIDS spread. There is therefore greater need for awareness creation and effective mobilization of human, material, medicinal and financial resources towards effective control of the AIDS scourge.

#### **5.0 SUMMARY**

Due to the adverse effects of the ART drugs, particularly toxicity, combination therapy is preferable and in vogue. There are other care services for treatment of HIV/AIDS victims and these include counseling, drug information and community services. There are also preventive measures in place which include those targeted at specific groups such as the commercial sex workers (CSW), medical personnel, HIV/AIDS patients and the general public.

#### **6.0 TUTOR MARKED ASSIGNMENT**

It is generally acknowledged that antiretroviral drugs have some adverse effects, quickly review these adverse effects

#### **7.0 REFERENCES/FURTHER READINGS**

FMOH (1992) Care of a person with AIDS in the community. Federal Ministry of Health and Social Services Lagos, Nigeria.

TDR news (2007) Enhancing drug discovery for neglected tropical diseases. Geneva: WHO.

UNAIDS (2001) Sources and Prices of Selected Drugs and Diagnostics for People Living with HIV/AIDS. Geneva: WHO

## **MODULE 4**

Unit 1	The Right Mix Of Treatment And Prevention
Unit 2	Drug Resistances in HIV/AIDS Treatment Prevention
Unit 3	AIDS Blood Transfusions
Unit 4	HIV and Breastfeeding I
Unit 5	HIV And Breast Feeding II

### **UNIT 1 THE RIGHT MIX OF TREATMENT AND PREVENTION**

#### **CONTENTS**

1.0	Introduction
2.0	Objectives
3.0	Main Content
3.1	Integration of HIV prevention and treatment
3.2	Resource implication
4.0	Conclusion
5.0	Summary
6.0	Tutor Marked Assignment
7.0	References/Further Readings

#### **1.0 INTRODUCTION**

Nigeria has received major funds for treatment, but it has also experienced a relative reduction in resources for prevention. To be successful in stemming the spread of HIV, the country must achieve the right mix of treatment and prevention.

Stover et al. opines that the widespread availability of treatment can enable the full impacts of prevention efforts to be attained. Salomon et al. forecast different scenarios looking at four types of responses to the HIV epidemic: a baseline, which maintains the status quo of ineffective prevention (as observed in Nigeria up to the mid 1990s) and treatment; a treatment centered response; a prevention centered response; and a combined response .

A baseline projection for sub-Saharan Africa shows that the annual number of new adult infections will rise from 2.4 to 3.7 million between 2004 and



2020 and the AIDS mortality will rise from 1.8 million to 2.6 million. But if the treatment centered approach were taken, the HIV infection rate would decrease by 6% compared to the baseline by 2020 and the mortality rate would decline initially by 33% but converge to baseline values by 2020. A prevention-centered response would have a greater impact on new infections, with a 50% reduction in annual incidence by 2020; the mortality trend in the prevention centered response is more favourable than the treatment centered response because of reduced incidence (an annual incidence of 34% to 64% and a reduction in annual mortality of 20% to 42% by 2020). The combined treatment and effective prevention response would have salutary effects, in which both infections and deaths averted could be substantially higher (the annual number of new infections would be 74% lower and the annual mortality rate would be 47% lower by 2020).

The implication of these scenarios is that with an estimated four to six million Nigerians already infected, Nigeria runs the risk of a 50% increase by 2020 if the present efforts are ineffective despite increased access to treatment. The rising rates of infection would also have devastating implications for the already fragile health system and the elevated mortality rates from AIDS. At the same time, Nigeria could turn the tide by creating a combine to the epidemic.

## **2.0 OBJECTIVES**

It is expected that at the end of this unit, you will be able to achieve the following:

- Understand what the right mix of treatment is all about
- Appreciate the fact that there is need for testing before treatment commences.
- Know what integration of prevention and treatment is all about especially concerning HIV/AIDS control.
- And that the right mix of treatment is based on patient assessment.

## **3.0 MAIN CONTENT**

### **3.1 Integration of HIV Prevention and Treatment**

Nigeria must scale up its HIV intervention massively in the next five years if it will ever be able to achieve the goal it sets for itself in the 2003 national policy and meet international obligation under the UNGASS and the MDG. Interventions to high risk groups such as sex workers and long

distance drivers should receive top priority. The second priority area should be the prevention of HIV infection among young people. Investment in prevention efforts targeting this enormous and vulnerable group will yield high dividends. Large scale school behaviour change programmes and modified curricula will also go a long way toward achieving the desired result. PMTCT should be a third areas of priority, with care of orphans and vulnerable children a fourth area. Closely linked with this would be care and support for women and children infected and affected by HIV/AIDS. Prioritizing these strategies is important for two reasons: resources are limited, and money should be spent where it will give the highest yield in terms of number of new cases prevented. Integration of prevention efforts with treatment efforts is also vital. The Global HIV prevention working Group identified five strategies

- Expand access to HIV testing: Because VCT is a critical entry point for both prevention and ART service, testing programmes should be significantly expanded and aggressively promoted. Wherever ART is available, VCT should be universally offered, provided that individual retains the right to opt out of testing. This approach not only identifies people who will need treatment but also provide prevention education for those who are HIV negative.
- Incorporate HIV Prevention in health care settings: All health care workers should be trained to provide HIV prevention counseling, access to condoms and other prevention tools, and screening for STIs. Risk reduction strategies should also be integrated into initiatives that promote ARV adherence. Prevention and treatment service should be tailored to meet the specific needs of women, recognizing the multiple social, legal, and economic disadvantage they confront. Special efforts will similarly be needed to make integrated prevention and treatment a reality for young people, who often do not enter the care system until they are adults.
- Promote ART in prevention service: Prevention outreach programmes should promote HIV testing, educate communities about HIV treatment, and facilitate linkages to care.
- Re-assess donor and government priorities: Donors and national programmes should prioritize integration of prevention in ART settings.

- Add research, monitoring, and evaluation components: Efforts on research, monitoring, and evaluation should be strengthened and expanded to identify the most effective strategies for integrating prevention and treatment

### **3.2 Resource Implication**

The simultaneous scale up of prevention and treatment will require an enormous amount of resources. On the global level, the UNAIDS recommends that spending from all sources to increase from US\$10.5 billion in 2005 to US\$15 billion in 2007. The implication for Nigeria is that given the currently available funds from all sources, the government and donors should increase funding for HIV programmes by around 300% between 2005 and 2009. The Global Fund, the World Bank Multi Country AIDS programme, DFID, and PEPFAR already have funds allocated to Nigeria, and the country can seek more funds from other multilateral and bilateral organizations. Nigeria must also eliminate any obstructive low absorptive capacity – associated party with administrative choke point 0 to enable funds to be quickly applied to scale up efforts, in order to reap a meaningful impact from such interventions.

Funds should be committed to short and long term strategies to build sustainable capacity in Nigeria, allowing the country to deliver essential service, to expand and improve its health care infrastructure, and to expand training programme for health care personnel.

### **SELF ASSESSMENT EXERCISE**

List 5 strategies of integrating HIV prevention into treatment

- i.
- ii.
- iii.
- iv.
- v.

*Hint: ..... see 3.1*

### **4.0 CONCLUSION**

The sole purpose of treatment, especially in sero positive patients is to maintain a threshold of HIV in body system that will not overwhelm the patients with a progressive rise in CD4+ cell count as well as a decline in the frequency and severity of opportunistic infections. There fore any situation or condition short of the above in the patient may be

associated with decreased durability and portend the development of drug resistance.

Patients should be motivated to appreciate the importance of adherence to treatment. Therefore, community involvement through education, preparedness, support activities, and mobilization can greatly enhance drug adherence and must form a key strategy for achieving durable viral suppression at all times.

## **5.0 SUMMARY**

- Frequent mutation of the HIV virus assists in its drug resistant problem.
- Other factors linked to resistance include high viral load, poor adherence to medication by patients, injection drug use and use of drug with low resistance development thresholds.
- There is need to test for resistance before other measures are taken.

## **6.0 TUTOR MARKED ASSIGNMENT**

List and discuss the 5 strategies for integrating prevention efforts with treatment as identified by the Global HIV prevention working group.

## **7.0 REFERENCES/FURTHER READINGS**

Adeyi O, Kanki, P.J, Odutolu, O, and Idoko, J. A (2006) AIDS IN NIGERIA; A Nation on the threshold. USA: Harvard University Press

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## **UNIT 2      DRUG RESISTANCES IN HIV/AIDS TREATMENT**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Transmitted Drug Resistance
  - 3.2    Antiretroviral therapy and Acquired Drug resistance in Nigeria
  - 3.3    Testing for resistance
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

With a virion half life of 30 minutes and a daily production of up  $10^0$  virions. HIV reverse transcriptase enzyme incorporates approximately one mutation per genome per replication cycle (69). The higher the viral replication, the more frequent the mutations, with almost every single point mutation occurring daily. These mutations produce a population of diverse, yet related viral variants referred to as “quasi species,” which are generated by the error prone viral RNA dependent polymerase. Whenever a mutation occurs, the fitness – or replicative capacity – of the altered virus may be enhanced, unchanged, or reduced, depending on the specific mutation and its interaction with the host immune system and the presence or absence of ARVs.

Approximately half of the virus population in plasma is cleared and replaced each day. The high turnover allows a rapid emergence of drug resistant variants under selective pressure. To maximize its chances of survival, HIV, like other pathogenic organisms, evolves toward strains with the greatest ability to replicate in a given environment. Therefore, evolution toward wild – type virus, which typically has high replicative capacity, is favoured in the absence of ARV pressure. On the other hand, when a patient is taking ARVs, viral evolution favours strains that are best able to

replicate in that environment – that is strains that are resistant to the particular drug or drugs. If the selected drug resistant strain is of appropriate fitness, it may eventually become the dominant strain, although resistant variants are usually replaced by residual wild type virus if the drug selective pressure is removed. Resting latently infected cells can, however, continue to harbour drug resistant provirus.

The most effective way to interrupt the cycle of viral replication mutation is to attain complete, durable viral suppression. Incomplete viral suppression encourages viral mutation and resistance. The factors contributing to incomplete suppression of virus replication include poor adherence, pharmacologic factors, host factors, inadequate ARV potency, and transmitted drug resistance. Mechanisms that result in HIV drug resistance include decreased drug binding, increase enzyme efficiency nucleotide excision, increased target concentration, altered (co) receptor affinity, and altered drug transport. The factors linked to detection of resistance mutational are:

- A high baseline viral load or low baseline CD4+ count;
- Substantial but imperfect adherence (highest risk patients);
- Injection drug use; and
- Use of drug with low resistance development thresholds

## **2.0 OBJECTIVES**

At the end of this unit, it is expected that you should have learnt the following.

- AIDS virus has a very short life span
- HIV's ability to mutate frequently makes it difficult to treat or control
- Understand what drug resistance is all about and how to deal with it
- Know how to test for resistance alongside measures to take so as remedy the situation

## **3.0 MAIN CONTENT**

### **3.1 Transmitted Drug Resistance**

AS ARV use becomes widespread in a given area, one might expect an increase in the proportion of patients who become infected with drug resistant HIV strains. However, the emerging trend in places with a long

history of ARV is that, from the CATCH study it was found the overall prevalence of HIV strains resistant to at least one ARV was 9.6%. The prevalence of drug resistant HIV among patients infected for a year or less was 10.9%, compared to 7.5% among patient infected for more than one year. Data from the United States have demonstrated similar result. Among patients with primary HIV infection, 11.5% had resistance to at least one ARV compared to 7.5% among patients with chronic HIV infection. In both studies, the most common resistance was to NRTIs. Historical models have been used to predict that over the next decade, the rate of transmission of drug resistant virus in Africa would remain below 5% and that most resistant strains result from acquired, not transmitted, resistance

### **3.2 Antiretroviral Therapy and Acquired Drug Resistance in Nigeria**

The choice of HAART regimen may help to avoid resistance. Regimens that promote adherence by using pill with low toxicity, doses of one or two times a day, and fixed dose combinations will delay the onset of resistance. Other factors promoting a durable regimen include drug that are potent, have favorable pharmacokinetic properties, and have a high barrier to resistance. The choice of the first regimen may, determine future treatment options by determining the resistance pathways. There is, therefore, a need for studies to determine optimal regimens for the Nigerian ARV programme. Nevirapine containing regimens for PMTCT in the country also needs to be evaluated in view of the reports of high level resistance from the use of single dose nevirapine and the poor response – due to resistance – of these patients to subsequent nevirapine containing HAART combinations

### **3.3 Testing for Resistance**

Drug resistance can be determined by two main techniques: genotypic and phenotypic testing. Genotypic testing detects specific mutations in the reverse transcriptase and/or protease genes. Phenotypic testing determines the relative amount of drug needed to suppress viral replication compared to a reference wild type virus. These tests are most reliable when the viral load is greater than 1,000 copies/ml.

Genotypic tests are more readily available and have a quicker turnaround time, are less technically demanding to perform, and are relatively less costly. Another important advantage of genotyping is the ability to detect mutations that are in the process of back mutation (from resistance virus to wild type or “revertant” mutants), and whose amino acid sequences are

between those of resistance virus and wild type virus. These partially revertant mutants may not influence phenotype, but their identification on genotypic testing offers valuable information. Genotyping has limited usefulness if the clinical significance of detected mutation has not been previously characterized, and if the mutations are multiple and complex, genotyping requires expert interpretation.

Phenotypic tests measure drug susceptibility directly. However, the test is technically more demanding, limited in availability, and relatively expensive, and determining clinically relevant cut offs or breakpoints is often difficult and variable. Advantages of phenotypic resistance assays include ease of interpretation and provision of meaningful information when multiple mutations are present in the same sample. Thus, phenotypic testing may be preferred to genotyping in heavily treatment experienced patients, who harbour multiple, complex resistance mutations.

The usefulness of resistance testing is in the identification of drugs that are likely to work and, independently, not to work. These determinations may be imperfect, however, because clinically relevant mutations may not be detected by standard resistance tests if they constitute a very small proportion of the total viral pool. The more “active” drug contained in a regimen, the greater the likelihood that the therapy will succeed.

### **The following situations warrant resistance testing consideration**

- Before initiating therapy in a patient exposed to possibly resistance virus, such as when a patient has been exposed to single dose nevirapine or has had a sexual partner who was exposed;
- In patients who fail to adequately respond to first line or second line therapy; and
- In patients who experience viral “rebound” or a return of HIV RAN toward baseline

Several caveats need to be considered about resistance testing: tests are most useful when the patient is on an ARV regimen; the absence of resistance to a drug that a patient has previously taken does not eliminate the possibility that the virus is resistant to that drug; if resistance to a drug is ever documented, it is assumed that the patient is likely to achieve resistance virus indefinitely, regardless of subsequent test results; and expert advice is often required to interpret resistance test results.

### **SELF ASSESSMENT EXERCISE**



What do you understand by “testing for resistance”?

.....

.....

.....

.....

*Hint: see 3.3*

## 4.0 CONCLUSION

Drug resistance is a major problem for HIV infected patients on. Mutations on the reverse transcriptase and protease genes can be mapped to specific cordon changes the are often correlated with viral resistance to a specific drug, subclass of drugs. While measuring resistance has become more common in the developed world, resistance testing is expensive and not available in many resource poor countries like Nigeria. However, a fundamental understanding of viral resistance is required to treat patients, particularly those who have not responded to or failed a prior treatment regimen. Therefore, resistance testing should be embraced in tertiary health institutions as part of the process of monitoring individuals on ART in Nigeria.

## 5.0 SUMMARY

- According to Stover et al, widespread availability of treatment can help in achieving full impact of prevention efforts.
- It is projected that in sub-Saharan Africa, that the annual number of new adult infections will rise from 2.4 to 3.7 million between 2004 and 2020.
- The right mix of treatment is a good prevention measure to stem the spread of HIV/AIDS.
- The integration of HIV prevention and treatment as suggested by the Global HIV prevention working Group has 5 strategies.
- The simultaneous scale up of prevention and treatment requires an enormous amount of resources.

## 6.0 TUTOR MARKED ASSIGNMENT

Briefly discuss what resistance is all about in relation to HIV/AIDS treatment

## 7.0 REFERENCES/FURTHER READINGS

Adeyi O, Kanki, P.J, Odutolu, O, and Idoko, J. A (2006) AIDS IN NIGERIA; A Nation on the threshold. Havard University Press, USA.

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## **UNIT 3     AIDS BLOOD TRANSFUSIONS**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    Ensuring safe blood supplies
  - 3.2    Supply
  - 3.3    Distribution
  - 3.4    Establishing criteria for transfusion
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

Blood transfusion can save lives. However, they can also result in unnecessary illness and deaths in areas where donated blood is not screened for Human Immunodeficiency Virus (HIV) that causes AIDS. Transmission of HIV infection through blood has focused new attention on the need for safe and adequate blood supplies, especially in areas with high HIV prevalence rates. This is of particular concern to pregnant women, new mothers and children, who receive most blood transfusions in developing countries.

“The neon light is on for testing (blood), “says Jean Emmanuel of the World Health Organization’s (WHO) Global Programme on AIDS. “One has to test for HIV, at the same time remembering that an integrated blood transfusion system with voluntary non-remunerated blood donors is the cornerstone of safe blood. In addition, appropriate use of blood will ensure a successful programme.”

### **2.0    OBJECTIVES**

This unit is set to make you aware of the following facts:

- Where blood donated is not screened for HIV, it can cause doom for the recipient if the donor is infected
- Blood is a basic essential of life but can result in havoc if HIV-infected.

- There is great need to screen blood before transfusion to detect infections.
- Necessity to familiarize properly with the procedures for blood collection and eventual transfusion.

### **3.0 MAIN CONTENT**

#### **3.1 Ensuring Safe Blood Supplies**

Just six years ago, no commercial means existed to test blood for HIV infection. Today, tests for HIV are available in most developing countries, and substantial screening for the virus is being done. Yet countries with limited resources face major barriers to establishing a safe and adequate supply of blood.

Health officials say that best way to control the transmission of HIV, Hepatitis B, Syphilis and other infectious agents in blood is to establish an integrated blood transfusion system. This involves proper blood collection, testing, storage and distribution, as well as trained technicians and appropriate criteria for using a centralized blood transfusion system.

“We need government commitment to sustain the blood programme beyond just HIV testing,” explains Dr. Emmanuel, who before joining the WHO staff in Geneva had directed the establishment in Zimbabwe of Africa’s most successful blood transfusion service.

In 1988, WHO launched the Global Blood Safety Initiative (GBSI) in conjunction with the League of Red Cross and Red Crescent Societies and other groups. The objective of the initiative is to support the development of integrated blood transfusion service in all countries.

“Prevention of HIV is of course very important, but it is part of a larger issue,” says W.N Gibbs, chief of WHO’s unit of Health Laboratory Technology and Blood Safety, which coordinates the GBSD “we have identified eight countries as priorities for development of their blood transfusion services and we hope to be able to mobilize the funding to start these projects this year.”

In addition to the eight countries, which have not been publicly identified, GBSI is working on several other countries on blood donor recruitment, training of technicians, prevention of HIV and other infections, and other programmes, according to Dr. Gibbs. All of this is designed to function

within the context of national health priorities and aids prevention and control plans.

### SELF ASSESSMENT EXERCISE

How do you ensure safe blood transfusion?

- i. -----
- ii. -----
- iii. -----
- iv. -----

*Hint: see 3.1*

### 3.2 Supply

Having adequate blood supplies is a major problem in most developing countries. According to a review of 185 countries in 1988, the supply of blood “in low-income countries is grossly insufficient to meet requirements,” reported Dr. C.G. Lopez of WHO. Low-income African countries (per capital Gross National Product less than US\$ 1000) collected less than three unit of blood per 1000 population, compared to 56 units per 1000 for high-income European countries. Blood can only remain in a blood bank for 12 to 35 days, depending on the anti-coagulant solution added, so a constant supply is needed.

In rural areas, most transfusions that occur in clinics or small regional hospitals come from family members called upon during an emergency. Such blood can now be tested for HIV, using new screening methods which give results in 10 to 15 minutes. Hence, screening system have to be in place. Large hospitals with well-trained staff can use the ELISA HIV-testing method, which requires one day for results but can test 50-100 samples at one time. The ELISA test cost about US\$1 per ample, compared to about US\$1.50-\$4.00 for quicker tests. However, ELISA requires sophisticated equipment and is only cost-effective if large numbers of samples are tested.

Another problem, particularly in many Latin American countries, is the use of paid donors. Paid donors resist blood screening because they do not want to endanger a source of income. Commercial donors often practice high-

risk behaviours for HIV infection and hence are often not desirable donors. To avoid the dilemma, the GBSI guidelines call for developing a volunteer donor system. “We are working on donor motivation and recruitment,” says Dr. Emmanuel, who is a member of the GBI secretariat.

### **3.3 Distribution**

The ideal blood distribution system would vary according to country. Generally, large countries such as Nigeria or Indonesia need to use testing facilities in different regions of the country. But smaller countries can use a centralized system, if they have good transportation systems which can quickly carry blood samples to centralized testing facilities.

In Zimbabwe, half of the blood is collected in mobile vans and half in fixed locations. “The blood is processed at decentralized blood banks and stored for use while the specimen tubes are sent overnight in refrigerated transport for testing at centralized testing sites,” explain Dr. Emmanuel. “This ensures safety, quality assurance and an economically sound testing policy. The ELISA test is used where at least 50- 100 units are tested (at one time), while other tests such as a simple particle agglutination test are used for lesser quantities. Where emergency blood transfusion needs testing, repaid simple tests are used, preferably using blood from previously screened, voluntary regular, non-remunerated donors.

“Blood samples that test negative (i.e. no HIV antibodies) are cleared by the blood bank for use and sent back out to the regional centers. In a regional system, blood is tested in large batches in regional hospitals. This approach requires more training than centralized systems, especially if the ELISA test is used.

“ The essential problems is the fragmentation of blood transfusion service,” explains Dr. Anthony Britten, former head of the blood programme for the League of Red Cross societies and now a consultant working closely with the GBSI. “ Many countries have no organized blood transfusion systems: Each hospital is forced to take care of its own needs, often in emergency situations. A few developing countries have been able to address their need for HIV- testing because the organizational infrastructure already exists. But where HIV testing is only possible on a hospital-by – hospital basis, it is not cost – effective and laboratory standards cannot be assured.”

Dr. Emmanuel explains that in many countries the infrastructure is not in place for even a regional system. The WHO National Programme Support

Unit/ GBSI is involved in developing transfusion system in such countries, including Ghana, India, Indonesia, Nigeria and Sierra Leone.

### **SELF ASSESSMENT EXERCISE**

Blood supply, distribution and transfusion are done by -----  
-----?

*Hint: see 3.2/3.3*

### **3.4 Establishing Criteria for Transfusions**

An integrated blood transfusion system includes proper blood collection, testing, storage, distribution and training of technicians. Even with all of this, however, adequate criteria are needed for using transfusions. A meeting held in Cameroon and recent events from Romania illustrate the importance of such criteria.

Cameroon. In November 1989, 45 physicians and blood bank managers participated in a workshop in Yaoundé, the capital of Cameroon, to establish guidelines for appropriate blood transfusions for that country. Nine of the 10 Cameroon provinces were represented at the meeting, sponsored by the U.S Agency for International Development and Family Health International's AIDSTECH division, in cooperation with the Cameroon National AIDS Control Service. Among the 11 formal presentations was a review by the Cameroon Ministry of Health on managing blood services in the context of the current GBSI focused on integrated blood transfusion systems.

The central problems that emerged in the discussions was an inappropriate use of transfusion, especially regarding conditions of anemia. In Cameroon, four of every five transfusions are in response to anaemia in women or children. Dr. J. Fosi-Mbantenkhu of the Central Hospital in Yaoundé explained that understanding the cause of anaemia is essential for its treatment and can prevent unnecessary transfusions.

The Cameroon conference concluded that the number of blood transfusions should be reduced, that family donation should be retained because of existing social structures, and that volunteer, unpaid donors should be encouraged so as to increase the supply of safe blood. The participants developed guidelines for appropriate blood transfusions regarding anaemia, as well; as acute hemorrhaging and elective surgery. Regarding chronic

anaemia, these guidelines recommended not using a transfusion if the hemoglobin level is greater than 6 grams per deciliters; if haemoglobin is less than 6 grams, health workers should consider transfusion if the anaemia cannot be clinically tolerated.

Romania: In February 1990, reports from Eastern Europe revealed that more than 700 children in Romania had been infected with HIV. That number is expected to increase; many children have already died from AIDS. Researchers suspect these pediatric HIV case may have been caused by the routine practice in Romania of injecting adult blood into young babies who appear thin or anemic. Since news of HIV infections spread, Romanian health officials have banned this widely discounted practice-known as micro transfusion- and begun screening blood. Both the Cameroon conference and the developments in Romania illustrate the broad range of issue triggered by the concern over HIV transmission.

#### **4.0 CONCLUSION**

“Development of integrated blood transfusion services may take years to achieve maturity, “explains the report on the Global Blood Safety Initiative formation meeting”. It is essential that the need to encourage development of integrated blood transfusion services should not inhibit active and aggressive efforts to prevent transmission of HIV and other infectious agents through blood transmission.”

#### **5.0 SUMMARY**

Blood transfusions can save lives. However, they can also result in unnecessary illnesses and death in areas where donated blood is not screened for HIV. To avoid HIV infection through blood transfusion, there is need for integrated blood transfusion system. There is need to establish criteria for blood transfusions.

#### **6.0 TUTOR MARKED ASSIGNMENT**

How do you ensure safe blood transfusion in relation to HIV infection?

#### **7.0 REFERENCES/FURTHER READINGS**

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## **UNIT 4     HIV AND BREASTFEEDING I**

### **CONTENTS**

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### **1.0    INTRODUCTION**

A World Health Organization (WHO) /United Nations Children's Fund (UNICEF) consultation meeting held in Geneva from 30 April to 1 May 1992, on HIV transmission and breastfeeding has recommended that the breast-feeding of babies should be promoted and supported in all populations, irrespective of HIV infection rates.

Studies continue to show that breast-feeding saves lives. For example, breast-feeding helps protect children from dying of diarrhoeal diseases, pneumonia and other infections. A major contributor to the more than three million childhood deaths from diarrhoeal diseases each year is artificial or inappropriate feeding.

Unfortunately, with the increasing prevalence of HIV (human immunodeficiency virus) infection around the world, more and more women of childbearing age are becoming infected and hence capable of passing the infection on to their unborn or newborn babies. Roughly one-third of the babies born world-wide to HIV infected mothers becomes infected with virus. Much of this mother-to-infants transmission occurs during pregnancy and delivery, although recent data confirm that some of it occurs through breast-feeding. Fortunately, the vast majority of babies breastfed by HIV-infected mothers do not become infected through breast milk

## 2.0 OBJECTIVES

It is expected that at the end of this unit, you should be able to:

- Understand the partnership between WHO and UNICEF on breast-feeding and infection.
- Appreciate WHO's position on breast-feeding as the feeding method of choice irrespective of HIV status.
- Know the major risks in breast-feeding especially mother-to-child HIV infection.
- Realize the importance of breast milk as the best for babies.

## 3.0 MAIN CONTENT

### 3.1 WHO/UNICEF Partnership

By the end of 1992, mothers infected with the AIDS –causing immunodeficiency virus (HIV) will give to projection to at least 1 million babies, according to projections by the World Health Organization. At least 250,000 of these infants will be infected with HIV through their mothers.

In the face of such news, health experts are looking for ways to control the further spread of HIV from infected mothers to their newborn children. Among the questions raised in this context is, “should HIV –infected mothers breastfeed?” while research on this issue is still in the early stages, experts agree that for now, in virtually all cases, mothers in developing countries should breastfeed.

“Those of us who work internationally believe that the potential risks, if any, of HIV transmission through breast milk is more than counterbalanced by the benefits of breastfeeding,” says Neal Halsey, director of the Division of Disease Control at the Johns Hopkins University School of Hygiene and Public Health.

In November 1989, Dr Halsey and other experts in this field met with representatives of the World Health Organization (WHO) in the Paris to review the WHO position regarding HIV-infected mothers and breastfeeding. At that meeting, held in conjunction with a major international conference, “the implication of AIDS for Mothers and Infants,” Dr Halsey and his colleagues reaffirmed WHO's position regarding breastfeeding and HIV infections, established in 1987. “Where the safe and effective use of alternatives is not possible,” the WHO

recommendations says, “breastfeeding by the biological mother should continue to be the feeding method of choice, irrespective of her infection status.”

### 3.2 Risks and Realities

“There is no additional risks from breastfeeding for a child already exposed to HIV during(the) pregnancy and/ or at delivery, reported the Zaire researchers at the 1989paris conference. The Zaire study was conducted in conjunction with the (CDC).”Because of the potential benefits of breast milk and its crucial important in child survival in developing countries, nearly all HIV infected mothers in Africa should breastfeed their children.”

A group of Australian researchers also reported their findings at the Paris conference.”(Where the mother was already infected at the time of delivery, there is no evidence of any additional risk (to infants) from breastfeeding, “the study concluded.

While researcher continues, policy makers and health practitioners must make judgment and choices now. An FHI research team led by Ms. Kennedy has developed a model for comparing the risks of breastfeeding and bottle-feeding for uninfected infants born to HIV-infected mothers. The question of whether to breastfeed ultimately focuses on the uninfected infants. The model compares the number of deaths that would occur under various conditions, especially the risk of infants mortality due to HIV infection, as well as diarrhea and dehydration associated with bottle-feeding where such risks are high, more babies would die if HIV – infected mothers bottle-fed rather than breastfed, the research concluded.

### SELF ASSESSMENT EXERCISE

Mention one of the realities of breast feeding

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 .....  
 .....

**Hint:** .....see 3.2

Breastfeeding is convenient, economical and medically beneficial – the baby gets protection against various childhood diseases through the breast milk. At the same time, breastfeeding may or may not transmit HIV. By

contrast, in developing countries, not breastfeeding is known to result in substantial infant mortality.

Which risk is greater – the risk of HIV infection through breastfeeding or of an infant dying because of not breastfeeding?

“We think there’s a low risk of infection from breast milk” says Margaret Stanback, an epidemiologist conducting two studies in Haiti of HIV – infected women who are breastfeeding. “At the same time, there’s a substantial risk of mortality from malnutrition and associated diarrhea illness in children who are not breastfeeding in the developing World.” Ms. Stanback and Dr. Warren Johnson, Chief of the Division of International medicine at Cornell Medical Center in New York City, work with both diarrheoa and AIDS clines in Haiti, them as clinical director of the studies.

“Until we have evidence of a substantial risk from breastfeeding,” concludes Ms. Stanback, the only responsible recommendation at this point is that women in the developing world continue to breastfeeding.”

### **3.3 Measuring the Risk**

What evidence is currently available on the risks of breastfeeding? What question remain to be answered since 1985, a handful of case reports have noted that HIV has been detected in human milk and that the virus may have been transmitted to infants through breastfeeding. Together, the reports involved fewer than 10 infants, however, and the transmissions came through unusual circumstances. For example, a wet nurse in the late stages of AIDS appears to have infected one infant. Other babies apparently became infected through breast milk from mothers who had received postpartum transfusions of blood infected with HIV, an increasingly rare circumstance. Evens so, HIV transmission through breastfeeding was considered to be possible

Prompted by these report, in 1985 the U.S Centers for Disease Control (CDC) recommended that

HIV – infected mothers bottle-fed. The United kingdom issued a similar recommendation. Under criticism for their statements, health officials in both the UK and United States eventually clarified their recommendations, explaining that they applied only to their countries – developed countries where infant formulas are readily available to virtually everyone, as is sanitary water for diluting the formula. The WHO, meanwhile, stressed the importance of breastfeeding by HIV – infected mothers in developing

countries where safe bottlefeeding alternatives are not readily or universally available.

Scientists have had less than a decade to investigate possible vertical transmission (i.e. from mother to child) HIV through breastfeeding – a short time for reaching definitive answer to such a complex problem. Researchers are using various approaches to examine two basic questions, both still unanswered. First, is HIV transmitted at all through breastfeeding? If so, what is the added risk of breastfeeding?

“We are trying to address both questions,” says Dr. Halsey of Johns Hopkins. Researchers there are looking to related issue for guidance. “This is quite similar to the story for hepatitis B,” says Dr. Haslsey. “It [hepatitis] is known to be in breast milk, but the rate of vertical transmission was not different for breastfed and non – breastfed infants”

There are obstacles to researching these issue. For example, a mother’s antibodies to various diseases remain in a newborn for up to 15 month or longer. Tests measure the presence of antibodies to HIV, not the presence of the virus itself, because this is much easier and less expensive. Hence, for general purposes, an infant must be at least 15 months old before researchers can know for certain if the antibodies present are residual from the mother or actually produced by the child.

### SELF ASSESSMENT EXERCISE

Mention one risk of breastfeeding

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***Hint: ..... See 3.3***

Assuming a 10 percent infant mortality rate, which is typical of much of Africa, and assuming the most conservative relative risk of bottle-feeding, 30,000 deaths would 100,000 uninfected bottle-fed babies would be expected, the FHI team reported in *Tropical Doctor*. “If all were breastfed, again assuming 10 percent infant, mortality, and assuming a 5 percent [HIV] transmission rate by breast milk, there would be about 14,000 deaths”<sup>5</sup> In simple terms, under these conditions, about twice as many bottle-fed as breastfed babies would die.

Ms Kennedy is now using this theoretical model to analyze existing data on HIV infection. “Our new study should help policymakers know how to apply our model to their specific situation,” she says.

### 3.4 Future Policy Directions

While research continues on this issue, HIV infection reaches deeper into the next generation. Meanwhile, policymakers look for guidance to the major international agencies examining the HIV transmission issue. The conflict between the WHO and the CDC recommendation has worried some researchers.

“Although the CDC recommendation that HIV [infected] mother refrain from breastfeeding has not been directed to women in developing countries, the danger exists that this recommendation will be heeded in situation for which it was not intended in situation the FHI group in *Tropical Doctor*. “There is a clear precedent for changes in infant of needing practices for – namely the decline of breastfeeding and the rise of artificial feeding – to follow the lead of industrialized nations.”

Margaret Oxtoby, form the AIDS programme at CDC, wrote in 1988 what many consider the most definitive overview of the HIV and breastfeeding issue yet available. “ In areas where breastfeeding is preferred even for the known HIV – infected mother, statements about HIV and breastfeeding may have adverse impact far beyond their intent,” she observed. “It is particularly worrisome that in developing countries where breastfeeding is most crucial to infant survival, concern about HIV transmission may have negatively affected general attitudes toward breastfeeding.

### 4.0 CONCLUSION

There is still uncertainty about the nature of HIV transmission from mother to child thus far, researchers have found that HIV – infected mothers transmit the virus to their babies 20 to 50 percent of the time, primarily *in utero or* during delivery. Put in a positive way, 50 to 80 percent of these infection appear to be free from the HIV infection, and show no evidence of the presence of HIV antibodies. This raises the question: Should the mothers of these infected babies breastfeed or not?

When considering HIV transmission, breastfeeding or bottlefeeding is a choice between risks and benefits

### 5.0 SUMMARY

- WHO in partnership with UNICEF recommends that the breast – feeding of babies should be promoted and supported in all population irrespective of HIV infection rates

- WHO says breastfeeding by biological mother should continue to be the feeding method of choice, irrespective of HIV status.
- One of the major risks in breastfeeding is the issue of mother – to – child infection especially of HIV.
- Among the realities of breastfeeding is that breast milk is still the best for babies

## **6.0 TUTOR MARKED ASSIGNMENT**

What are the risks and realities of breast feeding in relation to AIDS spread?

## **7.0 REFERENCES/FURTHER READINGS**

Dialogue on Diarrhoea (1995) HIV and infant feeding. The International Newsletter on the control of diarrhoea diseases. London: AHRTAG

Network (1990) HIV and Breast feeding Risk and Realities. Family Health International volume 11 Number 2

Progress in Human Reproductive Research (1992) Breast- feeding and HIV. Progress No 23. Geneva: WHO



## **UNIT 5      HIV AND BREAST FEEDING II**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    HIV transmission through breastfeeding
  - 3.2    Advice to all women
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  - 3.4    If a woman is positive
  - 3.5    Alternatives to breastfeeding
- 4.0    Conclusion
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### **1.0    INTRODUCTION**

It is tempting to look to new scientific discoveries such as the latest vaccines and medicines to reduce child deaths. However, the very best way to ensure babies grow up healthy is a traditional practice and costs nothing- breastfeeding.

Breast milk is nutritious and contains antibodies and other substances which protect against disease. Breastfeeding also reduces the risk of infection associated with poor food hygiene and inadequate water and sanitation. In developing countries artificially fed infants are at least 14 times more likely to die from diarrhea than infants who are breastfed.

Although breastfeeding is promoted in most traditional cultures, urbanization and promotion of infant's formula are undermining breast feeding.

Exclusive Breastfeeding feeding infants breast milk only with no other foods or fluids-is recommended until infants are 4-6 months of age. However, breast milk is often supplemented with other milk or gruels before infants are ready to be weaned.

Health workers present at birth and their contact with mothers and infants afterwards provides them with ideal opportunities to support mothers to establish and continue breastfeeding. Research has shown that if health workers give skilled support mothers are more likely to breastfeed.

Many women who are in paid employment outside the home think that they will have to stop breast feeding once they return to work. However, with good family and work place support this does not need to be the case.

In emergency situations such as refugee camps where access to water sanitation, food and health care is very is very important to recognize women's ability to breast feed even in difficult circumstance and to support mothers to provide the best food for their infants.

Finally, this issue looks at what advice to give women in area where HIV infection is common. The HIV virus has been found in the breast milk of women who are HIV positive, and there is small risk that HIV infection can be passed on to infants through breastfeeding. However the risk needs to be balanced against the danger of infants contracting other serious illnesses such as diarrhoeal diseases through alternative infant feeding, especially if families do not have access to clean water and sanitation.

## **2.0 OBJECTIVES**

At the end of the unit you will be able to:

- understand what HIV transmission through breast feeding is all about
- Advise women. Especially of child- bearing age whether they are HIV positive or negative on the issue of breastfeeding
- Appreciate the various alternatives to breastfeeding that are available

## **3.0 MAIN CONTENT**

### **3.1 HIV Transmission through Breastfeeding**

The HIV virus can be passed from a mother to an infant. This can happen at three stages: during pregnancy, childbirth or breastfeeding. However, most infants born to mothers who are HIV- positive do not become infected with HIV.

The HIV virus is found in breast milk, and some infants are known to have been infected through breastfeeding. However, it is difficult to assess exactly how much of a risk breastfeeding is. Few studies have been done, and testing a baby's HIV status is complicated. Available research suggests that about one in every seven breastfed infants whose mothers are HIV-positive may become infected by HIV from their mother's breast milk.

Recent HIV infection or advanced HIV infection mean that a woman has more of the HIV virus in her body fluids including breast milk. Therefore a baby is more likely to be infected if his or her mother was infected with HIV during pregnancy, child birth or breastfeeding, or if she is still with AIDS related illnesses.

Despite the risk, it is important to remember that most women are not infected with HIV, and that most babies' breastfed by HIV-positive mothers do not become infected through breast milk. Also, if the baby is already HIV-positive (having been infected in the womb or during child birth), breastfeeding will help him or her to stay healthier longer.

If a woman knows she is HIV-positive, it is important to help her decide whether this is important to help her decide whether the chance passing HIV to her baby via breastfeeding is greater than the risk associated with artificial feeding. For many HIV positive women, the risk of their babies dying if not breastfed will be much greater than the risk of passing on HIV.

### **3.2 Advice to all Women (whether or not they know their HIV Status)**

- Health workers should discuss the benefits of breastfeeding with all pregnant women.

It is also important to give information about how HIV and other sexually transmitted diseases (STDs) are spread. The best way to prevent transmission of HIV and other STDs is by supporting women to protect themselves from unsafe sex, and by encouraging men to take more sexual responsibility.

Women need to know that having safer sex (using condoms or abstaining from intercourse) is especially important during pregnancy and breast feeding.

### **SELF ASSESSMENT EXERCISE**

What is the main title of this unit?

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*Hint: see contents page*

### **3.3 If a Woman's HIV Status is not known**

- The vast majority of women do not know their HIV status. And are probably not infected with HIV. They should be encouraged to breast feed.

In most communities HIV counseling and testing service are not available so many women do not have the choice of finding out their HIV status. However, if a reliable testing and counseling services available, a woman may want to discuss whether to have an HIV test.

Counseling helps a woman to prepare for the possibility of knowing that she is HIV positive, and means that she can agree freely to test. The risk of infection through breastfeeding should never be used as a reason to put pressure on a woman to take an HIV test.

Knowing her HIV status may help her make this decision about either or not to breastfeed, and will, of course, affect other choices about her life.

### **3.4 If a Woman knows she is HIV- Positive**

- If a woman is HIV positive, in some situations (especially if she herself is ill) it may be better for her not to breast feed, but to find alternatives. However, alternatives may not be easily available or a woman may decide that the benefits of breastfeeding outweigh the possible risk of transmission of HIV. Health workers should help a woman to discuss the implications of being HIV positive, and to make an informed choice. Find out what the woman already knows about HIV infection and breastfeeding, clarify any misunderstandings, and explain the possible risks and benefits. Reassure her that, whatever choice she makes, she is not to blame if her baby becomes ill.

#### **Issue to Consider**

- Does she have access to clean water? Can she afford fuel or electricity for sterilising feeding utensils?

- Does she have support from family or friends to help her prepare and give alternative feeds?
  - Does she have access to animal milk? Is there a nearby shop which regularly stocks formula milk?
  - Can she afford to feed her infant with animal or formula milk?
- In many situations it will be safer and more feasible to breastfeed.

### 3.5 Alternative to Breastfeeding

Infant's formula is the most common alternative. However it is expensive, and hygienic, preparation and feeding can be difficult in many households. To feed an infant for six months, at least 44tins of 500g are needed.

Animal milk, such as cow or buffalo milk can also be given. Animal milk should be diluted and sweetened (one cup of water three cups of milk, four teaspoonfuls of sugar). It also needs to be brought to the boil to reduce the amount of curd and kill potentially harmful germs.

Giving expressed sterilized breast milk is another option. Bringing breast milk to the boil or pasteurizing it (heating to 62.5 degree centigrade for 30 minutes) kills HIV as well as other organisms

In some places, it is usual for another woman, often a relative, to breastfeed a baby if the mother is unable to do so. This option can be considered, but is not advised in area where HIV is common since there is a possibility that this other woman may be HIV positive.

### SELF ASSESSMENT EXERCISE

List two alternatives to breastfeeding

- i. \_\_\_\_\_
- ii. \_\_\_\_\_

*Hint: see 3.5*

### 4.0 CONCLUSION

In setting's where the main cause of death during infancy is not infectious diseases and the infant mortality rate is low, the consultation concluded that the usual advice to pregnant women known to be infected with HIV should

be to use a safe feeding alternative for their baby rather than to breastfeed. In these settings, voluntary and confidential HIV testing, including pre and post-test counseling, should be available to women, and they should be encouraged to seek testing before delivery.

The consultation stressed that when a baby is to be artificially fed, the choice of substitute feeding should not be influenced by commercial pressures. It called on companies to respect the international Code of Marketing of Breast milk Substitutes.

In all countries, the first and overriding priority in preventing HIV transmission from mother to infant is to prevent women of childbearing age from becoming infected in the first place.

Faced with many difficult choices concerning AIDS, policymakers can at least take heart that breastfeeding is still the preferred method of infant feeding in developing countries, even for mothers known to be infected with HIV. Dr Oxtoby concluded her long examination of this issue with two sentences that still serve as the best guide in developing countries. “careful studies may unravel the answer to these questions and assist clinicians in individual situations in which the mother is known to be infected with HIV or has been recently exposed to HIV”, Dr Oxtoby explained. “Meanwhile the strong evidence of the beneficial effects of breastfeeding should continue to provide the framework within which broad public health policies are developed.”

## **5.0 SUMMARY**

- Breast-feeding of babies should be promoted and supported in all populations, irrespective of HIV infection rate.
- Because of the potential benefits of breast milk and its crucial importance in child survival in developing countries, nearly all HIV-infected mothers in Africa should breastfeed their children
- When considering HIV transmission, breast feeding or bottle feeding is a choice between risk and benefits
- Until we have evidence of a substantial risk from breastfeeding, the only responsible recommendation at this point is that women in the developing world continue to breastfeed
- Breastfeeding is still the preferred method of infant feeding in developing countries, even for a mother infected with HIV.

## **6.0 TUTOR MARKED ASSIGNMENT**

Discuss the various alternatives to breast feeding that you know

## **7.0 REFERENCES/FURTHER READINGS**

The International newsletter on the control of diarrhoea diseases (1995)  
Breastfeeding is best feeding. LONDON: AHRTAG.

The International newsletter on the control of diarrhea diseases (1993) back  
to basics: What is ORT. LONDON: AHRTAG.

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Anti- diarrhea withdrawn. LONDON: AHRTAG.



## **MODULE 5**

Unit 1	Integrating Aids Control Into Family Planning (FP) Services
Unit 2	Changing High Risk Behaviour Through Peer Education
Unit 3	HIV And Prostitution
Unit 4	General Information About Deadly Aids

### **UNIT 1     INTEGRATING AIDS CONTROL INTO FAMILY                  PLANNING (FP) SERVICES**

#### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Method mix and male involvement
  - 3.2 Uses for AIDS or FP
  - 3.4 Do we need to recommend two methods routinely?
  - 3.5 Cross – Infection
  - 3.6 FP programme and STD treatment
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Readings

#### **1.0 INTRODUCTION**

Looking to the year 2000 and beyond there are wildly differing projections of the number of people who will be infected worldwide. The projected number of adults infected ranges from 38 million to 110 million plus 10 million children. It is projected that 42% of infected persons are expected to be in Asia, while 31% will be in Africa.

With this brief introduction, we will turn to family planning issues. Underlying the issues is the more basic question: what constitutes high – quality FP services in the era of AIDS?

#### **2.0 OBJECTIVES**

At the end of this unit, you should be able to:

- Explain the significance of integrating AIDS control into family planning services
- Identify the need for HIV risk assessment to enhance STD/AIDS prevention
- Appreciate the impact of cross-infection while using family methods to control AIDS

### **3.0 MAIN CONTENT**

#### **3.1 Method Mix and Male Involvement**

Only one widely available FP method – latex male condoms- can be unequivocally said to provide protection against AIDS and other STDs. Yet male latex condoms play a fairly small role in FP programmes in most countries (although significant numbers of condoms are used in Japan, Bangladesh, and Indian). Most clients of FP programmes are women. FP programmes could begin to distribute condoms to their female clients on a various expanded scale. But we do not know whether the condoms would end up being used by male partners, and need more research on this. So FP programme difficulties in reaching men directly may be a limiting factor in increasing condom use. This is not to say that FP programmes have not made significant attempts to reach men. Some of these attempts have been reviewed in a recent issue of the Family Health International (FHI) journal, Network. We need to continue to try new approaches and prepare materials and messages for men. All men attending STD facilities should also receive adequate condom supplies. It is thus much better to see more couples using condoms, perhaps instead of other methods? If so, will the cost of FP Programmes go up, both because it is more expensive to reach men and because condoms are a more expensive method? And will women be able to accept that men will have more control over fertility? These are some of the issues we need to think about as we strive to increase male involvement.

#### **3.2 Uses for AIDS or FP**

FP programmes can no longer just tell people: “Condoms are not a very effective’s method. “They must help people use condoms more effectively by giving them a few crucial facts, conveying to people the idea that condoms can be very effective method if used correctly and consistently, and making sure people get adequate quantities of condoms in good condition.

Although condoms used for FP are physically identical to those used for AIDS prevention, their use for FP is different than for STD/AIDS prevention. Condom use for AIDS prevention is much more demanding. It requires many more condoms and use over life-time on all occasions of sexual intercourse unless both partners are uninfected and mutually monogamous or they live in an area where AIDS is rare.

The significance of this for FP is that AIDS prevention requires greater condom supplies to be used for people not in need of FP, including women who are pregnant, in lactation, sterilized, or using other forms of contraception.

AIDS prevention programmes should also work with people such as commercial sex workers (prostitutes) who have sex much more frequently than typical FP clients. The traditional couple years of protection (CYP) numbers such as 144 or 150 condoms per years are totally inappropriate for projects with commercial sex workers. AIDSTECH has recently prepared a manual for estimating condom needs in AIDS prevention programmes such as those with commercial sex workers.

In many countries, FP programmes control condom ordering, warehousing, and distribution. In this case, they must be sensitive to the supply needs of AIDS prevention programmes and STD control programmes which depend on condoms – and not just be concerned about their own needs. I hope that supplies of condoms can be maintained by the co-operative efforts of the United States Agency for International Development, the United Nations Population Fund, IPPF, the World Bank, the Global AIDS programme and others including social marketing and commercial organizations.

### **3.3 Do We Need Recommend Two Methods Routinely?**

Among the difficult question raised by the AIDS epidemic for FP:

“Should FP programmes routinely recommend that people use two methods?” That is, condom for AIDS protection and another method for effective FP? we believe the answer is “No” The commodity requirement would be enormous. Also, we question whether many people will continue to use two methods, especially if they are both temporary methods (condoms and pills; condoms and spermicide). But we need more research on how practical it is for people to use two methods.

### 3.4 HIV Risk Assessment

In our view, rather than recommending that all family planning clients use condom, we need a more targeted strategy. Those at risk of HIV should be urged to use condoms either alone or in addition to another method. But how do we know who is at risk of HIV? Here is where HIV risk assessment comes in. HIV risk assessment is a verbal approach to determining whether a person is at risk of HIV by either administering a check list [FP programmes are familiar with check lists such as for pills or intrauterine devices (IUDs)] or by telling people what the risk factors are for HIV and then simply asking them whether they think they are at risk (without determining which risk factors they may have –thus preserving their privacy ).

BEMFAM, the IPPF affiliate in Brazil, recently conducted a study comparing different approaches to HIV risk assessment. They found women very eager to have more information about their risks and were surprised at how many women consider themselves at risk of HIV.

Once a person has been identified as potentially at risk of HIV, then the difficult issue of introducing condoms into a stable relationship arises. How this can be done will vary by culture, and people may need help in thinking how they can do it with the fewest negative consequences.

#### SELF ASSESSMENT EXERCISE 1

HIV risk assessment means knowing those at risk of being infected with HIV. Yes or No?

*Hint: See 3.4*

### 3.5 Cross –Infection

Dilemmas for FP caused by the AIDS epidemic do not end with condoms. There is also the important issue of cross-infection. We used to be mainly concerned about clients getting infections; we now must also be concerned about risks to providers. FP workers having contact with blood or vaginal fluid should have gloves. I was recently in Tanzania, a relatively high prevalence country. A FP nurse told me that gloves are only available for people who work with AIDS patients and not for FP workers. There is much talk about workers taking ‘universal precaution’ (i.e. Acting on the assumption that all clients are infected), but I doubt if there is much

monitoring of whether workers are following these precautions or even if they are able to follow them.

### **3.6 FP Programmes and STD Treatment**

The final dilemma we want to mention is whether FP programmes should give STD treatment. STDs are responsible for about 75 million illnesses among women each year. They are on the rise in many countries and are probably more common in developing countries than was once thought. They have many harmful consequences for women and their children (infertility, cervical cancer, pelvic inflammatory disease, ectopic pregnancy, miscarriage, neonatal infection, low birth weight etc).

In favour of this move: FP facilities could be non-stigmatizing environment for women (in contrast to facilities for men or prostitutes). Very often, women have no place to turn for STDs and are even very embarrassed at monitoring the problem. If a FP programme has STD diagnosis and treatment available, it can provide continuity of care for its clients. By treating STDs, this is a way of reducing the risk of acquiring or transmitting AIDS.

Points against: STD diagnosis and treatment is a new area for FP. Staff need to be trained; some laboratory facilities may be necessary, and it requires staff time and space. Some STD tests are expensive and so are the drugs. FP programmes may not know where to begin. But there are FP programmes, for example in Latin America, which are beginning on a small scale.

One option is to establish STD treatment in one facility in an area where there is an STD problem. By starting on a small scale, it would be possible to learn from the experience, assess costs, demand, and technical competence before expanding. In some cases it has been possible for FP programmes to obtain outside funding for setting up such facilities. As the concern about STDs increase, funding for start-up cost is likely to be more available than in the past.

In our view, most countries should be considering at least the basic level of integration unless AIDS is very rare. Integration seems to be occurring more rapidly in Latin America and Africa than in Asia, perhaps because these areas have longer experience with AIDS. Paradoxically, well-established FP programmes which rely heavily on the most effective methods may have a more difficult time figuring out how to make more use of condoms in family Planning. An example of this is Thailand.

## SELF ASSESSMENT EXERCISE 2

What is cross infection?

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*Hint: please see 3.5*

### 3.7 Models of AIDS/FP Integration

#### A Basic (low prevalence area)

- Educate FP providers about AIDS/AIDS prevention, correct condom use
- Increase condom supplies
- Encourage FP providers to promote and distribute condoms
- Co-ordinate condom commodity needs, warehousing, quality control and distribution for both AIDS prevention and FP.
- Prepare and distribute information, education and counseling (IEC) materials on AIDS prevention along with FP materials
- Improve STD referral
- Improve cross-infection control (Including supply gloves for FP workers doing IUD insertions, pelvic examinations sterilizations)

#### B. Moderate (medium prevalence area)

- Activities as in model A
- Initiate HIV risk assessment to determine which FP clients will need to use condoms either with another method or alone
- Initiate projects with men and /or with individuals at risk of AIDS
- Train FP providers in AIDS prevention counseling
- Instruct FP workers to promote condom use aggressively
- Promote condom use for both AIDS and FP as part of social marketing
- Work closely with AIDS prevention organizations

#### C. Extensive (high prevalence area)

- Activities as in models A and B
- De-emphasize intrauterine devices

- Offer HIV testing and pre- and post- test counseling
- Train and supervise FP providers to counsel HIV individuals on FP

In order to pull together the various threads, we offer three models of how integration of FP and AIDS prevention could take place. They are on a continuum. Each FP programme will need to consider honestly what makes its particular setting.

The three models depend on the level of HIV infection in the population. Although it is difficult to specify exactly what constitutes low, moderate, and high prevalence, low might be considered to be under 1% of the general population, and high, over 10%, with medium in between.

#### **4.0 CONCLUSION**

Whether we like it or not, the AIDS epidemic is affecting FP in many areas of the world. Over the past decade, the epidemic has moved closer to the clients of FP programmes. We must reassess the value of condoms, teach people how to use them better, solve condom commodity problems, figure out simple ways of doing HIV risk assessment to determine who needs to use condoms, and then help those individuals introduce condoms into their relationships. We must find the resource to provide gloves for FP workers exposed to bodily fluids and make sure they can follow universal precautions. In short, we need to think about what kinds of integration of FP and AIDS prevention are appropriate in our particular setting.

FP programmes have grown and adapted to meeting changing condition over the past 40 years. We have faith that they will be able to meet these and other new challenges in the years ahead.

#### **5.0 SUMMARY**

- There are four prongs to the current AIDS prevention strategies: AIDS education; condoms STD treatment and prevention; and fewer sex partners
- Only one widely available FP method-latex male condoms- can be unequivocally said to provide protection against AIDS and other STDs.
- It is cost effective and highly beneficial to integrate AIDS control into family planning activities
- Research has shown the need for HIV risk assessment to enhance STD/AIDS prevention

- There is need to avoid cross- infection especially through body fluid such as blood, vaginal discharge, semen, sweat etc, while using family planning methods to control AIDS.

## **6.0 TUTOR MARKED ASSIGNMENT**

What is the purpose of HIV risk assessment while using family planning methods to control AIDS?

## **7.0 REFERENCES/FURTHER READINGS**

Chaya, N; Amen K.A and fox, M (2002) Condoms count: meeting the Need in the Era of HIV/AIDS population Action International: USA

Global AIDS News (1993) Captain condom targets gay and bisexual men.

Network (1990) AIDS and the Family .Family Health International Volume 11 Number 2

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Williamson, N.E (1992) Delivering Family Planning Service in the era of AIDS and STDs. USA: The Parthenon Publishing



## **UNIT 2      CHANGING HIGH RISK BEHAVIOUR THROUGH PEER EDUCATION**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Content
  - 3.1    The Project-Peer Education
  - 3.2    The Pilot Project in Ghana
  - 3.3    Peer Education Expands to other Countries
  - 3.4    Limitation of Peer Education
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

From street corners, hotels and bars, commercial sex workers in developing countries are learning about, AIDS prevention, through series of projects involving a process known as peer education. In this approach, sex workers are trained to teach their co-workers about the human immunodeficiency virus (HIV) that causes AIDS, and about the importance of using condoms. Pilot projects to study peer education have been conducted among female sex workers in Ghana, Cameroon and Mali, with technical assistance from Family Health International. Findings have provided valuable lessons for these and other peer education programmes.

### **2.0    OBJECTIVES**

At the end of this unit, you should be able to:

- Identify high risk behaviour that could aid AIDS spread
- Identify certain projects aimed at changing high risk behaviours
- Understand some problems identified and the solutions offered
- Identify that peer education is very crucial in effecting behavioural change.

### **3.0 MAIN CONTENT**

### **3.1 The Projects**

In each of the pilot project, prostitutes who received health education increased condom use with the paying clients. However, the sex workers acknowledged that they usually don't use condoms with their regular partners."

Each of the pilot projects used the same basic approach. Leaders within the prostitute community were identified, recruited and trained regarding HIV/AIDS and prevention of infection and transmission. Peer leaders then worked directly with other sex workers educating them about HIV/AIDS, providing information about safer sexual practices and distributing condoms.

The projects varied in recruitment methods, follow-up approaches and distribution systems for the condoms. In some of the projects, the condoms provided were spermicidally treated. In several of the countries, the prostitute leaders encouraged their peers to use a spermicidal suppository when a client would not use a condom.

### **3.2 The Pilot Project in Ghana**

In early 1986, no clinical case of AIDS had yet been diagnosed in Ghana; testing showed that only one of 98 prostitutes living near Accra, the capital, was infected with HIV. By the end of 1986, however, testing showed 72 Ghanaians infected with the virus, 63 of them women. Many of these women reported that they had recently come back to Accra, after participating in commercial sex work in other African countries.

The strategy of this first pilot project was to test the feasibility of an approach to contain the spread of HIV infection in Accra by increasing the use of condoms and spermicides among sex workers. The Ghana Technical Committee on AIDS directed the project; FHI provided technical assistance with funding from the American Foundation for AIDS Research (AMFAR). The chairman of the Ghana committee, Dr. Neequaye, directed the on-sited project work.

In the spring of 1987, Dr. Neequaye and his project team organized discussion with small groups of female prostitutes at three sites where sex workers congregated and where there was an informal network of communication among them. Most of the women had heard of AIDS but did not know how it was transmitted, the project team learned. The women thought they were at elevated risk but didn't know how to protect

themselves. These discussions led to the identification of six women who had senior status among their peers and the ability and motivation to counsel others.

The project staff and peer educators recruited sex workers for the programme. After being trained, six peer educators talked with 72 other prostitutes about AIDS and supplied them with condoms and spermicidal foaming tablets. The stipend, delivered the condoms and spermicides in informal, convenient ways. Lessons from the Ghana pilot effort have been incorporated into many of these studies. Survey questions have been refined, as have expectations regarding, for example, the number of women who are likely to continue to participate in the full project and the ability to determine if the HIV transmission rate is declining

### **SELF ASSESSMENT EXERCISE**

What is the project all about?

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### **3.3 Peer Education Expand to other Countries**

Project in Cameroon and Mali have confirmed the basic findings in Ghana: Peer health education may be an effective way to provide HIV/AIDS information to commercial sex workers, and it results in reports of increased condom use. However, it is still not known whether actual condom use is increasing significantly or whether this behaviour change will be sustained over a long period of time.

In Cameroon, 11 female prostitutes received a monthly stipend to work with 125 of their peers. As in Ghana, a large number of women dropped out of the study. However, this is not surprising since sex workers in Cameroon, as elsewhere, are very mobile and often change their places of employment. Among the 73 prostitutes who completed the final interview, the number reporting frequent condom use jumped eight-fold, from 6-48 percent.

The popularity of the Cameroon programme resulted in additional prostitutes receiving educational materials and condoms, as it had in Ghana.

FHI is providing technical assistance and funding to Cameroon national AIDS Control Service to expand the programme to an estimated 10,000 prostitutes and clients in three cities.

In another effort, the Mexican Federation of Private family Planning Associations (FEMAP) in 1988 began integrating a peer education project into its existing family planning programme. In the first year, the FEMAP research team conducted surveys throughout a large “red light” district frequented by Mexican and by foreigners crossing the border from El Paso, Texas. It is a highly organized and complex business, involving an estimated 1500 commercial sex workers working out specific establishments and on the streets. FEMAP’s efforts include on-site education programmes and peer education training.

The project enrolled and trained 74 prostitutes as peer educators. In December 1989, 56 were still involved in the programme, reflecting a 23 percent dropout rate. These peer educators are providing information to an average of 255 commercial sex workers per month. Results of reported condom use are not yet available. The Mexican experience is the first FHI-assisted peer education effort conducted as part of an existing family planning programme.

### **3.4 Limitation of Peer Education**

Researchers are cautions about reaching definitive conclusions from peer education efforts “this is a mobile population,” says Mr. Spilsbury of AIDSTECH, who is working on expanded programme in Mali and Cameroon. “The women who drop out are probably the ones not using the condoms. So the study results are thus not conclusive “we can’t be certain of their actual behaviour”, concludes Mr Spilsbury.

Perhaps the most striking limitation to these research projects is the degree to which they fail to influence the behaviour of clients and regular partners. In the follow- up interviews in the Cameroon project, for example, 63 percent of the prostitutes reported that their clients were opposed to using condoms. When the client refuse to use a condom, more than one-third of the prostitutes had sex with no protection, a third refused sex. Other studies show that women who rely on commercial sex work to support themselves and their families are reluctant to antagonize clients who are unwilling to use condoms and might take their business elsewhere. Moreover, these women may wish to marry and become pregnant, thereby reducing their incentive to use condoms with their regular partners.

“Peers education is a good way to reach prostitutes and to increase the use of condoms, “says Dr. Peter Lamptey, director of AIDSTECH. “ But to be effective, it has to be part of a larger partner, as well as other high-risk groups. And condoms must be readily available to the target population.

### **SELF ASSESSMENT EXERCISE**

Mention one limitation of peer education

1) -----

*Hint: see 3.4*

## **4.0 CONCLUSION**

Since the Ghana pilot project, peer education has been incorporated into many HIV intervention efforts. Projects similar to the Ghana study have been completed in Cameroon and Mali, with assistance from FHI and funding from USA for Africa. Other HIV intervention projects involving peer education are underway in Zimbabwe, Nigeria.

## **5.0 SUMMARY**

- Peer education is of great significance in effecting behavioural change
- The pilot projects have been very promising, a good start. But they raise questions about the next steps
- The Mexican project is the first FHI-assisted peer education effort conducted as part of an existing family planning programme,

## **6.0 TUTOR MARKED ASSIGNMENT**

What are the limitations of peer education according to the high-risk behaviour project?

## **7.0 REFERENCES/FURTHER READINGS**

Global AIDSNEWS (1993) Effective prevention could halve new HIV infections. The Newsletter of the World Health Organization Global programmes on AIDS. 1993 No 3.

Network (1990) Peer Education: learning how to change high risk behaviour. FHI research news April, 1990.

Web site: [www.google.co.uk](http://www.google.co.uk)

## **UNIT 3      HIV AND PROSTITUTION**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main contents
  - 3.1 Worldwide project
  - 3.2 Geneva participants
  - 3.3 Report of projects
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor Marked Assignment
- 7.0 References/Further Readings

### **1.0 INTRODUCTION**

Preventing the spread of HIV infection among prostitutes, clients and partners is both controversial and complex. In some cases, commercial sex workers feel that they are being blamed unfairly for the spread of AIDS, policy makers are reluctant to spend public money on such a stigmatized population. Finally, health-care providers may wonder how best to assist a special population of which they have little knowledge of understanding.

Nevertheless, efforts to control the spread of AIDS are focusing increasingly on prostitution. By definition, prostitutes engage in sex with multiple partners, placing themselves at high risk for infection with the human immunodeficiency virus (HIV) that causes AIDS. Moreover, in many settings particularly in large Western cities some sex workers are also intravenous drug users (or have partners who are), putting them at additional risk for HIV infection.

### **2.0 OBJECTIVES**

At the end of this unit, you should be able to:

- Identify the role of Commercial Sex Workers' as one of the most at risk groups
- Identify the rationale behind the world-wide project against the HIV/AIDS scourge.



### **3.0 MAIN CONTENT**

#### **3.1 World -Wide Project**

Projects underway around the world have had varying degree of success in persuading prostitutes and their partners to modify high –risk behaviours. To review available information on current intervention strategies, the World Health Organization’s Global programme on AIDS (WHO-GPA) convened a special meeting last summer in Geneva. Twenty-two participants from 18 countries attended the four-day meeting, including expert in medical anthropology, prostitution, epidemiology, programme evaluation, biomedical research and the social science aspects of AIDS and other sexually transmitted disease (STDs). It marked the first time that representatives of prostitutes’ advocacy groups had ever attended a WHO consultation.

#### **3.2 Geneva Participants**

Participants at the Geneva meeting reported on a variety of projects involving peer education, information dissemination, condom distribution, and HIV control and treatment programmes for commercial sex workers and their clients. They also discussed alternative employment programmes for prostitutes seeking to leave the sex industry. The meeting featured reports on activities in Australia, Brazil, Cameroon, Costa Rica, the Dominican Republic, Ghana, Greece, Kenya, Mexico, the Netherlands, Peru, the Philippines, Thailand, the United States and Zaire. Because there are many types of sex workers, different approaches are necessary to gain their interest and cooperation in educational programmes. Programmes may be based within prostitute organizations, health clinics or communities. Education effort may include AIDS prevention and treatment of STDs. Finally, participants noted that content of the message must be simple and understandable within the context of the local culture.

#### **SELF ASSESSMENT EXERCISE**

What is the world-wide project about?

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*Hint: see 3.1*

#### **3.3 Report of Projects**

Again and again, participants at the WHO meeting emphasized the need to reach clients and regular partners, as well as prostitutes. Yet, most

intervention projects have left client education to the financial stake in not alienating or frightening their customers. Moreover, strategies that work with female prostitutes may not be effective with clients, because men and women may be motivated by different factors. Participants suggested that client education programmes could take place at sites where sex workers meet their patrons, such as at bars and hotels; at work places, such as factories and transport companies; at clinics where clients may receive treatment for STDs; and military camps.

The WHO meeting also focused on the need for expanded efforts marked at distributing condoms, preventing and controlling other STDs related to HIV transmission, and evaluating the effectiveness of programmes. In addition, participants discussed the policy and legal barriers for effective intervention efforts among prostitutes and clients. For example, in areas where prostitution is illegal, mandatory registration and testing for HIV infection might drive sex workers underground and make them less likely to take advantage of prevention and treatment services. Similarly, the illegality of prostitution can make it difficult for health workers to reach sex workers and clients.

A consensus statement summarizing the findings of the WHO meeting recommended expanded efforts for preventing HIV infection in prostitutes and clients through programme development, (often at home) rather than on a prescribed schedule, such as weekly appointment. The condoms and spermicides were given to the women free of charge.

At the beginning of the project (June 1987), 72 prostitutes completed a survey on knowledge, attitudes and practices concerning AIDS/HIV and sexual practice. In January 1988, when the pilot project ended, only 45 of the original 72 women completed the follow – up interview. Before the peer education process had begun, one in three of the women (among the original 72) understood correctly that they could contract AIDS from a man who appeared to be healthy. At the end of the study 9 out of 10 women (among the final 45) understood this point and reported use of condoms and/or spermicide.

The Ghana projects also showed the difficulties in relating reported condom use to rate of HIV transmission. Unforeseen benefits arose during the projects as well. As words spread among sex workers about the purpose of the condoms, more women wanted to participate. After the pilot study in Ghana had begun, another 144 prostitutes were enrolled in a supplementary programme. This priced through the Ghanaian social marketing programme.

FHI is now working with the Ghana Ministry of Health to develop and implement a city-wide health education and condom distribution programme for sex workers and their partners.

### **SELF ASSESSMENT EXERCISE**

What is the name of the African country that also benefited from the project?

-----  
*Hint: see 3.3*

## **4.0 CONCLUSION**

It is glaring and quite convincing, from the report of this project that prostitution has a lot of impact on the spread of HIV/AIDS.

Report of this project also showed that more women volunteered to participate following reassurance that tended to minimize stigmatization, coupled with free distribution of condoms and education on the combined use of spermicides for more effective prevention of HIV infection.

There is therefore need for more education, mobilization and sensitization to reduce stigmatization so as to enhance better participation in future.

## **5.0 SUMMARY**

- Prostitution is practiced all over the world
- The most at risk group as far as HIV infection is concerned are commercial sex workers.
- Prostitutes (commercial sex workers- male and female). Their customers and regular partners are the main source of AIDS spread globally
- Sex still accounts for the highest number of HIV infections
- Participants in the project emphasized the need to reach beyond commercial sex worker to their clients and regular partners

## **6.0 TUTOR MARKED ASSIGNMENT**

How will you review the results of the Ghana project on HIV and prostitution?

## **7.0 REFERENCES/FURTHER READINGS**

Global AIDSNEWS (1993) Effective prevention could halve new HIV infections. The News letter of the World Health Organization No 3, 1993

Network (1987) Maternal Mortality is global problem. Family Health International Vol.9 No 1, 1987

World Health Organization and United Kingdom Government (1988) London Declaration on AIDS prevention. World Summit of Ministers of Health on programmes for AIDS prevention.

## **UNIT 4      GENERAL INFORMATION ABOUT DEADLY AIDS**

### **CONTENTS**

- 1.0    Introduction
- 2.0    Objectives
- 3.0    Main Contents
  - 3.1    Essential Facts
  - 3.2    AIDS Symptoms
  - 3.3    Other Important facts
- 4.0    Conclusion
- 5.0    Summary
- 6.0    Tutor Marked Assignment
- 7.0    References/Further Readings

### **1.0    INTRODUCTION**

This unit titled general information about AIDS is a summary of the entire course, giving highlights of major issues discussed throughout the length and breadth of the course. This is not suggesting that you concentrate all your efforts on this unit and neglect others---NO! Issues discussed here range from general to specific information, alongside essential facts to the minutest ones from infection to full-blown AIDS, Its treatment, prevention and control. Also discussed are the different modes of transmission as well as AIDS, testing.

### **2.0    OBJECTIVES**

At the end of this unit, you should be able to:

- Use this portion as a revision note
- Apply the unit while responding to the self assessment exercise and the tutor marked assignments
- Employ this to review various other units in this course with ease
- Appreciate the usefulness of this unit while preparing for the end of course examination.

### **3.0    MAIN CONTENT**

### **3.1 Essential Facts**

The AIDS virus is spread by transmission of infected bodily fluids; by blood most frequently, less frequently through swimming pools, sweat, tears, second – hand clothing or telephones. The vast majority of AIDS virus infections are transmitted by sexual means, especially those that cause even a microscopic cut or tear during relations. Anal sex, commonly practiced by male homosexuals, is an exceptionally efficient way to transmit the virus and other diseases. As a consequence, in the United States and many other developed nations, around two-thirds or more of AIDS infections occur in male homosexuals or bisexuals. An additional 20 percent or so of AIDS cases occur among intravenous drug abusers who share needles. Up to 80 percent of AIDS infection in heterosexuals in some social groups are spread by illicit intravenous drug abuse or by sexual relations with persons who are or were intravenous drug abusers.

In Africa, AIDS occurs about equally in promiscuous heterosexual men and women. It also occurs as a result of contaminated medical injections, and through childbirth. In some developing nations that lack sufficient testing facilities, contaminated blood transfusions cause a sizeable portion of infections.

### **3.2 AIDS Symptoms**

AIDS can affect virtually every part of the body and can progress in numerous ways. After infection, the virus may linger unnoticed and symptomless in the body for a few years to ten or more years before it turns into a disease form. During this time the symptomless person can pass on an infection. Between 30 and 50 percent of babies born to infected mothers will pick up the AIDS infections.

Commonly the first stage of the disease involves acute illness with such symptoms as fever and swollen lymph glands, night sweats, sore throat, nausea, vomiting, headaches, body aches, and loss of appetite. Often that stage ends and the patient feels better.

Then comes a second stage when many patients suffer chronically enlarged lymph nodes, chronic fever, diarrhea, weight loss and extreme fatigue. Some infected persons, however, are troubled with only a few of these symptoms. Doctors refer to a wide range of possible symptoms, some persistent, some not, by the term “AIDS-Related Complex,” or ARC. A weakened immune system is marked by ordinarily minor infections causing serious illness. The most common of these “opportunistic infections” is a

form of pneumonia, pneumocystis carina, which afflicts about two-thirds of AIDS sufferers, Victims often develop a mouth and throat fungus or a form of skin cancer called kaposi's sarcoma. Many AIDS patients suffer memory loss, difficulty concentrating, as well as tremors, wobbly walking and incontinence.

Technically, no one dies of AIDS, AIDS usually destroys the functioning of the immune system. Without the immune system any disease can invade and kill the body.

### SELF ASSESSMENT EXERCISE 1

Mention the medium of HIV transmission with five example

- i. \_\_\_\_\_
- (a).....
- (b).....
- (c).....
- (d).....
- (e).....

*Hint..... See 3.1*

### 3.3 Other Important Facts

The AIDS virus integrates itself into the working of the victims' cells. Thus when the virus infects humans, it is there for as long as the person lives. While scientists formerly thought only 20 percent of infected persons would develop some form of the disease within five years after infection, more recent estimates put the chances of eventually developing the disease at more than 50 percent, and some authorities' estimate 100 percent eventually will. The AIDS virus is an organism that will not survive long without the right nutrients and environmental conditions. It can be deactivated outside the body quickly with dilute bleach and hormone disinfectant.

- Semen appears to be a particularly effective agent for spreading AIDS, because the virus concentrates in large numbers there. Semen used in artificial insemination has been proven responsible for several cases of AIDS infection.
- While AIDS most frequently occurs in persons engaging in promiscuous sexual behaviour, the virus can be transmitted by just

one sexual or one contaminated needle injection episode. The risk of eventually becoming infected goes up the more one engages in high risk behavior

Precaution: to date, there is no evidence showing that AIDS infections are spread by casual nonsexual social or work contact or by food, water, toilets, swimming pools, sweat, tears, second – hand clothing or telephones. Health and medical personnel, however, are instructed to take special precautions to protect themselves from possible infection as a result of splashed human fluids that could get into their eyes or mouth, or by allowing such fluids on sores or broken skin. A small number of health care personnel have plucked up the virus by such means. Deep kissing, or “wet” kissing especially if oral sores or cuts may exist, are possible means of virus transfer.

- Insect transmission: Research indicates it is too early to draw any conclusions that the killer virus is transmittable by insects. Under laboratory conditions, mosquitoes can pick up and carry the virus in its gut, but the virus does not reproduce there, nor make its way to its saliva. To date, there is no evidence of transmission by mosquito bite
- Other disease pathogens in the body, picked up sexually or otherwise, or anything that weakens the immune system, can act as a cofactor to activate the AIDS virus into the disease syndrome.
- AIDS vaccine: The AIDS virus has so many genetic variations in its makeup, with new ones rapidly appearing, so developing an effective vaccine is very difficult and probably unlikely any time soon.
- Medical Treatment: Some medical drugs slow the course of the disease syndrome, but no present treatment has been shown to cure it. AIDS drugs are highly expensive and carry risk of several side effects.
- Medical treatment: While testing for the AIDS virus is highly accurate in most cases, there can be both false positive and negative results. More than one test may be required. Several months of AIDS tests can detect a person recently infected. A test several months later may be needed to show up the infection. All persons in need of help with AIDS question and concerns should seek professional assistance from health officials.

AIDS testing: while testing for the AIDS virus is highly accurate in most cases, there can be both false positive and negative results,



more than one test may be required, several months of HIV infection seem to be needed for a person to develop the antibodies that HIV test can detect. A person recently infected before testing may show up negative yet be infected and infectious to others. A test several months later may be needed to show up the infection.

## SELF ASSESSMENT EXERCISE 2

Which is the commonest mode of AIDs transmission?

Answer:

.....

*Hint ..... See 3.3*

## 4.0 CONCLUSION

This last unit helps you to recap and review the highlights and major issues raised, as well as crucial points made in the various units.

This unit serves as a sort of revision note for you at the end of the course and can be a very important part of your revision notes while doing tutor marked assessment, self assessment exercise and during preparation for end of course examination

There fore, this unit is quite an important aspect of the course materials which can be used to quickly review all you have learnt in this course.

## 5.0 SUMMARY

- HIV/AIDS virus is spread by transmission of infected bodily fluids
- The vast majority of HIV virus infections are transmitted by sexual means.
- In Africa, HIV occurs about equally in promiscuous heterosexual men and women
- Contaminated medical injection and through child-birth and breast feeding also contribute to its spread.
- HIV/AIDS symptoms affect every part of the body.
- HIV/AIDS infection progresses in phases and ends in death
- HIV/AIDS virus is not transmitted by insect bite
- HIV/AIDS testing and treatment are basic step toward control
- Research is still on –going on HIV/AIDS vaccine

## **6.0 TUTOR MARKED ASSIGNMENT**

Mention and discuss the commonest mode of HIV transmission

## **7.0 REFERENCES/FURTHER READINGS**

Schroeder, D.D (1987) ASEXUALLY Transmissible Disease Even you could become infected. USA: World Church of God.

World Health Organization (1988) AIDS: a shadow in our time. Geneva: WHO.

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