

AIDS/HIV Guide for Dietitians (#091208)

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Section I. Course Objectives

Introduction

The epidemic of HIV in the United States and overseas is large and complex, but progress has been made over the past few years both at home and throughout the world. Effective new drug therapies keep HIV-infected persons healthy longer and dramatically reduce the death rate. The health care professional works to improve treatment, care, and support for the persons living with HIV/AIDS and advocates programs, policies, and activities in support of efforts to prevent HIV/AIDS.

Course Objectives

By completing this course the healthcare professional will be able to:

1. Explain the terms HIV and AIDS
2. Explain HIV transmission and prevention
3. Identify HIV/AIDS prevalence and high risk groups
4. Describe CDC HIV prevention strategies
5. Identify HIV/AIDS approved treatments
6. Explain Academy of Nutrition and Dietetics HIV Nutrition Guidelines
7. Explain the CDC Guidelines for preventing the transmission of HIV in a health care setting
8. Describe the HIV/AIDS International Programs
9. Identify State HIV/AIDS procedures and protocols

Section II. HIV/AIDS Definition & Transmission

HIV & AIDS Definition

The term HIV stands for *Human Immunodeficiency Virus*.

- **Human** means affecting humans only.
- **Immunodeficiency** means a weakened defense system.
- **Virus** is a microscopic agent causing the disease.

The immune system is responsible for defending the health of the body. White blood cells protect the body from the germs such as viruses, parasites, fungi and bacteria. The HIV disease can be characterized as a gradual deterioration of the body's immune function.

The term AIDS stands for *Acquired Immune Deficiency Syndrome*. Each of these words has a definition that explains what AIDS is:

- **Acquired** means something that people get from outside themselves.
- **Immune** means invulnerability or protected.
- **Deficiency** means shortage or not enough.
- **Syndrome** is a group of symptoms that combine to demonstrate a particular disease or condition.

A positive HIV test result means that the person has been infected with HIV (Human Immunodeficiency Virus), the virus that causes AIDS (Acquired Immune Deficiency Syndrome). **HIV disease progresses to AIDS when the CD4⁺ T cell count drops below 200 cells/mm, and/or the development of an AIDS-defining condition** (an illness that is very unusual in someone who is not HIV positive).¹

Note: CD4⁺ T cells are a type of white blood cell that fights infections. When HIV enters a person's CD4⁺ T cell, it uses the cell to make copies of itself. This process destroys the CD4⁺ T cells, weakening the immune system and making it harder for the body to fight infections. The viral load is a test to measure the amount of HIV in a sample of blood. People with a high viral load usually develop AIDS faster than people with a low viral load.

All of these words, *Acquired Immune Deficiency Syndrome (AIDS)*, together refer to a group of symptoms that people acquire from outside themselves that weaken the body's ability to provide immunity against disease. The body becomes increasingly vulnerable to Opportunistic Infections (OIs) and cancers that are associated with AIDS.

AIDS Defining Conditions

If a patient is infected with HIV and the CD4 count drops below 200 cells/mm³, or if they develop an AIDS-defining condition (an illness that is very unusual in someone who is not infected with HIV), they have AIDS.

In December 1992, the Centers for Disease Control and Prevention (CDC) published the most current list of AIDS- defining conditions. The AIDS-defining conditions are:²

- Candidiasis
- Cervical cancer (invasive)
- Coccidioidomycosis, Cryptococcosis, Cryptosporidiosis
- Cytomegalovirus disease

- Encephalopathy (HIV-related)
- Herpes simplex (severe infection)
- Histoplasmosis
- Isosporiasis
- Kaposi's sarcoma
- Lymphoma (certain types)
- Mycobacterium avium complex
- Pneumocystis carinii/jiroveci pneumonia
- Pneumonia (recurrent)
- Progressive multifocal leukoencephalopathy
- Salmonella septicemia (recurrent)
- Toxoplasmosis of the brain
- Tuberculosis
- Wasting syndrome People who are not infected with HIV may also develop these diseases; this does not mean they have AIDS. To be diagnosed with AIDS, a person must first be infected with HIV.

HIV Survival Outside The Body

Scientists and medical authorities agree that HIV does not survive well outside the body, making the possibility of environmental transmission remote. HIV is found in varying concentrations or amounts in blood, semen, vaginal fluid, breast milk, saliva, and tears. To obtain data on the survival of HIV, laboratory studies have required the use of artificially high concentrations of laboratory-grown virus. Although these unnatural concentrations of HIV can be kept alive for days or even weeks under precisely controlled and limited laboratory conditions, CDC studies have shown that drying of even these high concentrations of HIV reduces the amount of infectious virus by 90 to 99 percent within several hours. Since the HIV concentrations used in laboratory studies are much higher than those actually found in blood or other specimens, drying of HIV-infected human blood or other body fluids reduces the theoretical risk of environmental transmission to that which has been observed - essentially zero. Incorrect interpretations of conclusions drawn from laboratory studies have in some instances caused unnecessary alarm.³

Results from laboratory studies should not be used to assess specific personal risk of infection because (1) the amount of virus studied is not found in human specimens or elsewhere in nature, and (2) no one has been identified as infected with HIV due to contact with an environmental surface. Additionally, HIV is unable to reproduce outside its living host (unlike many bacteria or fungi, which may do so under suitable conditions), except under laboratory conditions; therefore, it does not spread or maintain infectiousness outside its host.

HIV& AIDS Infection

HIV destroys a certain kind of blood cell (CD4+ T cells) which is crucial to the normal function of the human immune system. In fact, loss of these cells in people with HIV is an extremely powerful predictor of the development of AIDS. Studies of thousands of people have revealed that most people infected with HIV carry the virus for years before enough damage is done to the immune system for AIDS to develop. However, sensitive tests have shown a strong connection between the amount of HIV in the blood and the decline in CD4+ T cells and the development of AIDS. Reducing the amount of virus in the body with anti-retroviral therapies can dramatically slow the destruction of a person's immune system.⁴

History of AIDS

The earliest known case of HIV-1 in a human was from a blood sample collected in 1959 from a man in Kinshasa, Democratic Republic of Congo. (How he became infected is not known.) Genetic analysis of this blood sample suggested that HIV-1 may have stemmed from a single virus in the late 1940s or early 1950s. The virus has existed in the United States since at least the mid- to late 1970s. From 1979-1981 rare types of pneumonia, cancer, and other illnesses were being reported by doctors in Los Angeles and New York among a number of male patients who had sex with other men. These were conditions not usually found in people with healthy immune systems.⁵

In 1982 public health officials began to use the term "acquired immunodeficiency syndrome," or AIDS, to describe the occurrences of opportunistic infections, Kaposi's sarcoma (a kind of cancer), and *Pneumocystis carinii* pneumonia in previously healthy people. Formal tracking (surveillance) of AIDS cases began that year in the United States.

In 1983, scientists discovered the virus that causes AIDS. The virus was at first named HTLV-III/LAV (human T-cell lymphotropic virus-type III/lymphadenopathy-associated virus) by an international scientific committee. This name was later changed to HIV (human immunodeficiency virus).

For many years scientists theorized as to the origins of HIV and how it appeared in the human population, most believing that HIV originated in other primates. Then in 1999, an international team of researchers reported that they had discovered the origins of HIV-1, the predominant strain of HIV in the developed world. A subspecies of chimpanzees native to west equatorial Africa had been identified as the original source of the virus. The researchers believe that HIV-1 was introduced into the human population when hunters became exposed to infected blood.

Prior to 1996, scientists estimated that about half the people with HIV would develop AIDS within 10 years after becoming infected. This time varied greatly from person to person and depended on many factors, including a person's health status and their health-related behaviors.

Since 1996, the introduction of powerful anti-retroviral therapies has dramatically changed the progression time between HIV infection and the development of AIDS. There are also other medical treatments that can prevent or cure some of the illnesses associated with AIDS, though the treatments do not cure AIDS itself. Because of these advances in drug therapies and other medical treatments, estimates of how many people will develop AIDS and how soon are being recalculated, revised, or are currently under study.

As with other diseases, early detection of infection allows for more options for treatment and preventative health care.

The epidemic of HIV and AIDS has attracted much attention both within and outside the medical and scientific communities. Much of this attention comes from the many social issues related to this disease such as sexuality, drug use, and poverty. Although the scientific evidence is overwhelming and compelling that HIV is the cause of AIDS, the disease process is still not completely understood. This incomplete understanding has led some persons to make statements that AIDS is not caused by an infectious agent or is caused by a virus that is not HIV. This is not only misleading, but may have dangerous consequences. Before the discovery of HIV, evidence from epidemiologic studies involving tracing of patients' sex partners and cases occurring in persons receiving transfusions of blood or blood clotting products had clearly indicated that the underlying cause of the condition was an infectious agent. Infection with HIV has been the sole common factor shared by AIDS cases throughout the world among men who have sex with men, transfusion recipients, persons with hemophilia, sex partners of infected persons, children born to infected women, and occupationally exposed health care workers.⁶

The conclusion after more than 20 years of scientific research is that people, if exposed to HIV through sexual contact or injecting drug use for example, may become infected with HIV. If they become infected, most will eventually develop AIDS.

HIV Transmission

The U.S. blood supply is among the safest in the world. Nearly all people infected with HIV through blood transfusions received those transfusions before 1985, the year HIV testing began for all donated blood.

The Public Health Service has recommended an approach to blood safety in the United States that includes stringent donor selection practices and the use of screening tests. U.S. blood donations have been screened for antibodies to HIV-1 since March 1985 and HIV-2 since June 1992. The p24 Antigen test was added in 1996. Blood and blood products that test positive for HIV are safely discarded and are not used for transfusions.⁷

Tests Performed on Each Unit of Donated Blood (Source: American Red Cross)

Disease	Test	Year Implemented
HIV/AIDS	HIV/AIDS HIV- I Antibody test	1985
	HIV-1/2 Antibody test	1992
	HIV-I p24 Antigen test	1996
HIV/AIDS and Hepatitis C	Nucleic Acid Test (NAT)	1999
Hepatitis C	Hepatitis C Anti-HCV	1990
Hepatitis B	Hepatitis B Surface Antigen test	1971
	Hepatitis B Core Antibody	1987
Hepatitis	Hepatitis ALT	1986
Syphilis	Syphilis Serologic test	1948
Human T-cell Lymphotropic Virus (HTLV)	HTLV-I Antibody	1989
	HTLV -I/II Antibody	1998

The improvement of processing methods for blood products also has reduced the number of infections resulting from the use of these products.

Currently, the risk of infection with HIV in the United States through receiving a blood transfusion or blood products is extremely low and has become progressively lower, even in geographic areas with high HIV prevalence rates.

Coinfection With Hepatitis C Virus

About one quarter of HIV-infected persons in the United States are also infected with hepatitis C virus (HCV). HCV is one of the most important causes of chronic liver disease in the United States and HCV infection progresses more rapidly to liver damage in HIV-infected persons. HCV infection may also impact the course and management of HIV infection.

The latest U.S. Public Health Service/Infectious Diseases Society of America (USPHS/IDSA) guidelines recommend that all HIV-infected persons should be screened for HCV infection. Prevention of HCV infection for those not already infected and reducing chronic liver disease in those who are infected are important concerns for HIV-infected individuals and their health care providers.

Identifying Persons Likely To Have HIV-HCV Coinfection

The hepatitis C virus (HCV) is transmitted primarily by large or repeated direct percutaneous (i.e., passage through the skin by puncture) exposures to contaminated blood. Therefore, coinfection with HIV and HCV is common (50%-90%) among HIV-infected injection drug users (IDUs). Coinfection is also common among persons with hemophilia who received clotting factor concentrates before concentrates were effectively treated to inactivate both viruses (i.e., products made before 1987). The risk for acquiring infection through perinatal or sexual exposures is much lower for HCV than for HIV. For persons infected with HIV through sexual exposure (e.g., male-to-male sexual activity), coinfection with HCV is no more common than among similarly aged adults in the general population (3%-5%).

The Effects Of Coinfection On Disease Progression Of HCV And HIV

Chronic HCV infection develops in 75%-85% of infected persons and leads to chronic liver disease in 70% of these chronically infected persons. HIV-HCV coinfection has been associated with higher titers of HCV, more rapid progression to HCV-related liver disease, and an increased risk for HCV-related cirrhosis (scarring) of the liver. Because of this, HCV infection has been viewed as an opportunistic infection in HIV-infected persons and was included in the 1999 USPHS/IDSA Guidelines for the Prevention of Opportunistic Infections in Persons Infected with Human Immunodeficiency Virus. It is not, however, considered an AIDS-defining illness. As highly active antiretroviral therapy (HAART) and prophylaxis of opportunistic infections increase the life span of persons living with HIV, HCV-related liver disease has become a major cause of hospital admissions and deaths among HIV-infected persons.

The effects of HCV coinfection on HIV disease progression are less certain. Some studies have suggested that infection with certain HCV genotypes is associated with more rapid progression to AIDS or death. However, the subject remains controversial. Since coinfecting patients are living longer on HAART, more data are needed to determine if HCV infection influences the long-term natural history of HIV infection.

Preventing Coinfection With HCV

Persons living with HIV who are not already coinfecting with HCV can adopt measures to prevent acquiring HCV. Such measures will also reduce the chance of transmitting their HIV infection to others.

Not injecting or stopping injection drug use would eliminate the chief route of HCV transmission; substance-abuse treatment and relapse-prevention programs should be recommended. If patients continue to inject, they should be counseled about safer injection practices; that is, to use new, sterile syringes every time they inject drugs and never reuse or share syringes, needles, water, or drug preparation equipment.

Toothbrushes, razors, and other personal care items that might be contaminated with blood should not be shared. Although there are no data from the United States indicating that tattooing and body piercing place persons at increased risk for HCV infection, these procedures may be a source for infection with any bloodborne pathogen if proper infection control practices are not followed.

Although consistent data are lacking regarding the extent to which sexual activity contributes to HCV transmission, persons having multiple sex partners are at risk for other sexually transmitted diseases (STDs) as well as for transmitting HIV to others. They should be counseled accordingly.

Managing Patients Coinfecting With HIV And HCV

The general guidelines for patients coinfecting with HIV and HCV is that they should be encouraged to adopt safe behaviors to prevent transmission of HIV and HCV to others.

Individuals with evidence of HCV infection should be given information about prevention of liver damage, undergo evaluation for chronic liver disease and, if indicated, be considered for treatment. Persons coinfecting with HIV and HCV should be advised not to drink excessive amounts of alcohol. Avoiding alcohol altogether might be wise because the effects of even moderate or low amounts of alcohol (e.g., 12 oz. of beer, 5 oz. of wine or 1.5 oz. hard liquor per day) on disease progression are unknown. When appropriate, referral should be made to alcohol treatment and relapse-prevention programs. Because of possible effects on the liver, HCV-infected patients should consult with their health care professional before taking any new medicines, including over-the-counter, alternative or herbal medicines.

Susceptible coinfecting patients should receive hepatitis A vaccine because the risk for fulminant hepatitis associated with hepatitis A is increased in persons with chronic liver disease. Susceptible patients should receive hepatitis B vaccine because most HIV-infected persons are at risk for HBV infection. The vaccines appear safe for these patients and more than two-thirds of those vaccinated develop antibody responses. Pre-vaccination screening for antibodies against hepatitis A and hepatitis B in this high-prevalence population is generally cost-effective. Post-vaccination testing for hepatitis A is not recommended, but testing for antibody to hepatitis B surface antigen (anti-HBs) should be performed 1-2 months after completion of the primary series of hepatitis B vaccine. Persons who fail to respond should be revaccinated with up to three additional doses.

Section III. HIV/AIDS Prevalence

Tracking AIDS Trends

During the 1980s, AIDS cases alone provided an adequate picture of HIV trends because the time between infection with HIV and progression to AIDS was predictable. This predictability, however, has diminished since 1996, when highly active antiretroviral therapy (HAART) became available. Access, adherence, and response to HAART affect whether or when HIV progresses to AIDS. Thus, trends in AIDS cases alone no longer accurately reflect trends in HIV infection. AIDS trends do, however, continue to provide important information about where care and treatment resources are most needed.⁸

Tracking HIV Trends

By April 2004, all states had adopted some system for reporting HIV diagnoses to CDC. Tracking HIV trends is challenging and depends on several factors, such as how often people are tested, when during the course of their infection they are tested, whether and how test results are reported to health departments, and how case reports (with personal identifiers removed) are shared with CDC.⁹

United States HIV/AIDS Statistics

More than 25 years into the AIDS epidemic, HIV infection continues to exact a tremendous toll in the United States. Recent data indicate that African Americans and gay and bisexual men of all races continue to be most severely affected.

Estimates of HIV Prevalence

The latest estimates indicate that at the end of 2003, HIV prevalence—the total number of persons with HIV—was roughly 1 million (estimated range between 1,039,000–1,185,000). Approximately one-fourth

(24% –27%) of HIV-infected persons are believed to be unaware of their infection, underscoring the need to expand opportunities for HIV testing.

An estimated 47% of the persons living with HIV were black, 34% were white, and 17% were Hispanic. Asians/Pacific Islanders and American Indians/Alaska Natives each represented roughly 1% of the HIV-infected population.

Males accounted for 74% of the population living with HIV.

The largest population living with HIV (45%) comprised men who have sex with men (MSM), followed by persons infected through high-risk heterosexual contact (27%), those infected through injection drug use (22%), and those who were exposed through both male-to-male sexual contact and injection drug use (5%).

Researchers believe that these estimates point to an increased need for HIV testing, prevention, and treatment services to slow the US epidemic. As persons with HIV are now living longer than ever before, a growing population of HIV-infected men and women must be reached with testing and prevention services to help them protect others from infection. Additionally, increasing HIV prevalence means increased opportunities for transmission to HIV-negative persons who engage in risky behaviors. Efforts to reduce the number of new infections must therefore meet the needs of populations that are infected and populations that are not infected.

HIV prevalence differs from HIV incidence: incidence reflects the number of new HIV infections each year. CDC recently announced the first national system for determining HIV incidence on the basis of direct measurement of new HIV infections. This new technology distinguishes recent HIV infections from long-standing infections and provides critical information in tracking the US epidemic. In addition, it provides the clearest picture to date of HIV infections in the United States and over time and will benefit the populations at highest risk by better focusing HIV prevention efforts and helping to measure progress. In 2006, 56,300 individuals were infected with HIV.

Estimated Number of New HIV Diagnoses, 2006

CDC's analysis of HIV diagnoses includes all new HIV diagnoses, with or without an AIDS diagnosis, in the 33 states that have long-standing confidential, name-based HIV infection reporting systems.

HIV diagnoses do not necessarily represent new infections: some persons with a new HIV diagnosis were infected recently; others were infected long ago, but their infection was detected only recently. Additionally, although the inclusion of New York State data since 2001 provides a sample of diagnoses that is more representative than the sample from earlier analyses, several high-morbidity areas (including California and Illinois) lack longstanding, name-based reporting and are still not included in this analysis.

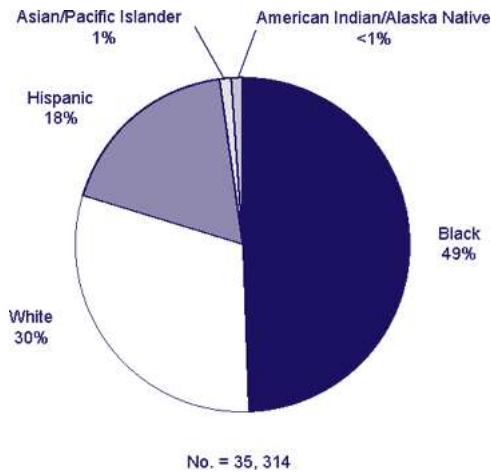
An analysis of persons with a diagnosis of HIV infection, by race/ethnicity and risk factor, underscores the disproportionate impact of HIV among communities of color and MSM of all races:

- By race/ethnicity, nearly half (49%) were black, although blacks made up only 13% of the population of the 33 states. Whites accounted for 30% of diagnoses, and Hispanics accounted for 18%. Asians/Pacific Islanders and American Indians/Alaska Natives each accounted for 1% or less of diagnoses.
- By age, more than half (57%) were aged 25–44. Children younger than 13 years accounted for less than 1% of diagnoses.

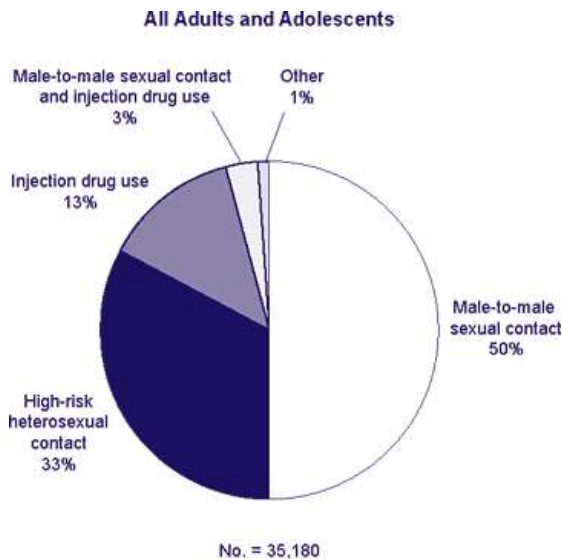
Among adults and adolescents:

- By transmission category, MSM continued to account for the largest number of diagnoses overall, followed by males and females exposed through high-risk heterosexual contact and injection drug use.
- By sex, males accounted for 73% of all new HIV diagnoses in 2006.
- Among males, most diagnoses were for MSM. Although past analyses indicate this is true regardless of race, high-risk heterosexual contact also accounts for a considerable proportion of new HIV diagnoses among men of minority races/ ethnicities
- Among females, most diagnoses were for those exposed through high-risk heterosexual contact.

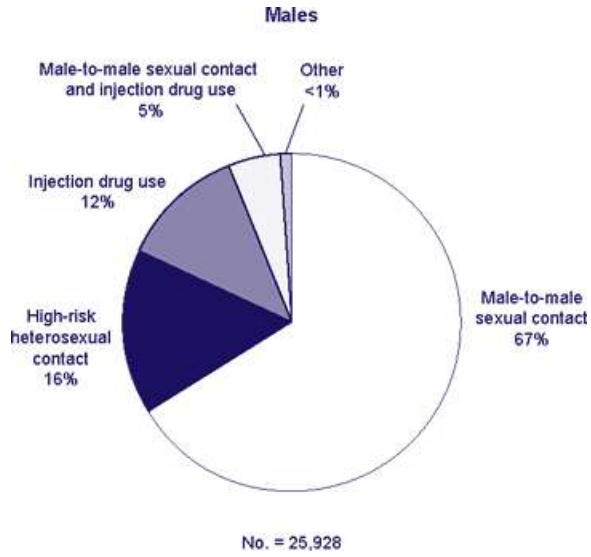
Race/ethnicity of persons with a new HIV diagnosis in 2006



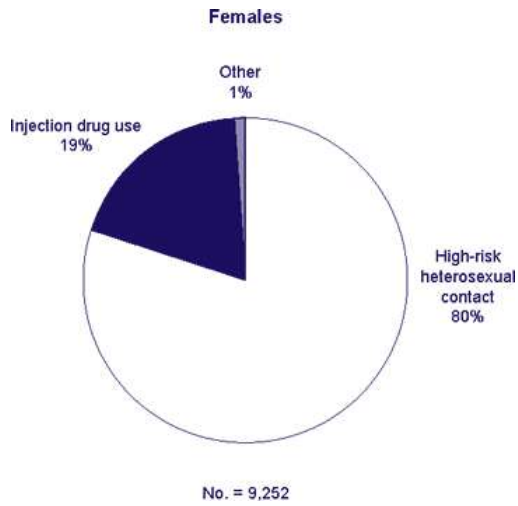
Transmission category for persons with a new HIV diagnosis in 2006



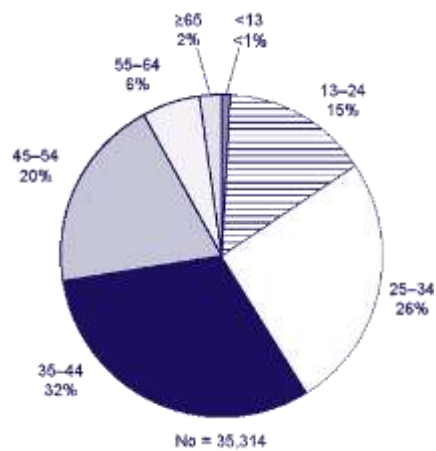
Male Transmission category for persons with a new HIV diagnosis in 2006



Female Transmission category for persons with a new HIV diagnosis in 2006



Age groups of persons with a new HIV diagnosis in 2006



Disparities among Races/Ethnicities Persist

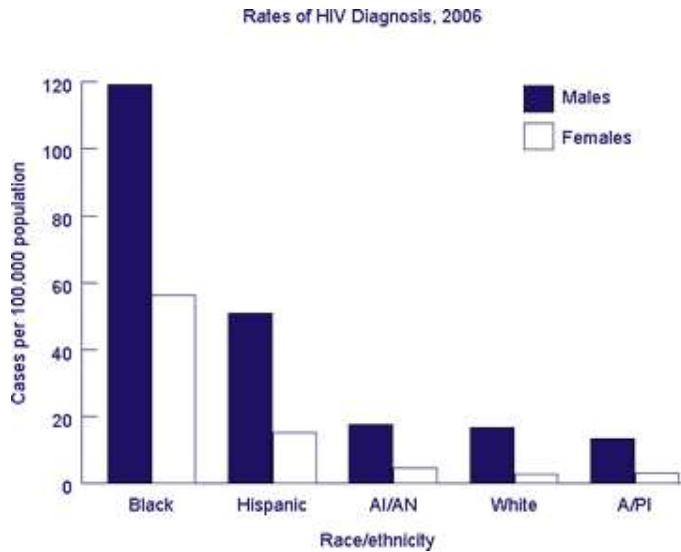
In 2006, the overall rate of HIV diagnosis (the number of diagnoses per 100,000 population) in the 33 states was 18.5 per 100,000 . The rate for blacks was roughly 8 times the rate for whites (67.7 per 100,000 vs 8.2 per 100,000).

African American males continue to bear the greatest burden of HIV infection. In 2006, the HIV diagnosis rate for all black males in 33 states (119.1 per 100,000 population) was the highest of any group— more than 7 times that for white males (16.7), more than twice the rate for Hispanic males (50.9), and more than twice the rate for black females (56.2). The diagnosis rate for Hispanic males was approximately 3 times that for white males.

African American females are also severely and disproportionately affected by HIV infection. In 2006, the HIV diagnosis rate for black females (56.2) was more than 19 times the rate for white females (2.9). The rate for Hispanic women was 15.1, more than 5 times that for white females.

Among American Indians/Alaska Natives, the rate of HIV diagnosis for males (17.7) was slightly higher than the rate for white males, and the rate for females (4.6) was nearly twice the rate for white females. Among Asians/Pacific Islanders, the rate of HIV diagnosis for males was 13.5, and the rate for females was 3.2.

Rates of HIV Diagnosis, 2006



Multiple Challenges Place African Americans and Hispanics/Latinos at Increased Risk

Race and ethnicity are not, by themselves, risk factors for HIV infection. But studies show that African Americans and Hispanics/Latinos are more likely than their white counterparts to face multiple challenges associated with risk for HIV infection. These challenges include high rates of sexually transmitted diseases, which can facilitate HIV transmission; substance abuse, which may increase the risk for HIV infection through sexual or drug-related transmission; and socioeconomic factors, such as limited access to high-quality health care. Studies have also suggested that poverty may place African American women at increased risk because of the power imbalance created by financial dependence on men]. Among MSM of minority races/ethnicities, cultural barriers that may impede the acknowledgment of risk behaviors and the ability to access prevention services may result in increased risk]. For Hispanics/Latinos, language barriers may also affect the quality of care. Additionally, because many Hispanics/Latinos or their parents have emigrated from diverse countries or regions, there is no single culture for persons of Spanish origin

in the United States. Research shows that Hispanics/Latinos born in different countries have different behavioral risk factors for HIV.

AIDS Cases and Deaths

AIDS cases and deaths, reported from all US states and the District of Columbia, provide a valuable measure of the impact of the disease in various areas and populations. In the mid-to-late 1990s, advances in HIV treatments led to dramatic declines in AIDS deaths and slowed the progression from HIV infection to AIDS.

In general, the trend in the estimated number of AIDS cases and deaths remained stable from 2002 through 2005. Estimates for 2006 suggest that the number of AIDS cases remained stable and that the number of AIDS deaths decreased, but it is too early to determine whether these trends will hold. The decrease in estimated deaths is likely due to delays in the reporting of deaths; there is always greater uncertainty about the data estimates for the most recent year (estimates are refined as additional data are received).¹⁰

Estimated numbers of AIDS cases and deaths of persons with AIDS 2002–2006

Year	Estimated Number of AIDS Cases	Estimated Number of Deaths Among Persons with AIDS
2006	36,828	14,016
2005	36,552	16,268
2004	37,726	16,395
2003	38,538	16,690
2002	38,132	16,948

By race/ethnicity, African Americans continue to be most severely affected by AIDS. In 2006, rates of AIDS cases were 47.6 per 100,000 for blacks, 15.6 for Hispanics, 6.2 for American Indians/Alaska Natives, 5.4 for whites, and 3.7 for Asians/Pacific Islanders. Among adults and adolescents, rates of AIDS cases were highest for black males (82.9 per 100,000), followed by black females (40.4) and Hispanic males (31.3). The AIDS rate for Hispanic females was 9.5 per 100,000. AIDS rates for white males and females were 11.2 and 1.9 per 100,000, respectively. AIDS rates for American Indian/Alaska Native males and females were 12.2 and 3.6 per 100,000, respectively, and AIDS rates among Asian/Pacific Islander males and females were 7.5 and 1.6 per 100,000, respectively.

Men Who Have Sex with Men (MSM)

The term *men who have sex with men (MSM)* refers to all men who have sex with other men, regardless of how they identify themselves (gay, bisexual, or heterosexual). In the United States, HIV and AIDS have had a tremendous impact on MSM. Consider these facts:

- AIDS has been diagnosed for more than half a million MSM. Over 300,000 MSM with AIDS have died since the beginning of the epidemic.
- MSM made up more than two thirds (68%) of all men living with HIV in 2005, even though only about 5% to 7% of men in the United States reported having sex with other men.
- In a 2005 study of 5 large US cities, 46% of African American MSM were HIV-positive.

Since HIV/AIDS in MSM was first diagnosed 1981, gay and bisexual men have been leaders in dealing with the challenges of the epidemic. Gay organizations and activists, through their work, have contributed greatly to many of the guidelines for prevention, treatment, and the care of people living with HIV/AIDS.¹¹

For complex reasons, HIV/AIDS continues to take a high toll on the MSM population. For example, the number of new HIV/AIDS cases among MSM in 2005 was 11% more than the number of cases in 2001. It is unclear whether this increase is due to more testing, which results in more diagnoses, or to an increase in the number of HIV infections. Whatever the reasons, in 2005, MSM still accounted for about 53% of all new HIV/AIDS cases and 71% of cases in male adults and adolescents.

Prevention Challenges

The HIV/AIDS epidemic continues to evolve. As old challenges remain and are addressed, new ones emerge, requiring new approaches to prevention and treatment. Despite many prevention successes, MSM face a wide range of risks for infection and barriers to prevention. Among them are the following.

Sexual Risk

Sexual risks account for most HIV infections in MSM. These risks include unprotected sex and sexually transmitted diseases (STDs).

- Not using a condom during anal sex with someone other than a primary HIV-negative partner continues to be a significant threat to the health of MSM.
- STDs (such as syphilis and gonorrhea) increase the risk for HIV infection and are persistent health issues for MSM. Not only do STDs increase one's chances of becoming infected with HIV, they also can indicate high-risk sexual behavior, which facilitates the transmission of HIV infection.

Substance Use

Some MSM use alcohol and illegal drugs, contributing to increased risk for HIV infection and other STDs. The use of substances such as alcohol and illegal drugs can increase the likelihood of risky sexual behavior while under the influence, as well as the likelihood of sharing needles or other injection equipment. The use of methamphetamines, or "meth," by MSM is a very important public health issue facing MSM.

Complacency about Risk Factors

HIV has been a threat for 25 years, yet many people believe they are at low risk of becoming infected or infecting their partner. This is especially true of young gay and bisexual men who, unlike older gay and bisexual men, have not experienced the toll of HIV/AIDS. At the same time, the success of new drug treatments may be contributing to increased risky behaviors among some MSM. For example, some MSM may mistakenly believe that they or their partners cannot spread the virus when they take HIV medication or that having HIV is minor condition with no life-threatening consequences. They may not understand that HIV treatment may not work for everyone and that for some, it may work only for a time.

Unknown HIV Serostatus

Approximately 25% of people in the United States who are infected with HIV do not know they are infected. In a study of young MSM, 77% of those who tested HIV-positive mistakenly believed that they were not infected. Young African American MSM in this study were especially likely to be unaware of their HIV infection. Many of these men had been tested for HIV, but not recently. CDC recommends that MSM be tested for HIV at least once a year. People who are not aware of their HIV infection cannot take advantage of medicine that can help them live longer, healthier lives. Nor do they have information that will help protect their sex and drug-using partners from HIV infection.

MSM Who Are HIV-positive

Studies have shown that many MSM reduce their risky behaviors after testing positive for HIV infection. However some MSM continue to engage in behaviors that put others at risk. Focusing on MSM living with HIV is especially important today, given the increasing number of MSM living with HIV because of the benefits of antiretroviral therapies.

The Internet

During the past decade, the Internet has created new opportunities for MSM to meet sex partners. Internet users can anonymously find partners with similar sexual interests without having to leave their home or having to risk face-to-face rejection if the behaviors they seek are not consistent with safer sex. Research has shown that MSM who meet partners on the Internet are more likely to take sexual risks than are MSM who do not seek sex partners on the Internet.¹²

HIV Infection and African Americans

Of all racial and ethnic groups in the United States, HIV and AIDS have hit African Americans the hardest. The reasons are not directly related to race or ethnicity, but rather to some of the barriers faced by many African Americans. These barriers can include poverty (being poor), sexually transmitted diseases, and stigma (negative attitudes, beliefs, and actions directed at people living with HIV/AIDS or directed at people who do things that might put them at risk for HIV).¹³

When we look at HIV/AIDS by race and ethnicity, we see that African Americans have:

- **More illness.** Even though blacks (including African Americans) account for about 13% of the US population, they account for about half (49%) of the people who get HIV and AIDS.
- **Shorter survival times.** Blacks with AIDS often don't live as long as people of other races and ethnic groups with AIDS. This is due to the barriers mentioned above.
- **More deaths.** For African Americans and other blacks, HIV/AIDS is a leading cause of death.

For black men, the most common ways of getting HIV are (in order):

1. having unprotected sex with another man who has HIV
2. sharing injection drug works (like needles or syringes) with someone who has HIV
3. having unprotected sex with a woman who has HIV

For black women, the most common ways of getting HIV are (in order):

1. having unprotected sex with a man who has HIV
2. sharing injection drug works (like needles or syringes) with someone who has HIV

Blacks at higher risk for HIV are those:

- who are unaware of their partner's risk factors
- with other STDs (which affect more blacks than any other racial or ethnic group)
- who live in poverty (which is about one quarter [25%] of all blacks)

Men on the Down Low

The most generic definition of the term *down low*, or *DL*, is “to keep something private,” whether that refers to information or activity.¹⁴

The term is often used to describe the behavior of men who have sex with other men as well as women and who do not identify as gay or bisexual. These men may refer to themselves as being “on the down low,” “on the DL,” or “on the low low.” The term has most often been associated with African American men. Although the term originated in the African American community, the behaviors associated with the term are not new and not specific to black men who have sex with men.

Much of the media attention about men on the down low and HIV/AIDS has focused on the concept of a transmission bridge between bisexual men and heterosexual women. Some women have become infected through sexual contact with bisexual men. However, many questions have not yet been answered, including:

- Do bisexually active men account for more cases of HIV infection in women than do men who inject drugs?
- Are bisexually active men more likely than other groups of men to be HIV infected?
- What proportion of HIV-infected men who have sex with male and female partners identify with the down low?
- Do men on the down low engage in fewer or more sexual risk behaviors than men who are not on the down low?
- Do people other than bisexually active men who do not disclose their behavior to sex partners identify with the down low?

What are the implications for HIV prevention?

The phenomenon of men on the down low has gained much attention in recent years; however, there are no data to confirm or refute publicized accounts of HIV risk behavior associated with these men. What is clear is that women, men, and children of minority races and ethnicities are disproportionately affected by HIV and AIDS and that all persons need to protect themselves and others from getting or transmitting HIV.

Section IV. CDC HIV Prevention Strategies

CDC Mission

As a part of its overall public health mission, CDC provides leadership in helping control the HIV/AIDS epidemic by working with community, state, national, and international partners in surveillance, research, and prevention and evaluation activities.¹⁵

In addition, the number of people living with AIDS is increasing, as effective new drug therapies keep HIV-infected persons healthy longer and dramatically reduce the death rate. CDC's programs work to improve treatment, care, and support for persons living with HIV/AIDS and to build capacity and infrastructure to address the HIV/AIDS epidemic in the United States and around the world.

Early Diagnosis

The CDC has concluded that there are many benefits to early knowledge of HIV infection, including early entry into treatment to prevent illnesses that arise from a weakened immune system, treatment of other conditions like substance abuse and sexually transmitted diseases, and access to social services and medical treatments, when appropriate. HIV-infected persons in care are now living longer than before thanks to new highly effective treatments.

About 40% of HIV-infected persons first find out that they have HIV less than 1 year before AIDS diagnosis. On average, it takes 10 years after HIV infection for symptoms of AIDS to appear. People who have their first HIV test close to getting an AIDS diagnosis have been infected and not known it, possibly for many years, potentially passing the infection to their partners. Early diagnosis of HIV enables infected persons and those close to them to take steps to prevent transmission.¹⁶

If a person with HIV is tested, learns of his or her status, and has access to appropriate treatments, the amount of virus in the body can be reduced, which may decrease the risk for transmission to partners. This reduction of HIV transmission is most clearly seen in reducing transmission of HIV from mother to child by treating pregnant women who are HIV positive.

Advancing HIV Prevention

To reduce further the incidence of HIV, CDC announced a new initiative, Advancing HIV Prevention (AHP). This initiative comprises 4 strategies: making HIV testing a routine part of medical care, implementing new models for diagnosing HIV infections outside medical settings, preventing new infections by working with HIV-infected persons and their partners, and further decreasing perinatal HIV transmission.

Advancing HIV Prevention: The Four Strategies

CDC's new initiative emphasizes HIV testing, in both medical and non-medical settings. This helps to identify persons who are not aware of their own HIV infection, and facilitates getting them into treatment and prevention services.¹⁷

Program Outline

1. Incorporate HIV testing as a routine part of care in traditional medical settings. CDC will issue recommendations strongly encouraging all health care providers to include HIV testing, when indicated, as part of routine medical care, like other routine medical tests by:

- Promoting removal of real and perceived barriers to routine testing, including “de-coupling” HIV tests in the medical setting from extensive, pre-test prevention counseling. In some jurisdictions, statutory requirements, e.g. for pretest counseling, can serve as barriers to testing.
- Working with professional medical associations and others to promote adoption of the recommendations. CDC will work with public and private payors to promote appropriate reimbursement incentives.

2. Implement new models for diagnosing HIV infections outside medical settings. Some persons infected with HIV do not have access to traditional medical settings. CDC will create new program models to increase HIV testing in high-prevalence, non-medical settings by:

- Encouraging the use of the HIV rapid test.
- Funding pilot projects, aimed at identifying the most effective models for HIV diagnosis and referral for medical and preventive care which CDC grantees can employ outside traditional medical settings.
- Taking steps to assure that funding is used to support such models through CDC grant programs to health departments and community-based organizations.

3. Prevent new infections by working with people diagnosed with HIV and their partners. CDC will promote preventive and treatment services within and outside traditional medical settings by:

- Working with HRSA to reach those who have been diagnosed with HIV but who are not receiving ongoing treatment and preventive care services
- Conducting demonstration projects through health departments to provide prevention case management and counseling for people living with HIV.
- CDC will standardize new procedures for prevention interventions and evaluation activities to assure that such measures are both appropriate and effective. In accordance with these new procedures, CDC will broadly implement prevention services for people living with HIV through health departments and community-based organizations by refocusing CDC funding on activities with proven effectiveness.
- CDC will assure that requirements related to partner notification in grant guidance are fully met so that this recognized technique of infection control is optimally employed. Additionally, CDC will pilot new approaches to partner notification, including offering rapid HIV testing to partners and using peers to conduct appropriate partner notification, prevention counseling, and referral.

4. Further decrease mother-to-child HIV transmission. Treatment of pregnant women and their infants can substantially reduce the number of babies born with HIV infection. Such interventions are most effective when the HIV status of the pregnant woman is known as early as possible in pregnancy—and if not known—when the baby can be tested at the time of birth. CDC will:

- Promote screening of every pregnant woman for HIV, using the “opt-out” approach. Make prenatal HIV screening a routine part of medical care.
- Promote screening of newborns whose mothers HIV status is not known.

Rapid HIV Test

Someone might have HIV and still feel perfectly healthy. The CDC recommends that the only way to know for sure if they are infected or not is to be tested.

Of new cases, a disproportionate number are in persons who do not know they are infected. The CDC reports that each year at publicly funded testing sites, 27,000–30,000 HIV test results are positive. Of those who test positive at CDC-funded public testing sites, 31% do not return for their results.¹⁸

To reduce barriers to early diagnosis of HIV infection and increase access to treatment and prevention services, the CDC announced a new initiative, “Advancing HIV Prevention: New Strategies for a Changing Epidemic” (AHP) This multifaceted program stresses the importance of routinely offering HIV testing as part of the medical visit and expands on the 1993 recommendations for testing inpatients and outpatients in acute-care hospital settings. Additionally, AHP stresses the importance of using rapid HIV tests to facilitate access to early diagnosis in high prevalence areas, for high-risk individuals, and for

women during labor and delivery who have not previously been tested and in nontraditional testing settings.

Rapid HIV tests can play an important role in HIV prevention activities and expand access to testing in both clinical and nonclinical settings. They can help overcome some of the barriers to early diagnosis and improve linkage to care of infected persons. This paper will review the operating and performance characteristics, quality assurance (QA) and laboratory requirements for currently available rapid HIV tests, and counseling implications.

Approved Rapid HIV Tests

A rapid test is a screening test that produces very quick results, in approximately 20-60 minutes. Rapid tests use blood or oral fluid to look for the presence of antibodies to HIV. As is true for all screening tests, a reactive rapid HIV test result must be confirmed with a follow-up confirmatory test before a final diagnosis of infection can be made. These tests have similar accuracy rates as traditional EIA screening tests.

Four rapid HIV tests have been approved by the US Food and Drug Administration (FDA):

1. OraQuick® (and its newer version OraQuick® Advance) Rapid HIV-1/2 Antibody Test (OraSure Technologies, Inc., Bethlehem, PA);
2. Reveal™ (and its newer version Reveal™ G2) Rapid HIV-1 Antibody Test (MedMira, Halifax, Nova Scotia);
3. Uni-Gold Recombigen® HIV Test (Trinity BioTech, Bray, Ireland);
4. and Multispot HIV-1/HIV-2 Rapid Test (Bio-Rad Laboratories, Redmond, WA).

Like conventional HIV enzyme immunoassays (EIAs), rapid HIV tests are screening tests that require confirmation if reactive. Though each of these rapid HIV tests has unique characteristics, they share many common features, including how the tests work, the use of external controls, and other requirements such as the product information sheets that are provided to patients.

The price for the FDA-approved rapid HIV test kits range from \$14 to \$25. Costs for multidose external control vials range from \$20 to \$26.25.

African American Working Group

CDC has also established the African American Working Group to focus on the urgent issue of HIV/AIDS in African Americans. The working group will develop a comprehensive response to guide CDC's efforts to increase and strengthen HIV/AIDS prevention and intervention activities directed toward African Americans. Already, CDC is engaged in a wide range of activities to involve community leaders in the African American community and to decrease the incidence of HIV/AIDS in African Americans. For example, CDC will:

- Funds demonstration projects evaluating rapid HIV testing in historically black colleges and universities
- Conducts epidemiologic research focused on African Americans.

Prevention

The CDC recommendations for preventing the spread of HIV are:¹⁹

- Don't share needles and syringes used to inject drugs, steroids, vitamins, or for tattooing or body piercing. Also, don't share equipment ("works") used to prepare drugs to be injected. Many people have been infected with HIV, hepatitis, and other germs this way. Germs from an infected person can stay in a needle and then be injected directly into the next person who uses the needle.
- The surest way to avoid transmission of sexually transmitted diseases is to abstain from sexual intercourse, or to be in a longterm mutually monogamous relationship with a partner who has been tested and is known to be uninfected.
- For persons whose sexual behaviors place them at risk for STDs, correct and consistent use of the male latex condom can reduce the risk of STD transmission. However, no protective method is 100 percent effective, and condom use cannot guarantee absolute protection against any STD. The more sex partners one has, the greater the chances are of getting HIV or other diseases passed through sex.
- Condoms lubricated with spermicides are no more effective than other lubricated condoms in protecting against the transmission of HIV and other STDs. In order to achieve the protective effect of condoms, they must be used correctly and consistently. Incorrect use can lead to condom slippage or breakage, thus diminishing their protective effect. Inconsistent use, e.g., failure to use condoms with every act of intercourse, can lead to STD transmission because transmission can occur with a single act of intercourse.
- Don't share razors or toothbrushes because of the possibility of contact with blood.

If a woman believes that they are pregnant or think they might be soon, it is recommended that they talk to a doctor or their local health department about being tested for HIV. Drug treatments are available to help and reduce the chance of passing HIV to the baby if they have it.

Section V. HIV/AIDS Treatment

AIDS Treatment

HIV treatment is the use of anti-HIV medications to keep an HIV infected person healthy. Treatment can help people at all stages of HIV disease. Although anti-HIV medications can treat HIV infection, they cannot cure HIV infection. HIV treatment is complicated and must be tailored to the individual's needs.

Highly Active Antiretroviral Therapy (HAART)

Anti-HIV (also called antiretroviral) medications are used to control the reproduction of the virus and to slow the progression of HIV-related disease. Highly Active Antiretroviral Therapy (HAART) is the recommended treatment for HIV infection. HAART combines three or more anti-HIV medications in a daily regimen. How many pills will be needed and how often they are taken depends on what medications the doctor chooses.

Anti-HIV medications do not cure HIV infection, and individuals taking these medications can still transmit HIV to others. Anti-HIV medications approved by the U.S. Food and Drug Administration (FDA) fall into four classes.²⁰

Each HAART regimen is tailored to the individual patient – there is no one “best” regimen. The individual and their doctor will decide which medications are right. For people taking HAART for the first time, the recommended regimens (in alphabetical order) are: Atripla Kaletra+ TruvAcademy of Nutrition and Dietetics Lexiva + Norvir + TruvAcademy of Nutrition and Dietetics Prezista + Norvir + TruvAcademy of Nutrition and Dietetics Reyataz + Norvir + TruvAcademy of Nutrition and Dietetics Sustiva + TruvAcademy of Nutrition and Dietetics particular needs (see

Starting Anti-HIV Medications Fact Sheet). In general, taking medications from only one class is not recommended because any decrease in viral load is almost always temporary.²¹

Approved Medications to Treat HIV Infection A Service of the U.S. Department of Health and Human Services HIV and Its Treatment — Approved Anti-HIV Medications This information is based on the U.S. Food and Drug Administration's Drugs Used in the Treatment of HIV Infection.

Approved Medications to Treat HIV Infection

Anti-HIV (also called antiretroviral) medications are used to control the reproduction of the virus and to slow the progression of HIV-related disease. Highly Active Antiretroviral Therapy (HAART) is the recommended treatment for HIV infection. HAART combines three or more anti-HIV medications in a daily regimen. Anti-HIV medications do not cure HIV infection, and individuals taking these medications can still transmit HIV to others. Anti-HIV medications approved by the U.S. Food and Drug Administration (FDA) fall into five classes:

Class	Generic Name	Brand & Other Names	Manufacturer	FDA Approval Date
Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)				
<i>NNRTIs bind to and disable reverse transcriptase, a protein that HIV needs to make more copies of itself.</i>	Delavirdine	Rescriptor, DLV	Pfizer	April 4, 1997
	Efavirenz	Sustiva, EFV	Bristol-Myers Squibb	Sept. 17, 1998
	Etravirine	Intelence, Celsentri, TMC125, ETR	Tibotec	Jan. 18, 2008
	Nevirapine	Viramune, NVP	Boehringer Ingelheim	June 21, 1996
Nucleoside Reverse Transcriptase Inhibitors (NRTIs)				
<i>NRTIs are faulty versions of building blocks that HIV needs to make more copies of itself. When HIV uses an NRTI instead of a normal building block, reproduction of the virus is stalled.</i>	Abacavir	Ziagen, ABC	GlaxoSmithKline	Dec. 17, 1998
	Abacavir, Lamivudine	Epzicom	GlaxoSmithKline	Aug. 2, 2004
	Abacavir, Lamivudine, Zidovudine	Trizivir	GlaxoSmithKline	Nov. 14, 2000
	Didanosine	Videx, ddI, Videx EC	Bristol-Myers Squibb	Oct. 9, 1991 Oct. 31, 2000 (EC)
	Emtricitabine	Emtriva, FTC, Coviracil	Gilead Sciences	July 2, 2003
	Emtricitabine, Tenofovir DF	Truvada	Gilead Sciences	Aug. 2, 2004
	Lamivudine	Epivir, 3TC	GlaxoSmithKline	Nov. 17, 1995
	Lamivudine, Zidovudine	Combivir	GlaxoSmithKline	Sept. 27, 1997
	Stavudine	Zerit, d4T	Bristol-Myers Squibb	June 24, 1994
	Tenofovir DF	Viread, TDF	Gilead Sciences	Oct. 26, 2001
	Zidovudine	Retrovir, AZI, ZDV	GlaxoSmithKline	March 19, 1987

Approved Medications to Treat HIV Infection

Class	Generic Name	Brand & Other Names	Manufacturer	FDA Approval Date
Protease Inhibitors (PIs)				
<i>PIs disable protease, a protein that HIV needs to make more copies of itself.</i>	Amprenavir	Agenerase, APV	GlaxoSmithKline, Vertex Pharmaceuticals	April 15, 1999
	Atazanavir	Reyataz, ATV	Bristol-Myers Squibb	June 20, 2003
	Darunavir	Prezista, TMC114, DRV	Tibotec	June 23, 2006
	Fosamprenavir	Lexiva, FPV	GlaxoSmithKline, Vertex Pharmaceuticals	Oct. 20, 2003
	Indinavir	Crixivan, IDV	Merck	March 13, 1996
	Lopinavir, Ritonavir	Kaletra, LPV/r	Abbott Laboratories	Sept. 15, 2000
	Nelfinavir	Viracept, NFV	Agouron Pharmaceuticals	March 14, 1997
	Ritonavir	Norvir, RTV	Abbott Laboratories	March 1, 1996
	Saquinavir	Invirase, SQV	Hoffmann-La Roche	Dec. 6, 1995
	Tipranavir	Aptivus, TPV	Boehringer Ingelheim	June 22, 2005
Entry/Fusion Inhibitors				
<i>Entry/Fusion inhibitors work by blocking HIV entry into cells.</i>	Enfuvirtide	Fuzeon, T-20	Hoffmann-La Roche, Trimeris	March 13, 2003
	Maraviroc	Selzentry, MVC	Pfizer	Aug. 6, 2007
Integrase Inhibitors				
<i>Integrase inhibitors disable integrase, a protein that HIV uses to insert its viral genetic material into the genetic material of an infected cell.</i>	Raltegravir	Isentress	Merck	Oct. 12, 2007
Fixed Dose Combination				
<i>Fixed dose combination tablets contain 2 or more anti-HIV medications that can be from 1 or more drug classes.</i>	Abacavir, Lamivudine	Epzicom	GlaxoSmithKline	Aug. 2, 2004
	Abacavir, Lamivudine, Zidovudine	Trizivir	GlaxoSmithKline	Nov. 14, 2000
	Efavirenz, Emtricitabine, Tenofovir DF	Atripla	Bristol-Myers Squibb, Gilead Sciences	July 12, 2006
	Emtricitabine, Tenofovir DF	Truvada	Gilead Sciences	Aug. 2, 2004
	Lamivudine, Zidovudine	Combivir	GlaxoSmithKline	Sept. 27, 1997

Some people may benefit from a different regimen. Recommended alternative regimens are:

- Sustiva + (Epivir or Emtriva) + (Ziagen or Videx or Zerit)
- Viramune + (Epivir or Emtriva) + (Retrovir or Zerit or Videx or Ziagen or Viread)
- Reyataz + (Epivir or Emtriva) + (Retrovir or Zerit or Ziagen or Videx) or (Viread + low dose Norvir)
- Lexiva + (Epivir or Emtriva) + (Retrovir or Zerit or Ziagen or Viread or Videx)
- Lexiva + low dose Norvir + (Epivir or Emtriva) + (Retrovir or Zerit or Ziagen or Viread or Videx)
- Crixivan + low dose Norvir + (Epivir + Emtriva) + (Retrovir or Zerit or Ziagen or Viread or Videx)
- Kaletra + (Epivir or Emtriva) + (Zerit or Ziagen or Viread or Videx)
- Viracept + (Epivir or Emtriva) + (Retrovir or Zerit or Ziagen or Viread or Videx)
- Invirase + low dose Norvir + (Epivir or Emtriva) + (Retrovir or Zerit or Ziagen or Viread or Videx)

In general, taking only one or two drugs is not recommended because any decrease in viral load is almost always temporary without three or more drugs. The exception is the recommendation for pregnant women, who may take Retrovir alone or with other drugs to reduce the risk of passing HIV to their infants.

HAART Negative Side Effects

The person may experience negative side effects (drug toxicity) when they take HIV drugs. Some of these side effects are serious, even life-threatening; the person may have to change drugs due to intolerable side effects. The person and their doctor or pharmacist should discuss the side effects of each medication.

Possible side effects of HAART include:

- Liver problems
- Diabetes • abnormal fat distribution (lipodystrophy syndrome)
- High cholesterol • increased bleeding in patients with hemophilia
- Decreased bone density • skin rash • pancreatitis (inflammation of the pancreas)
- Nerve problems Side effects that may seem minor, such as fever, nausea, and fatigue, can mean there are serious problems.

Viral Load Test Frequency

It is recommended that a person's viral load be tested 2 to 8 weeks after they start treatment, then every 3 to 4 months throughout treatment to make sure the drugs are still working. HIV treatment should reduce the viral load to the point at which it is undetectable. An undetectable viral load does not mean that the HIV infection is gone; it simply means that the test is not sensitive enough to detect the small amount of HIV left in the blood.

If the viral load is still detectable within 4 to 6 months after starting treatment, the person and their doctor should discuss how well the person has adhered to the. Missing medication doses is the most common reason for treatment failure and development of drug resistance. The doctor should do a drug resistance test, which will determine if the HIV in the person's body has mutated into a strain that the current treatment regimen can't control.

How fast or how much the viral load decreases depends on factors other than the treatment regimen. These factors include the baseline viral load and CD4 count, whether the person has taken HIV drugs before, whether they have HIV-related medical conditions, and how closely they have followed (adhered to) the treatment.

CD4 Count Test Frequency

CD4 counts also indicate how well the treatment regimen is working. The person's CD4 count should be tested every 3 to 6 months throughout their treatment. HIV treatment should increase the CD4 count or at least keep it from going down.

Treatment Regimen Change

There are several reasons why the person's treatment regimen may need to change. Two of the most important reasons are *drug toxicity* and *regimen failure*.²²

- *Drug toxicity* means that the treatment regimen creates side effects that make it difficult to take the drugs.

- *Regimen failure* means that the drugs are not working well enough.

Regimen failure occurs when the anti-HIV medications being taken do not adequately control the infection. Factors that may cause regimen failure include:

- Poor health before starting the treatment regimen
- Poor adherence to the regimen (not taking medications exactly as instructed by the doctor, including missing doses)
- Previous anti-HIV treatment and/or drug resistance
- Alcohol or drug abuse
- Medication side effects, medication toxicity, or interactions with other medications
- Medication poorly absorbed by the body
- Medical conditions or illnesses other than HIV infection

There are three types of regimen failure

1. **Virologic failure:** Regimens should lower the amount of HIV in the blood to undetectable levels. Virologic failure has occurred if HIV can still be detected in the blood 48 weeks after starting treatment, or if it is detected again after treatment had previously lowered the viral load to undetectable.
2. **Immunologic failure:** An effective regimen should increase the number of CD4 cells in the blood or at least prevent the number from going down. Immunologic failure has occurred if the CD4 count decreases below a baseline measurement or does not increase above the baseline count within the first year of therapy.
3. **Clinical failure:** Clinical failure has occurred if the person experience's an HIV-related infection or a decline in physical health despite at least 3 months of anti-HIV treatment.

Virologic failure is the most common kind of regimen failure. People with virologic failure who do not switch to a more effective drug regimen usually progress to immunologic failure within about 3 years. Immunologic failure may be followed by clinical failure.

Home Testing Kits

Consumer-controlled test kits (popularly known as "home testing kits") were first licensed in 1997. Although home HIV tests are sometimes advertised through the Internet, currently only the "Home Access HIV-1 Test System" is approved by the Food and Drug Administration. The Department of Health and Human Services has allowed the manufacturer to greater than 99.9% accurate.²³

The Home Access HIV-1 Test System can be found at most local drug stores. It is not a true home test, but a home collection kit. The testing procedure involves pricking a finger with a special device, placing drops of blood on a specially treated card, and then mailing the card in to be tested at a licensed laboratory. Customers are given an identification number to use when phoning in for the results. Callers may speak to a counselor before taking the test, while waiting for the test result, and when the results are given. All individuals receiving a positive test result are provided referrals for a follow-up confirmatory test, as well as information and resources on treatment and support services.

Section VI. Academy of Nutrition and Dietetics HIV Nutrition Guidelines

Academy of Nutrition and Dietetics Infectious Diseases Nutrition DPG (formerly HIV/AIDS DPG)

The Infectious Diseases Nutrition DPG is the advocate of the dietetics profession serving the public through the promotion of optimal nutrition, health and well being. The Infectious Diseases Nutrition DPG enables members of the Academy of Nutrition and Dietetics (ACADEMY OF NUTRITION AND DIETETICS) to network and share information, collaborate, and advocate in order to positively impact people affected HIV/AIDS.

The goals of the Infectious Diseases Nutrition DPG are:²⁴

1. To support and expand a network of dietetics professionals and share information and experiences on the nutritional management of HIV/AIDS, Hepatitis C and other infectious diseases.
2. To create and disseminate a comprehensive quarterly publication that provides nutrition information to members, allied health professionals, and primary care providers in the field of HIV/AIDS management through a variety of communication channels.
3. To inform members of current research in HIV/AIDS nutrition, and to provide support for their participation in research projects through networking and a competitive research grant.
4. To advocate through public policy and education for the integration of nutrition into HIV disease management.

Academy of Nutrition and Dietetics Position Statement

The position of the Academy of Nutrition and Dietetics and Dietitians of Canada: Nutrition intervention in the care of persons with human immunodeficiency virus infection is as follows:²⁵

"It is the position of the Academy of Nutrition and Dietetics and the Dietitians of Canada that efforts to optimize nutritional status, including medical nutrition therapy and nutrition-related education, should be components of the total health care provided to people infected with human immunodeficiency virus (HIV)." National antiretroviral treatment guidelines dictate all HIV-infected patients be put into a continuum of care that includes nutrition.

The Academy of Nutrition and Dietetics 's position paper reports that as new treatment modalities continue to emerge, and the population's experience of the disease changes and becomes more complex health practitioners must work with clients to plan for and respond to these changes. Additional support for research is required to identify the best practices to accomplish appropriate outcomes in health status, quality of life, and disease management. Education for health care practitioners should be a continuous process that integrates research and best practices for clinical and other nutrition-related interventions. In addition, dietetics professionals should have adequate and continuous training in HIV-specific issues to ensure the availability and appropriateness of HIV-targeted and nutrition-related services. Practical issues such as food insecurity and reimbursement for nutrition-related services also need to be addressed to ensure effective and timely interventions for all people living with HIV infection. Collaboration between stakeholders to address education, research, adherence, and advocacy needs can leverage available time and funds.

Nutrition and HIV Disease Interaction

The role of food and nutrition security in maintaining the family unit, preserving livelihood strategies, and prolonging life is an important component in developing countries, in which the very survival of family members and community infrastructure is dependent on passing indigenous survival-related knowledge to future generations. In developing, transitional, and developed countries, poor nutritional status can be

related to psychosocial and economic issues. Lack of education, food access, economic support, and access to health care services may increase the risk of malnutrition.

Achieving optimal nutritional status is a challenge for anyone living with HIV. The Committee on World Food Security's 2001 paper, "The Impact of HIV/AIDS on Food Security," states: "All dimensions of food security-availability, stability, access and use of food-are affected where the prevalence of HIV/AIDS is high". As such, the nutritional issues facing HIV-affected populations challenges the development and implementation of resolutions to the problem of world hunger and malnutrition. Many people with AIDS face hunger and multiple barriers to food and nutrition security. Coupled with their HIV status and the disease's complications, some people are facing economic insecurity, social isolation and stigmatization, incarceration or other institutionalization, inadequate cooking skills and facilities, limited food availability and dietary diversity, substance use, and coinfections and other illnesses, including mental illness and disabilities. Food represents more than a vehicle to deliver nutrients, and having food security includes being able to access food with dignity.

Safe access to appropriate food in an acceptable environment is an important part of improving and maintaining physical and emotional health. Discussing and resolving barriers to food security is an essential step in improving health status. The Academy of Nutrition and Dietetics papers on domestic and global food and nutrition security exhort dietetics professionals to build food and nutrition security through competent and collaborative practice as a part of the health care team as well as client advocacy). In an effort to reduce the incidence of hunger 50% by 2015, both the United States and Canada signed a final declaration of the World Food Summit to work collaboratively with 182 other countries.

The effects of HIV and its complications on nutritional status and the effect of nutritional status on HIV disease progression have been explored. A well-nourished HIV-positive person with a controlled viral load is more likely to be able to withstand the effects of HIV infection. However, macronutrient and micronutrient needs may increase significantly with one or a combination of these interrelated factors: a high viral load associated with a decline in immune function, ineffective treatment regimens, viral resistance, and/or active secondary infections. Men, women, and children have specific nutrition considerations that must be addressed with the patient's sex and age in mind. Men, women, and children with HIV/AIDS are at risk for compromised nutritional status, although the type and severity of malnutrition may vary from macronutrient and micronutrient deficits to altered nutrient metabolism.

Nutritional status, specifically the maintenance of weight and crucial body-protein stores (body cell mass), affects a person's ability to survive HIV disease. With a loss of body cell mass to a level of 54% of the expected value based on height, death is likely to occur in HIV-infected patients regardless of the presence or absence of infectious complications. Because metabolism of nutrients and medications occurs primarily in the body cell mass compartment (composed mostly of organ and muscle tissues), knowledge and preservation of these body tissues may support the efficacy of medication therapies. It is likely that there are a combination of mechanisms for weight and protein losses, including a loss of appetite and increased use associated with inflammatory responses. Negative nitrogen balance and weight losses are correlated. It is expected that 80% to 90% of weight loss during acute events is accounted for by protein losses, whereas less protein is lost during the starvation process. During critical events, both nutrition and other medical therapy strategies are required to achieve disease management goals, including the preservation of crucial body cell mass stores. Diets high in both calories and protein may be required to improve the body's response to the challenge of symptomatic HIV infection.

Starvation-style malnutrition can result from malabsorption of nutrients. Malabsorption-particularly fat malabsorption-seems to occur throughout the disease process and is not always accompanied by diarrhea or other typical symptoms. Villous atrophy, intestinal cell maturation defects, increased gut permeability, autonomic neuropathy, and gastrointestinal pathogens have all been documented with malabsorption

throughout the disease. It has also been suggested that activation of gut immunity and the inflammation that results can contribute to malabsorption.

Infectious disease can lead to a cascade of events such as anorexia, diarrhea, and an inflammatory response causing a preferential loss of nitrogen stores, even early in the disease process and during asymptomatic phases. The cascade of events that occurs as part of the inflammatory and immune response to infection is dependent on the severity of the infection and may include the preferential and rapid loss of lean body mass. Seminal research examining cortisol levels and immune function suggests that psychological stress, as an inducer of the physiologic stress response, may contribute to metabolic alterations and subsequently to lean tissue losses. Although of interest, empirical evidence has not yet accrued to support this hypothesis. The loss of lean tissue central to body metabolism may be present throughout the disease process, regardless of weight maintenance, suggesting that weight is not a good early indicator of declining nutritional status. Differences in sex seen in HIV infection have suggested that a large proportion of the weight loss in female patients may come from the fat compartments. Fat tissue losses can also alter metabolic stability.

In addition to nutrition and disease interaction, the health care professional must consider the nutritional interactions with treatment regimens. It is apparent that the efficacy of antiretroviral and other medications is important to nutritional status maintenance. There are currently four classes of antiretroviral medications: nucleoside reverse transcriptase inhibitors, nonnucleoside reverse transcriptase inhibitors, protease inhibitors, and fusion inhibitors. Lifelong pharmacotherapy with combinations of these medications may be required for continuous disease management and presents challenges to nutrition status maintenance by introducing potential interactions with food, body metabolism, and side effects. Potential side effects may be reduced in incidence or severity with nutrition status maintenance and strategies aimed at symptom management. Nutrients and nutritional status can affect medication absorption, use, elimination, and tolerance. Developing meal plans to support medication regimens may include meal timing, macronutrient and micronutrient modulation, and symptom management strategies. Nonnutrient therapies may be required to manage nutrition-related adverse effects of treatment, including exercise and medications.

Metabolic abnormalities, including changes in organ or other tissue function, leading to altered utilization, storage, and excretion of nutrients, may occur as a result of immune dysfunction, medication side effects, infection, or alterations in the hormonal milieu, or through the effects of HIV itself in adults and children. Since the introduction of highly active antiretroviral therapy (HAART), altered patterns of body composition (eg, peripheral loss of fat [lipoatrophy] and central fat deposition [lipohypertrophy]), metabolic abnormalities of elevated blood lipids, altered insulin sensitivity or glucose dysregulation, mitochondrial toxicity, and lactic acidosis have been reported. Some of these problems may have occurred independently and before the use of these therapies. An increase in longevity suggests that both clients and health care professionals will have to address these chronic metabolic and physical alterations as a part of routine health care provision.

Support to reduce or eliminate malnutrition shows the potential to significantly slow progression of disease, decrease its severity, and improve longevity. Individualized care that integrates medical and social services and is delivered by health care professionals with HIV experience, training, and expertise is necessary for optimally managing HIV disease. Dietetics professionals and other health care professionals involved in evaluation and intervention will need to be well versed in issues specific to HIV infection and its treatment as well as sensitive to privacy and disclosure of an HIV diagnosis. The HIV care provider should be comfortable in providing services to people with HIV infection without judgment.

Nutritional Evaluation

Nutrition plays an essential role in supporting the health and quality of life of people with HIV disease. Nutritional alterations can occur early in HIV infection, thus, nutrition intervention should begin soon after diagnosis. The negative effects of malnutrition are often preventable and are usually not easily reversed.

A complete baseline nutrition assessment should be performed as part of the multidisciplinary care plan development, with regular follow-up as indicated. For optimal care, a dietetics professional should perform nutrition evaluation and follow-up. There are many formats for nutrition evaluation, including the "ABCD" nutrition evaluation of anthropometric, biochemical, clinical, and dietary parameters. The dietetics professional or other qualified clinician may use these assessment parameters in partnership with clients to form the basis for the nutrition care plan.

AIDS-Related Wasting Syndrome

The AIDS-related wasting syndrome is defined by the CDC as a 10% weight loss from baseline in a 6-month period accompanied by diarrhea or fever for more than 30 days without a known cause. Although the rate of opportunistic infections has decreased in the last few years, the incidence of AIDS-related wasting syndrome according to this AIDS-defining diagnosis seems to have held steady. Malnutrition is not an AIDS-defining diagnosis at this time. Recommendations for a revision to the current CDC definition include time frames for weight loss and body composition alterations, with specific attention to the body cell mass compartment, to identify detrimental wasting of lean tissues that may occur even without weight loss. Anthropometrics are measures of body weight, dimension, and subcutaneous fat stores.

The manifestation of wasting has changed in the HAART era. Clients may experience body composition changes such as lean tissue wasting or lipodystrophy, which are not reflected as weight change and may not be identified in a weight record. Body composition changes characterized as lipodystrophy syndrome may involve fat accumulation in the abdomen, dorsocervical, and breast areas, and subcutaneous fat loss in the limbs and face. Screening and monitoring of wasting, lipodystrophy, and other body changes can be accomplished using measures of body composition, including anthropometrics, bioelectric impedance analysis, computed tomography scans, magnetic resonance imaging, and dual energy x-ray absorptiometry scans. The choice of diagnostic techniques should be appropriate for the problems experienced by the client. Although anthropometrics can provide important insight into nutritional status and alterations in body dimensions and composition, the clinician (includes dietetics professional, physician, nurse or nurse practitioner, physician assistant, and others) should be sensitive to the client's body image and self-esteem. The health care provider and the client should make informed decisions together about the use of anthropometrics to determine problems and monitor treatment.

The clinician should also determine the client's usual physical activity level, which may have an impact on the ability to prevent and treat wasting, alterations in body fat deposition, and other long-term complications of HIV disease and treatment. Limitations in physical activity should be noted, including barriers such as peripheral neuropathy and fatigue. These barriers should be further explored to determine the potential role for nutrition-related problems of anemias, vitamin B-12 alterations, and vitamin B-6 deficiency and toxicity.

Biochemical assessment provides laboratory measurements of serum protein, lipids, and micronutrients. Indicators of disease complications and prognosis include nutrition-related laboratory values such as albumin, transthyretin, hemoglobin, hematocrit, creatinine, urea nitrogen, transferrin, glucose, vitamin B-12, C-reactive protein, and other. For instance, alterations in nutrition-related laboratory values may reflect inflammatory responses rather than purely nutritional compromise. Alterations in micronutrient and macronutrient metabolism such as zinc, iron, selenium, vitamin B-12, carbohydrate, and fat have been reported during asymptomatic and symptomatic disease states. Zinc and albumin may decrease

rapidly during the physical stress of infection and quickly increase when an infection is resolved. Iron may be shunted to a storage form during inflammation. Various types of anemias occur with chronic HIV infection and may sometimes include anemias associated with nutrient deficiencies, but more often may reflect anemias of chronic disease and related to medication interactions. Although shifts in nutrient levels may not represent deficiency, other body tissues, such as blood, may be at risk for depletion of shunted nutrients.

Low levels of micronutrients are common because of malabsorption, alterations in metabolism, and accelerated turnover. Regular measures of albumin, transthyretin, hemoglobin, serum iron, total iron-binding capacity, magnesium, vitamin levels, trace elements, cholesterol, C-reactive protein, triglycerides, fasting glucose, CD4 and CD8 immune cells, HIV viral load, renal function, and liver enzyme levels may be useful in assessing nutritional status, depending on the patient's clinical status and disease stage.

Medication therapies, including the types, duration of use, and history of use, should be considered in nutritional status assessments. Some of the potential adverse effects that are related to medications include dyslipidemia, insulin resistance and glucose intolerance, and anemias. Evaluation of potential adverse effects of medications along with risk factors may help in the early identification of disease complications. For instance, a diagnosis of diabetes may alert the clinician to the possibility of an increased risk of neuropathies that can affect physical activity necessary for the maintenance of body composition.

Male and female patients may experience problems associated with medication interactions differently, which may be related to varying hormone and enzyme levels and body composition. For instance, female patients may experience higher increases in blood lipids, whereas the expected differences in ratios between low-density lipoprotein cholesterol and high-density lipoprotein cholesterol disappear between the sexes with antiretroviral therapy. A higher percentage of female patients experience fat accumulation, whereas male patients tend to experience subcutaneous fat losses. In the use of ritonavir- and nelfinavir-containing regimens, male patients may experience more diarrhea, whereas female patients may experience nausea, vomiting, and abdominal pain more frequently than male patients.

Dietary intake assessment examines eating patterns and current diet, and evaluates the factors influencing the client's ability to achieve an adequate diet. Important components of the diet history include evaluation of usual intake, current intake and any perceived changes, ethnic and cultural food preferences and practices, food preparation limitations, food intolerances, and use of macronutrient and/or micronutrient supplements. In addition, potential antiretroviral medication interactions with food, nutrient supplements, other medications, and herbal treatments should be considered in nutritional evaluations. Specific nutrients of interest include, but are not limited to, vitamins A, B-6, B-12, and D; folate; carotenoids; selenium; and zinc.

Psychosocial issues related to nutrition should also be evaluated. It is important to determine how the client is accessing food, including the use of food assistance programs, who is shopping for and preparing meals, how and where meals are prepared; whether there is a history of eating disorders or body image concerns; socioeconomic issues; and housing status. A discussion of the client's lifestyle, living arrangements, cultural practices, and weight- and food-related goals may help the clinician and the client work together to develop an appropriate nutrition care plan. In addition, factors that affect the ability of the individual to seek health care should be evaluated and addressed with the health care team to overcome barriers to achieving and maintaining nutritional status.

Risk factors for disease that affects or is affected by diet and nutritional status should be included in a complete nutrition evaluation. For instance, clients with a family history of renal dialysis, diabetes, and/or heart disease should be evaluated for these disease states on a routine basis. Risk factors such as smoking, alcohol or other drug abuse, age, sex, obesity or underweight, and medication profiles can help to

determine the need to monitor for bone mineral density losses, lactic acidosis, and other common complications of chronic HIV disease.

Pediatric Issues

Children living with HIV experience the same nutrition issues as adults who have the disease, but because of the added demands of growth and development, the effects are often more devastating. Inability to achieve a normal weight for height, growth stunting, failure to thrive, malnutrition, impaired cognitive development, and wasting are potential adverse nutrition-related outcomes in pediatric HIV. HIV-positive children are at high nutritional risk and should be referred for ongoing nutrition assessment and counseling. Children are hard-hit by HIV/AIDS worldwide, and the growing numbers of orphans tend to be malnourished and uneducated and to live in poverty. Some children and their families, friends, and school personnel may not know their HIV status, which presents challenges for counseling and intervention for medication interactions and other nutrition-related problems.

Nutrition assessment includes regular growth monitoring of height, weight, and head circumference with comparison to growth standards for age and sex. Additional anthropometry that may be helpful for serial measure comparisons includes thigh circumference and mid-upper arm circumference. Other aspects of nutrition assessment include dietary intake, psychosocial and environmental variables, physical activity, dental health, oral-motor feeding skills, and medical data (eg, clinical symptoms, comorbidities, nutrition-related laboratory values, viral load, and histories of medication and infections). In addition to the standard assessment, the clinician should address the following issues with nutritional implications in the pediatric population: Perinatal factors in infants, including nutritional status of the mother, exposure to drugs or alcohol, and birth weight.

The caregiver's choice of feeding method: HIV-positive mothers should be made aware of the risks and benefits of different infant feeding options, including the risk of transmission of HIV through breastfeeding. Mothers who can provide replacement feeding that is acceptable, feasible, affordable, sustainable, and safe are advised to do so. When these criteria cannot be met through family or community resources, particularly in resource-limited settings, women are advised to exclusively breastfeed.

- Inadequate nutritional intake because of limited food selectivity, poor appetite, nausea, vomiting, diarrhea, or malabsorption.
- Developmental and oral motor feeding skills delays or regression because of HIV encephalopathy or other reasons.
- Increased nutrient needs to achieve catch-up growth.
- Disordered eating patterns.
- Caregiver health and support system.
- Any distortions in the feeding relationship between caregiver and child.
- The food and economic security of the caregiver and child.

Nutrition Education and Counseling

The relationship between clinician and client is important in working together to identify nutrition goals and to develop a nutrition care plan that supports those goals. The nutrition care plan is an important part of the health care plan, and the dietetics professional should work cooperatively with the client and other members of the multidisciplinary care team to ensure that nutrition goals are congruent with other elements of the health care plan. The nutrition care plan should work in harmony with the client's complete physical, mental, spiritual, and emotional health goals. AIDS is a complex disease, and its treatment requires specialized knowledge in many areas, including nutrition.

Nutrition counseling can improve health outcomes and is an integral part of HIV care at any stage of the disease, from helping newly infected people to stay healthy to assisting people taking antiretroviral drugs to manage their therapy, to allowing people with end-stage AIDS to die with dignity. However, there are many potential barriers to the effectiveness of nutrition education and counseling interventions. Care providers need to work with their clients to develop creative ways to overcome barriers caused by cultural identity, linguistic preference, distrust, cognitive dysfunction, or limited literary skills. Dietetics professionals and other clinicians may find that they need to be prepared for clients from different and overlapping backgrounds, including refugees and immigrants, gay and transgender people, intravenous drug users, and heterosexual couples and their children. Clinicians should consider these elements when providing counseling and developing materials. Clients facing special challenges should be given opportunities for frequent nutrition counseling follow-up, linked to the multidisciplinary team.

Partnering with and supporting clients to develop goals and improve their health and nutrition requires care providers to develop education and counseling skills. There are many theories and methods available, and the care provider must use counseling styles that they are comfortable with but that are appropriate for their client's individual needs. Regardless of the methods used, all education and counseling should be free from value judgments and conducted in an atmosphere of trust and respect, with an emphasis on building rapport and partnership. These elements are essential to successful nutrition education and counseling in all practice areas, but are especially important when working with people living with HIV/AIDS who may be experiencing stigma and discrimination. Personal counseling should always be kept confidential, and care providers should become good listeners and allow the clients to direct the outcomes of the sessions. Some of the methods that may be incorporated into nutrition counseling include motivational interviewing, problem solving, cognitive behavior theory, and personal coaching.

An example of a method often used as a framework for nutrition counseling is the stages-of-change model, which identifies six stages that individuals go through when changing behavior: precontemplation, contemplation, preparation, action, maintenance, and termination. When using this model, care providers should recognize that change is a process for clients and that the process is repetitive, not linear. A client may enter the counseling process at any point in the stages of change model, and then may move to any other stage, and can be at different stages of change for different goals and behaviors. Care providers should be prepared to support self-efficacy for change when the client is in precontemplation and contemplation phases; to support behavior change when the client is in preparation, action, and maintenance phases; and to respond with flexible counseling skills and a dynamic care plan.

Nutrient Supplementation

Both nutrient and nonnutrient supplementation have been popular in the treatment of HIV infection for a variety of purposes. Supplements may emphasize calories, protein, fats, and micronutrients. Calorie-containing supplements may be required for patients with volume intolerances, extraordinary macronutrient needs, or other barriers to adequate intake to restore and maintain nutritional status. Calories are required to maintain weight, and additional dietary protein may be required to improve body cell mass. Dietetics professionals and other clinicians should keep in mind the potential for toxicities and interactions with prescribed medications when evaluating the potential benefit of nutrient and other supplementation. In general, the goals for nutrient intake should address the provision of food first and recognize that additional intake in pill or other refined forms should be viewed as supplementation beyond dietary intake. Nutrient and nonnutrient substances in foods act synergistically to improve utilization in many cases.

Supplementation based on levels described in the Dietary Reference Intakes, while staying below the known upper limits of safety, seems prudent in the absence of sufficient evidence. Specific nutrient and nonnutrient supplementation designed to address a deficiency or overcome an alteration in absorption or

utilization of endogenous and exogenous nutrients should be monitored routinely, as with any other medication therapy.

Dietetics professionals should have a good understanding of both the potential benefits and the problems that may be associated with the use of vitamin and mineral supplements. For instance, although there is a lack of case-controlled study evidence, case reports of high-dose intravenous regimens that include B vitamins and L-carnitine or oral vitamin C, B-complex, and L-carnitine or coenzyme Q supplementation along with the discontinuation of antiretroviral medications have suggested a need for this type of research.

Nutrient supplementation has been suggested in resource-limited settings to reduce the rate of mother-to-child transmission of HIV. Although single nutrients were initially explored, recent research suggests a role for multiple nutrient interventions. For instance, children with HIV infection who received multivitamin intervention were compared with those receiving vitamin A alone. The multivitamin group showed a better effect on diarrhea than the groups receiving vitamin A alone or no micronutrient supplementation.

In developed countries, specialized nutrition support has been explored to determine health impact. Restoration of intestinal function and immune cell counts was improved in severely malnourished children receiving complete nutrition support through total parenteral nutrition and enteral nutrition. Enteral nutrition showed even better results than parenteral nutrition for survival, weight gain, and improvement of CD4 cell counts. The study investigators noted that such intervention should take place before terminal stages.

Symptom Management

Nutrition-related side effects have been shown to correlate negatively with quality-of-life measures in people infected with HIV. Nutrition-related symptoms and side effects could have a significant effect on dietary intake and antiretroviral therapy adherence. Symptoms that may affect nutritional status may include nausea, vomiting, diarrhea, anorexia, pain, chewing/swallowing difficulties, taste changes, and others. Providing specific strategies to support clients through these challenges is an important part of nutrition therapy. Dietary strategies are the topic of many consumer guidelines and patient education publications.

Nonnutrient-Based Therapies

Nonnutrient therapies are recommended both to improve nutritional status and to augment HIV-related therapies. Risk-vs-benefit analysis should be conducted before the use of these adjunctive therapies, with careful attention to potential interactions with antiretroviral and other medications. Supplemental nutrients, herbs, and other medications may be processed by and otherwise affect the pathways that are used by antiretroviral medications. These substances may decrease or increase levels of antiretroviral medications and can also decrease or increase expected levels of the supplemental nutrients, herbs, or other medications. This can lead to a decreased level of and efficacy of the medications and/or increased toxicities. Examples of potential interactions of supplements with medications include the reduction of drug efficacy during the concomitant use of St. John's Wort, garlic, and Echinacea with protease inhibitors and/or nonnucleoside reverse transcriptase inhibitor antiretroviral drugs. Other potentially interacting herbal substances include ginseng, melatonin, milk thistle, geniposide, and skullcap.

There are many other issues related to HIV disease and side effects of medication therapy that may require nutrition intervention. With the development of HAART, life spans are increasing and people with HIV are facing new sets of challenges. Lipodystrophy has emerged as a complex issue in HIV care. Body composition and serum levels of total and free testosterone should be monitored regularly for changes that

indicate a decrease in lean body mass. Dietetics professionals and other clinicians may also wish to discuss the psychosocial impact of lipodystrophy with the client. Some clients may consider stopping treatment because of body image issues. Nutrition interventions should support the client's medication treatment goals while reducing any negative nutrition-related health impacts of the disease and the medication regimens. Coinfections, such as hepatitis C infection, may require specific attention to organ systems and the potential for additional therapies to interact with nutritional status, food, and other medications.

Along with lipodystrophy, an increased risk of cardiovascular disease and decreased insulin resistance are important issues with nutrition implications. Increases in blood lipids should be regularly monitored. Increases in risk factors for cardiovascular disease related to antiretroviral therapies are likely to require exercise and lipid-lowering medications in addition to dietary modification. Following a heart-healthy diet and exercise program has been shown to reduce blood lipid levels in HIV-positive patients. Clients require support to attain a healthful body weight and to reduce their intake of saturated fat, trans-fatty acids, salt, and dietary cholesterol. Clients with hypertriglyceridemia would benefit from increasing fiber intake, limiting simple carbohydrates, and avoiding alcohol.

Abnormal glucose tolerance has also been associated with HAART. Clients with insulin resistance may benefit from participation in diabetes education programs that can be integrated into their health care and in which they can learn strategies for regulating their blood glucose through diet and exercise. The potential benefit in the treatment of insulin resistance with oral antidiabetic drugs has been explored with some promising and mixed results. Metformin has shown some promise for the reduction of central fat accumulation, whereas the glitazones are under investigation for their potential to slow or reverse facial and peripheral subcutaneous fat losses. Furthermore, medication support may be indicated to help reduce blood lipid levels and insulin resistance and to increase lean body mass.

Although the causes are still unclear, HIV-positive clients may experience a progressive loss of bone mineral density leading to osteopenia or osteoporosis. Many HIV-positive clients have lower bone mineral density than expected for their age. Clients may have multiple risk factors for loss of bone mineral density, including some or all of the following: low body mass index, a history of weight loss, steroid use, a history of nucleoside reverse transcriptase inhibitor use, and smoking. Bone density should be monitored through the use of routine bone density tests such as dual energy x-ray absorptiometry. Modifiable risk factor reduction may include one or more of the following:

- Maintaining an optimal weight and preventing rapid weight loss;
- Reducing or discontinuing smoking, alcohol, and caffeine consumption;
- Reducing or balancing the consumption of foods and beverages high in phosphoric acid by choosing calcium-rich beverages (eg, milk or fortified soy beverages) instead of high-phosphorous carbonated beverages and eating a variety of protein foods;
- Working with primary care providers to adjust HAART to minimize side effects;
- Engaging in regular weight-bearing or resistance exercise; and
- Eating calcium-rich and vitamin D-fortified foods and supplementing with 500 to 1,200 mg/day calcium.

Vitamin K, vitamin C, and zinc are also important for bone formation and should be included in counseling on an adequate diet.

Nutritional counseling, nutrient supplements, and appetite stimulants have been successful in improving weight status, including fat and lean tissue volumes, for both adults and children. The health care plan also may include medication therapy together with diet strategies to reduce the adverse effects of nutrition-related disease complications. Increased protein intake, weight-bearing exercise, and the use of

growth hormones, anabolic steroids, insulin-sensitizing agents, and others have been shown to positively correlate with improved body composition and quality-of-life parameters.

Further support may be indicated to help reduce blood lipid levels, improve insulin sensitivity, and increase lean body mass. Dietetics professionals and other clinicians should be familiar with both nutrient-based and medication treatments for improving nutritional status and nutrient metabolism and storage ranging from exercise and complementary therapies to pharmacologic modulation. Exercise has shown efficacy in improving the restoration of lean tissues and has been recommended as an adjunctive therapy to improve body shape alterations and metabolic alterations such as insulin resistance. Increases in weight-bearing exercise and lean body mass may help to stimulate bone formation and require further study.

Testosterone replacement and anabolic steroids have been explored to assist in the restoration of body weight and body cell mass in addition to improving strength and quality of life. Potential for liver toxicity and changes in lipid profiles exists for anabolic steroid treatment.

Recombinant human growth hormone has been explored in the treatment of wasting and central fat accumulation. Growth hormone has been used at higher doses to recover from HIV-related wasting by restoring body cell mass and at lower doses to reduce central fat accumulation.

Anti-cytokine therapy, such as thalidomide, has been explored for treating tuberculosis and HIV-related wasting. At present, the use of thalidomide is limited by the potential for teratogenicity, peripheral neuropathy, and other adverse effects.

ACADEMY OF NUTRITION AND DIETETICS Position Statement Summary

Nutrition is an important element of HIV care. Nutrition interventions can increase quality of life, assist in symptom management, support medication therapy, and improve resistance against infections and complications. Nutrition-related complications in HIV-positive people are prevalent and impact disease progression and risk of mortality. All people infected with HIV should have the benefit of a nutrition care plan that includes both nutrition education and medical nutrition therapy as part of the multidisciplinary care plan. The client should have access to a dietetics professional for assessment and follow-up. Reimbursement for nutrition services is an important step in reducing barriers so that clients can access such care. Good nutrition as an essential part of HIV care can have a positive impact on all aspects of health.

Nutrition Screen & Referral Criteria for Adults with HIV/AIDS

The following forms that can be used as a “Nutrition Screen & Referral Criteria for Adults (18+ Years) with HIV/AIDS” was developed by the HIV/AIDS Dietetic Practice Group (DPG).

Nutrition Screen & Referral Criteria for Adults (18+ Years) with HIV/AIDS**

Name _____ Phone _____ Messages: Yes No Discreet Today Date _____

Gender _____ Language _____ DOB ____/____/____ Age _____ File # _____

Medicaid Waiver Client? Yes No Insurance _____ Case Managed By _____

Referred By _____ Date _____ Phone _____

Screen every six months and/or per status change. Automatically refer to a registered dietitian for any of the following:
(Check all that apply)

<p>A. Diagnosis and Nutrition Assessment</p> <p>1. <input type="checkbox"/> Newly diagnosed HIV infection</p> <p>2. <input type="checkbox"/> Newly diagnosed with AIDS</p> <p>3. <input type="checkbox"/> Any change in disease or nutritional status</p> <p>4. <input type="checkbox"/> No nutrition assessment by a registered dietitian or not seen by a registered dietitian in six months</p>											
<p>B. Physical Changes and Weight Concerns</p> <p>1. <input type="checkbox"/> > 3% unintentional weight loss from usual body weight in the last 6 months or since last visit (% wt. loss formula: usual body wt – current body wt / usual body wt x 100)</p> <p>2. <input type="checkbox"/> Visible wasting, < 90% ideal body weight, < 20 BMI, or decrease in body cell mass (BCM)</p> <p>3. <input type="checkbox"/> Uses anabolic steroids or growth hormone for weight, muscle gain or metabolic complications</p> <p>4. <input type="checkbox"/> Lipodystrophy: lipoatrophy, central fat adiposity and/or fat accumulation on the neck, upper back, breasts or other areas.</p> <p>5. <input type="checkbox"/> Abdominal obesity: Waist circumference > 102cm (40 in) for male and >88cm (35 in) for female</p> <p>6. <input type="checkbox"/> Client or MD initiated weight management, or obesity: BMI > 30</p>											
<p>C. Oral/GI Symptoms</p> <p>1. <input type="checkbox"/> Uses an appetite stimulant or suppressant</p> <p>2. <input type="checkbox"/> Loss of appetite, desire to eat or poor oral intake of food or fluid for > 3 days</p> <p>3. <input type="checkbox"/> Missing teeth, severe dental caries, difficulty chewing, swallowing</p> <p>4. <input type="checkbox"/> Mouth sores, thrush, or mouth, tooth or gum pain</p> <p>5. <input type="checkbox"/> Persistent diarrhea, constipation or change in stools (color, consistency, frequency, smell)</p> <p>6. <input type="checkbox"/> Persistent nausea or vomiting</p> <p>7. <input type="checkbox"/> Persistent gas, bloating or heartburn</p> <p>8. <input type="checkbox"/> Changes in perception of taste or smell</p> <p>9. <input type="checkbox"/> Food allergies or food intolerance's (fat, lactose, wheat, etc.)</p> <p>10. <input type="checkbox"/> Medication involving food or meal modification</p> <p>11. <input type="checkbox"/> Need for enteral or parenteral nutrition</p>											
<p>D. Metabolic Complications & Other Medical Conditions</p> <p>1. <input type="checkbox"/> Diabetes Mellitus, impaired glucose tolerance, impaired fasting glucose, insulin resistance, or hypo or hyperglycemia</p> <p>2. <input type="checkbox"/> Hyperlipidemia: cholesterol >200mg/dL, triglycerides ≥150mg/dL, LDL >130g/dL, &/or HDL <40 mg/dL (men) <50 (women)</p> <p>3. <input type="checkbox"/> Hypertension: three BP readings ≥ 135/85 mmHg or diagnosed with HTN</p> <p>4. <input type="checkbox"/> Hepatic Disease: Hepatitis C, Hepatitis B, cirrhosis, steatosis, or other: _____</p> <p>5. <input type="checkbox"/> Osteopenia/osteoporosis risk: per elevated alkaline phosphatase, DEXA of the hip & spine low T-scores</p> <p>6. <input type="checkbox"/> Other conditions: renal disease, anemia, heart disease, pregnancy, cancer or other: _____</p> <p>7. <input type="checkbox"/> Albumin < 3.5 mg/dL, prealbumin < 19 mg/dL, or cholesterol <120 mg/dL</p> <p>8. <input type="checkbox"/> Scheduled chemotherapy or radiation therapy</p>											
<p>E. Barriers To Nutrition, Living Environment, Functional Status</p> <p>Usually or always needs assistance with: Patient is:</p> <table border="0"> <tr> <td>1. <input type="checkbox"/> Eating</td> <td>4. <input type="checkbox"/> Homebound</td> <td>7. <input type="checkbox"/> Has limited or no cooking skills</td> </tr> <tr> <td>2. <input type="checkbox"/> Preparing food</td> <td>5. <input type="checkbox"/> Homeless</td> <td>8. <input type="checkbox"/> Lives on income of < \$6,000/yr</td> </tr> <tr> <td>3. <input type="checkbox"/> Shopping for food & necessities</td> <td>6. <input type="checkbox"/> Unable to secure food</td> <td>9. <input type="checkbox"/> Has no stove or refrigerator</td> </tr> </table>			1. <input type="checkbox"/> Eating	4. <input type="checkbox"/> Homebound	7. <input type="checkbox"/> Has limited or no cooking skills	2. <input type="checkbox"/> Preparing food	5. <input type="checkbox"/> Homeless	8. <input type="checkbox"/> Lives on income of < \$6,000/yr	3. <input type="checkbox"/> Shopping for food & necessities	6. <input type="checkbox"/> Unable to secure food	9. <input type="checkbox"/> Has no stove or refrigerator
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<p>F. Behavioral Concerns or Unusual Eating Behaviors</p> <p>1. <input type="checkbox"/> Binges, purges, purposely skips meals, or avoids eating when hungry</p> <p>2. <input type="checkbox"/> Consumes > two alcoholic beverages/day</p> <p>3. <input type="checkbox"/> IVDU or recreational drug use</p> <p>4. <input type="checkbox"/> Vegetarianism</p> <p>5. <input type="checkbox"/> Client initiated vitamin/mineral supplementation > RDA, or complimentary or alternative diet related therapies</p>											

Medical Information		
Referring Physician: _____ Phone #: _____		
Address: _____		
HIV Diagnosis Date: _____ AIDS Diagnosis: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, Date: _____		
Other Medical Diagnosis: _____		
Current Medications (dose, frequency including supplements): _____		
AIDS defining illnesses: _____		
Past Medical History: _____		
Karnofsky Score: _____ Physical activity clearance: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Restrictions: _____		
Additional Information (eg: smokes, alcohol use, etc.) _____		
Current Lab Values/Measurements <i>(Include below with date or attach recent copy)</i> _____ WBC _____ RBC _____ Hgb _____ Hct _____ MCV _____ MCH _____ Sodium _____ Potassium _____ Chloride _____ Total CO2 _____ BUN _____ Creatinine _____ Glucose (____ fasting ____ random) _____ Fasting Insulin _____ Glycated HbA1c	_____ Albumin _____ Prealbumin _____ AST _____ ALT _____ Alkaline Phosphatase _____ Testosterone (total) _____ Testosterone (free) _____ Lactic Acid _____ B12 _____ Folate _____ Other (_____) Lipids (____ fasting ____ non-fasting) _____ Total Cholesterol _____ LDL-Cholesterol (direct/indirect) _____ HDL-Cholesterol _____ Triglycerides _____ C-reactive Protein (ultrasensitive)	Virology/Immunology _____ HIV RNA/ml _____ Highest RNA/ml (date: _____) _____ CD4 _____ Nadir CD4 (date: _____) _____ Other (_____) Measurements _____ Height (in.) _____ Weight (lbs) _____ Usual body weight (lbs) _____ Body composition result (attached) _____ DEXA hip T-score _____ DEXA spine T-score _____ Other (_____)
Documentation that must be provided to the registered dietitian by referring agency		
<i>In addition to completing the Nutrition Screen & Referral Criteria, Medical Information and Current Labs/Measurement sections, the dietitian must have the following documentation before an appointment can be made.</i>		
1. Signed copy of patient's consent to release medical information 2. Signature of physician or individual authorized by state to refer for medical nutrition therapy 3. Nutrition prescription 4. Proof of residency and income if required for program eligibility		
Physician's order for medical nutrition therapy provided by a registered dietitian		
Comments:		

Signature of physician or individual authorized by state to refer for medical nutrition therapy _____ Date _____		

Nutrition Guidelines

The AIDS Information Network defines “Good Nutrition” as getting enough macronutrients and micronutrients. Macronutrients contain calories (energy): proteins, carbohydrates, and fats. They help maintain body weight. Micronutrients include vitamins and minerals. They keep cells working properly, but will not prevent weight loss.

Good nutrition can be a problem for many people with HIV. When the body fights any infection, it uses more energy and the patient needs to eat more than normal. But when one feels sick, they eat less than normal.

Some medications can upset the stomach, and some opportunistic infections can affect the mouth or throat. This makes it difficult to eat. Also, some medications and infections cause diarrhea. With diarrhea, the body actually uses less of what is eaten.

With weight loss, they might be losing fat, or they might be losing lean body weight like muscle. If they lose too much lean weight, the body chemistry changes. This condition is called wasting syndrome or cachexia. Wasting can kill.²⁶

- First, eat more. Extra muscle weight will help fight HIV. This is very important. Many people want to lose weight, but for people with HIV, it can be dangerous.
- Make sure they eat plenty of protein and starches, with moderate amounts of fat.
- Protein helps build and maintain muscles. Meats, fish, beans, nuts, and seeds are good sources.

Carbohydrates give energy. Complex carbohydrates come from grains, cereals, vegetables, and fruits. They are a "time release" energy source and are a good source of fiber and nutrients. Simple carbohydrates, or sugars give quick energy. Sugars are in fresh or dried fruit, honey, jam, or syrups.

Fat gives extra energy. The patient needs some - but not too much. The "monounsaturated" fats in nuts, seeds, canola and olive oils, and fish are considered "good" fats. The "saturated" fats in butter and animal products are "bad" fats.

A moderate exercise program will help the body turn food into muscle. Take it easy, and work exercise into daily activities.

Drinking enough liquids is very important when the person has HIV. Extra water can reduce the side effects of medications. It can help avoid a dry mouth and constipation. Be aware that drinking tea, coffee, colas, chocolate, or alcohol can actually make a person lose body liquid.

Recommended Daily Allowances

There is a popular misconception that all one has to do to get enough vitamins and minerals is to take a "one-a-day" multivitamin pill. Unfortunately, it's not that easy. The amounts of micronutrients in many of these pills are based on the *Recommended Dietary Allowances* (RDAs) set by the US government. The problem with the RDAs is that they are not the amounts of micronutrients that are needed by people with HIV. Instead, they are the minimum amounts needed to prevent shortages in healthy people. HIV disease and many AIDS medications can use up some nutrients. One study of people with HIV showed that they needed between 6 and 25 times the RDA of some nutrients! Still, a high potency multivitamin is a good way to get basic micronutrients.

Important Nutrients

There has not been a lot of research on specific nutrients and HIV disease. Also, many nutrients interact with each other. Most nutritionists believe in designing an overall program of supplements.²⁷

- People with HIV may benefit from taking supplements of the following vitamins and minerals:
- B Vitamins: Vitamin B-1 (Thiamine), Vitamin B2 (Riboflavin), Vitamin B6 (Pyridoxine), Vitamin B12 (Cobalamin), and Folate (Folic Acid).
- Antioxidants, including beta-carotene (the body breaks down beta-carotene to make Vitamin A), selenium, Vitamin E (Tocopherol), and Vitamin C.
- Magnesium and Zinc

Nutrients Safety

Most vitamins and nutrients appear to be safe as supplements, even at levels higher than the *Recommended Dietary Allowances* (RDAs). However, some can cause problems at higher doses, including Vitamin A, Vitamin D, copper, iron, niacin, selenium, and zinc.

- A basic program of vitamin and mineral supplementation should be safe. This would include the following, all taken according to directions on the bottle:
- A multiple vitamin/mineral (without extra iron),
- An antioxidant supplement with several different ingredients, and
- A trace element supplement. There are seven essential trace elements: chromium, copper, cobalt, iodine, iron, selenium, and zinc. Some multivitamins also include trace elements.

Practice Food Safety

It's very important to for the AIDS patient to protect themselves against infections that can be carried by food or water.

They should wash their hands before preparing food, and keep all of kitchen tools and work areas clean. Wash all fruits and vegetables carefully. They can't eat raw or undercooked eggs or meat, and the juices from raw meat need to be cleaned up quickly. Leftovers should be kept refrigerated and eaten within three days. Always check the expiration date on foods.

Section VII. CDC Guidelines for Healthcare Professionals

Preventing Occupational HIV Transmission to Healthcare Personnel

To prevent transmission of HIV to healthcare personnel in the workplace, the Centers for Disease Control and Prevention (CDC) offers the following recommendations.²⁸

Preventive Strategies and Risk Reduction

Healthcare personnel should assume that the blood and other body fluids from all patients are potentially infectious. They should therefore follow infection control precautions at all times.

These precautions include:

- The routine use of barriers (such as gloves and/or goggles) when anticipating contact with blood or body fluids
- Washing hands and other skin surfaces immediately after contact with blood or body fluids, and

- The careful handling and disposing of sharp instruments during and after use.

Safety devices have been developed to help prevent needle-stick injuries. If used properly, these types of devices may reduce the risk of exposure to HIV. Many percutaneous injuries are related to sharps disposal. Strategies for safer disposal, including safer design of disposal containers and placement of containers, are being developed.

Although the most important strategy for reducing the risk of occupational HIV transmission is to prevent occupational exposures, plans for postexposure management of health care personnel should be in place. CDC has issued guidelines for the management of HCP exposures to HIV and recommendations for postexposure prophylaxis (PEP).

These guidelines outline a number of considerations in determining whether or not healthcare personnel should receive PEP and in choosing the type of PEP regimen.

- For most HIV exposures that warrant PEP, a basic 4-week, two-drug (there are several options) regimen is recommended.
- For HIV exposures that pose an increased risk of transmission (based on the infection status of the source and the type of exposure), a three-drug regimen may be recommended.

Special circumstances such as a delayed exposure report, unknown source person, pregnancy in the exposed person, resistance of the source virus to antiviral agents, and toxicity of PEP regimens are also discussed in the guidelines.

Occupational exposures should be considered urgent medical concerns.

The CDC has recommended that the following steps be used in the *Management of Occupational Blood Exposures*:²⁹

1. Provide immediate care to the exposure site.
 - Wash wounds and skin with soap and water.
 - Flush mucous membranes with water.
2. Determine risk associated with exposure by
 - Type of fluid (e.g., blood, visibly bloody fluid, other potentially infectious fluid or tissue, and concentrated virus) and
 - Type of exposure (i.e., percutaneous injury, mucous membrane or nonintact skin exposure, and bites resulting in blood exposure).
3. Evaluate exposure source.
 - Assess the risk of infection using available information.
 - Test known sources for HBsAg, anti-HCV, and HIV antibody (consider using rapid testing).
 - For unknown sources, assess risk of exposure to HBV, HCV, or HIV infection.
 - Do not test discarded needles or syringes for virus contamination.
4. Evaluate the exposed person.
 - Assess immune status for HBV infection (i.e., by history of hepatitis B vaccination and vaccine response).
5. Give PEP for exposures posing risk of infection transmission.
 - --- Initiate PEP as soon as possible, preferably within hours of exposure.
 - --- Offer pregnancy testing to all women of childbearing age not known to be pregnant.

- --- Seek expert consultation if viral resistance is suspected.
 - --- Administer PEP for 4 weeks if tolerated.
6. Perform follow-up testing and provide counseling.
 - Advise exposed persons to seek medical evaluation for any acute illness occurring during follow-up.
 7. HBV exposures
 - Perform follow-up anti-HBs testing in persons who receive hepatitis B vaccine.
 - --- Test for anti-HBs 1--2 months after last dose of vaccine.
 - --- Anti-HBs response to vaccine cannot be ascertained if HBIG was received in the previous 3--4 months.
 8. HCV exposures
 - Perform baseline and follow-up testing for anti-HCV and alanine amino- transferase (ALT) 4--6 months after exposures.
 - Perform HCV RNA at 4--6 weeks if earlier diagnosis of HCV infection desired.
 - Confirm repeatedly reactive anti-HCV enzyme immunoassays (EIAs) with supplemental tests.
 9. HIV exposures
 - Perform HIV-antibody testing for at least 6 months postexposure (e.g., at baseline, 6 weeks, 3 months, and 6 months).
 - Perform HIV antibody testing if illness compatible with an acute retroviral syndrome occurs.
 - Advise exposed persons to use precautions to prevent secondary transmission during the follow-up period.
 - Evaluate exposed persons taking PEP within 72 hours after exposure and monitor for drug toxicity for at least 2 weeks.

Developing Health Care Workers Prevention Programs

Continued work in the following areas is needed to reduce the risk of occupational HIV transmission to healthcare personnel:

- **Administrative efforts.** All healthcare organizations should train HCP in infection control procedures and on the importance of reporting occupational exposures. They should develop a system to monitor reporting and management of occupational exposures.
- **Develop and promote the use of safety devices.** Effective and competitively priced devices engineered to prevent sharps injuries are needed for HCP who frequently come into contact with potentially HIV-infected blood and other body fluids. Proper and consistent use of such safety devices should be evaluated.
- **Monitor the effects of PEP.** More data are needed on the safety and acceptability of different regimens of PEP, particularly those regimens that include new antiretroviral agents. Furthermore, improved communication prior to treatment about possible side effects and close follow-up of HCP receiving treatment are needed to increase compliance with the PEP.

Section VIII. HIV/AIDS International Programs

The Role of America's Partnerships in the Worldwide Fight Against HIV/AIDS

For more than 25 years, the global community has witnessed the devastating impact of HIV/AIDS. Until recently, many wondered whether prevention, treatment and care could ever make a measurable impact, particularly in resource-limited settings where HIV was a death sentence.

Just 5 years ago, only 50,000 people living with HIV in all of sub-Saharan Africa were receiving antiretroviral treatment (ART). Recognizing that HIV/AIDS was and is a global health emergency requiring emergency action, President George W. Bush and a bipartisan, bicameral Congress reflected the compassion and generosity of the American people.

Their creation, the U.S. President's Emergency Plan for AIDS Relief (Emergency Plan/PEPFAR), holds a unique place in the history of public health for its size and scope:

- In size, with an original commitment of \$15 billion over 5 years, and a final funding level of \$18.8 billion, it is the largest international health initiative in history dedicated to a single disease and also the largest development initiative in the world. The first phase of PEPFAR went beyond a commitment to allocating resources to a commitment to achieving results, with ambitious goals to support prevention of 7 million new infections, treatment of 2 million and care for 10 million, including orphans and vulnerable children (OVCs).
- In scope, it is the first large-scale effort to tackle a chronic disease in the developing world. It moves beyond isolated efforts and pendulum swings that led programs to focus on prevention or treatment or care for HIV/AIDS, to sound public health principles - integrated prevention, treatment and care.

The results speak for themselves. On World AIDS Day 2008, President Bush announced that, ahead of schedule, the United States has fulfilled its commitment to support life-saving ART for 2 million people. As of September 30, 2008, the American people have supported ART for more than 2.1 million men, women and children living with HIV/AIDS around the world. Of these, over 2 million people were reached through bilateral programs in PEPFAR's 15 focus countries in sub-Saharan Africa, Asia, and the Caribbean. PEPFAR treatment support is estimated to save 3.28 million adult years of life through September 2009, and many more beyond that time frame. These additional years of life are ones in which people can play their vital roles in society as parents, teachers, or caregivers.

As of September 30, 2008, nearly 9.7 million people affected by HIV/AIDS in PEPFAR's focus countries have received compassionate care, including nearly 4 million OVCs. Using conservative projections, the American people have exceeded the goal of supporting care for 10 million people in PEPFAR's focus countries as of December 1, 2008. Worldwide, PEPFAR has supported care for over 10.1 million through September 2008.

From fiscal year 2004 through 2008, PEPFAR has supported prevention of mother-to-child HIV transmission (PMTCT) during nearly 16 million pregnancies. Antiretroviral prophylaxis has been provided to HIV-positive women in over 1.2 million pregnancies, allowing nearly 240,000 babies to be born free of HIV.

In FY2008, PEPFAR-supported programs reached 58.3 million people with support for prevention of sexual transmission using the ABC approach (Abstain, Be faithful, correct and consistent use of Condoms). The U.S. Government (USG) has supplied more than 2.2 billion condoms worldwide from 2004 through December 20, 2008 - as Dr. Peter Piot, former Executive Director of the Joint United Nations Programme on HIV/AIDS (UNAIDS) has said, more than all other developed countries combined. The American people have supported nearly 57 million counseling and testing encounters cumulatively through FY2008. Over the past 5 years, the 14 countries that received PEPFAR support for

safe blood programs have seen a decrease in the prevalence of HIV-infected units and are moving progressively closer to meeting their annual demand for safe blood.

On many fronts, the progress to date has been remarkable; as the Institute of Medicine (IOM) noted that PEPFAR has already achieved what many thought was impossible. Encouraged by this progress, Congress came together in a bipartisan way to strengthen the program. On July 30, 2008, President Bush signed into law P.L. 110- 293, the Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria Reauthorization Act of 2008, authorizing up to \$48 billion over the next 5 years to combat global HIV/AIDS, tuberculosis (TB), and malaria. Through FY2013, PEPFAR plans to work in partnership with host nations to support treatment for at least 3 million people; prevention of 12 million new infections; and care for 12 million people, including 5 million OVCs. To meet these goals and build sustainable local capacity, PEPFAR will support training of at least 140,000 new health care workers in HIV/AIDS prevention, treatment and care.

International Trends in HIV/AIDS

UNAIDS has revised its estimate of the number of people living with HIV/AIDS worldwide downward to 33 million from a previous estimate of 39.5 million. For the most part, the revision reflects the strengthening of HIV surveillance capacity over the past few years, as countries have implemented population-based surveys (in many cases with PEPFAR support) to supplement the antenatal clinic (ANC) surveillance previously used to estimate prevalence. Even with the new prevalence estimates, however, the number of people living with HIV/AIDS worldwide in 2007 was roughly 4.2 million more than in 2001. Prevention remains the central challenge.

International Prevention

Of the countless recent developments in the global fight against the pandemic, perhaps the most important is the growing number of nations in which there is clear evidence of declining HIV prevalence as a result of changes in sexual behavior. According to UNAIDS' 2008 Report on the Global AIDS Epidemic: "In sub-Saharan Africa, most national epidemics have stabilized or begun to decline." Zimbabwe, Botswana, Malawi, and Zambia are among those that have seen declines in national prevalence. The report also emphasizes, however, that although most sub-Saharan epidemics have stabilized, they have often done so at high prevalence levels. The report continues: "The rate of new HIV infections has fallen in several countries, although globally these favourable trends are at least partially offset by increases in new infections in other countries."

Mother-to-Child Transmission

Mother-to-child transmission remains the leading source of child HIV infections, and providing PMTCT remains an essential challenge. According to UNAIDS, the global number of children who became infected with HIV has dropped slightly, from 460,000 in 2001 to 370,000 in 2007.

PEPFAR supports host nations' efforts to provide PMTCT programs, including HIV counseling and testing for all women who attend ANC, and sharply increased its PMTCT resources in FY2008. PEPFAR has supported PMTCT interventions for women during nearly 16 million pregnancies to date, providing antiretroviral prophylaxis for over 1.2 million HIV-positive pregnancies, and preventing an estimated 237,600 infections of newborns.

International Treatment

AIDS is still among the most deadly infectious diseases in the world. In sub-Saharan Africa, the epicenter of the pandemic, it is the leading cause of death. More than 22 million of those infected - more than two

thirds of all people living with HIV/AIDS - live in the region, and approximately 1.7 million people die of AIDS there each year, more than three-quarters of the global total.³⁰

However, there is new reason for hope. On a global basis, UNAIDS also estimates that the number of people dying of AIDS-related causes has declined in recent years, from 2.2 million in 2005 to 2.1 million in 2007.

IX. Florida HIV/AIDS

Each state has developed specific processes and procedures to handle the AIDS epidemic. This section addresses the State of Florida law on AIDS and its impact on:

1. *Testing, confidentiality*
2. *Treatment of patients*
3. *Protocols and procedures applicable to HIV counseling and testing*
4. *Reporting*
5. *Offering of HIV testing to pregnant women*
6. *Partner notification issues*

Special Assignment - After completing this section each practitioner should use the Internet to research their own state requirements. The issues addressed in Florida will be same that are faced across the US.

Florida AIDS Statistics

In August 2008, the Centers for Disease Control and Prevention (CDC) reported that Florida ranked second among states in the number of reported acquired immune deficiency syndrome (AIDS) cases. New York reported 5,495 (14%), followed by Florida with 4,932 cases (13%), then California with 3,960 cases (10%), and Texas with 2,998 cases (8%). Florida ranked fifth among the 38 states that reported human immunodeficiency virus (HIV) cases.³¹

- The HIV/AIDS epidemic in Florida has disproportionately impacted minorities. An important issue common to all minorities is access to health care, including HIV diagnostic and treatment services.
- The Florida Department of Health estimates that 89,520 Floridians are living with HIV. Males account for 70% and women account for 30% of cumulative reported HIV infections.
- Of the over 89,000 cumulative HIV cases in Florida, 49% are among African Americans, 31% are among Caucasians, and 19% are among Hispanics.
- HIV/AIDS is the leading cause of death in Florida for both black males and black females.

HIV Testing Trends Among Women in Florida

HIV/AIDS has reached crisis proportions among minority women in Florida. The recent bureau report "Organizing to Survive" was released to raise awareness about the magnitude of the epidemic among women and to provide tools to mobilize women to take action. The *SOS: Sistas Organizing to Survive* initiative was launched specifically to mobilize black women to fight HIV in their communities. One of the goals of SOS is to test 100,000 black women each year by 2010.³²

Between 1997 and 2007, the number of HIV tests among white women decreased, while increasing for black and Hispanic women. In the past two years, testing among Hispanic and white women has been

relatively stable. In comparison, black women increased their testing numbers by almost 10,000 between 2006 and 2007. As the number of women tested has increased the positivity rate has decreased. While the positivity rate has decreased dramatically for black women, it is still over three times the rate of white and Hispanic women.

HIV/AIDS in the Black Community

Blacks comprise 15% of Florida's adult population, but over half (53%) of the 4,944 AIDS cases and 45% of the 7,503 HIV cases reported in 2008. There are currently 92,738 adults in Florida living with HIV/AIDS, of which 44,612 (49%) are black.

The proportion of HIV/AIDS cases among blacks have been significantly decreasing from 1998 through 2008, although the rates are still many times higher than those among whites or Hispanics.

In 2008 Florida reported that:

- Blacks accounted for 45% of 3,415 AIDS cases in men and 71% of 1,529 AIDS cases in women
- The AIDS case rate among black women was 20 times higher than that among white women
- The AIDS case rate among black males was 6 times higher than that for white males in Florida.
- Of the 1,259 living pediatric HIV/AIDS cases (age <13) reported through 2008, 77% were black. Black children made up 21% of Florida's population (under age 13)
- Among black male cases living with HIV/AIDS through 2008, 46% were MSM
- Among black female cases living with HIV/AIDS through 2008, 87% acquired HIV via heterosexual contact

For 16 consecutive years, HIV/AIDS has been the leading cause of death for both black males and females between the ages 25-44. Although HIV/AIDS is still the leading cause of death for black females ages 25-44, HIV/AIDS is now down to the 3rd leading cause of death for black males ages 25-44.³³

HIV Testing Trends Among Men Who Have Sex With Men (MSM)

In late 2007, the Bureau of HIV/AIDS released "Out in the Open" (OIO), a report highlighting the disproportionate impact of HIV on MSM and calling for better HIV prevention efforts and interventions targeted to Florida's MSM. The 2006 Florida HIV incidence estimates, which were based on a new and more accurate estimation methodology developed by the Centers for Disease Control and Prevention (CDC), were released in November 2008. Over half of Florida's new infections in 2006 occurred among MSM, a group that has historically been heavily affected by HIV/AIDS. In this analysis of routinely collected data from the statewide publicly funded HIV testing program, focuses on testing patterns among MSM. The data presented here include both MSM and MSM who also use injection drugs (MSM/IDU). Combined, these two risk groups accounted for just 6.9% of HIV tests performed in 2008, but 36.3% of the HIV-positive test results.³⁴

HIV disproportionately impacts black MSM. In 2008, white MSM had 43.3% of tests but only 32.9% of positives. In contrast, black MSM accounted for only 24.5% of tests but 37.0% of positive results. Hispanics accounted for 29.8% of the tests and 28.8% of the positives.

The number of MSM tested and the positivity rate from 2004 through 2008 by race/ethnicity. These figures show that while black MSM test in fewer numbers, their positivity rates continue to be the highest of any racial/ethnic group tested. They also show that since the release of OIO, MSM testing has increased.

More MSM (56.6%) seek HIV testing at community-based organizations (CBOs) than any other venue, which affords CBOs an excellent opportunity to provide targeted prevention and empowerment messages in a location their clients already prefer. County health department (CHD) field visits find and test comparable numbers of MSM (4.3%) and other risk groups (3.8%).

Florida Omnibus AIDS Act

In 1988, Florida became one of the first states with high rates of HIV infection to enact comprehensive legislation addressing the AIDS epidemic. The Omnibus AIDS Act and related laws directly affect doctors, nurses, health care administrators and other front-line healthcare providers. This Act remains consistent with the recommendations of many national organizations that have carefully examined the issues.

The Act is based upon the health policy judgment that this illness can best be controlled through an informed public that knows how avoid contracting and transmitting the disease and that voluntarily agrees to be tested. The Omnibus AIDS Act promotes its general health objectives principally through education.

The Act's approach to controlling the spread of the HIV epidemic was based on four key facts:

1. **Limited mode of transmission.** The spread of the disease is through casual contact so that education regarding behavior choices is stressed.
2. **Undetected Infection Period.** The period between infection and antibody production may take up to 6 months or longer. Testing can determine that a person is totally HIV virus-free and therefore incapable of spreading the disease versus being just HIV anti-body free.
3. **Lack of a cure.** There are effective drugs available to control the HIV virus in the body but there is no cure.
4. **Public Hostility.** The public has shown hostility to those with AIDS and have not been as accepting of people with this illness as they are with other chronic illnesses.

The Act amends civil rights laws to prohibit discrimination against persons who have or are thought to have the infection. It anti-discrimination provisions apply in areas such as employment, housing, public services, public accommodations, and health and life insurance.

HIV Tests

The most common screening tests used today are EIA (enzyme immunoassay) and ELISA (enzyme-linked immunosorbant assay). A second test, referred to as the Western Blot test, is run to confirm a reactive EIA/ELISA. Tests are over 99% accurate.³⁵

Student Health Services uses the OraQuick ADVANCE Rapid HIV-1/2 Antibody test as the initial screening test. This test is used to see if a sample of blood or oral fluid contains HIV antibodies. If in the lab the test appears to be non-reactive, a person would be considered as "negative," keeping in mind the window period for possible exposure and HIV antibody production.

If in the lab the test appears to be reactive, the results would be considered "indeterminate" or "preliminary positive" and the second test (the Western Blot) would need to be done. In other words, a positive screening test does not mean a person is positive or negative – the Western Blot test MUST be performed before a final result is reported. If this occurs in SHS, a blood sample needs to be drawn so it can be sent to the reference lab. If this test result comes back negative, a person's results are considered "negative." If this test comes back positive, a person's results would be considered "positive," and therefore considered as having HIV.

Partner Notification Protocol for Practitioners

Pursuant to Section 456.061, F.S., a practitioner regulated through the Division of Medical Quality Assurance of the Department of Health, acting reasonably and in good faith and following a perceived civil or ethical duty, shall not be civilly or criminally liable for advising the sex or needle-sharing partner(s) of a human immunodeficiency virus (HIV) infected patient of the positive test result when done in accordance with the following protocol:³⁶

1. The patient who has tested positive for HIV must have disclosed to the practitioner the identity of a sex and/or needle-sharing partner(s). The practitioner has no duty to ask the identity of such partner(s) and has no authority to act on information from another source.
2. Before informing a sex and/or needle-sharing partner(s), the practitioner shall recommend that the patient notify his/her sex and/or needle-sharing partner(s) of the positive test result and avoid any sexual or drug activity likely to transmit the virus to others. The practitioner shall inform the patient of the availability of partner notification services offered by the Department of Health(DOH) County Health Departments. Care shall be taken to focus on the beneficial action the patient can take, now and in the future, to prevent others from transmitting or acquiring HIV.
3. If the HIV infected patient refuses to inform his sex or needle-sharing partner(s) of the positive test result or to use the partner notification services offered by the DOH County Health Departments, the practitioner shall inform the patient of his/her intent to inform the sex and/or needle-sharing partner(s), if the name(s) of partner(s) have been voluntarily disclosed to the practitioner by the HIV infected patient.
4. Practitioners shall note in the HIV infected patient's medical record that the patient has been counseled to notify sex and/or needle-sharing partner(s). The practitioner shall document that the patient refused to notify partners.
5. The practitioner shall reveal the positive test result to the sex or needle-sharing partner(s) of an HIV infected patient only in a private face-to-face meeting unless special circumstances justify an alternative, such as the exposed partner's inability to meet face-to-face with the practitioner.
6. The practitioner shall not disclose to anyone else the identity of the exposed partner. The name(s) of the partner(s) shall not be included in the HIV infected patient's medical record.
7. A practitioner, acting in accordance with this protocol, shall not be held liable for disclosing the identity of an HIV positive patient to his or her sex and/or needle-sharing partner(s). Nevertheless, in each partner notification, the practitioner shall consider the benefits of notifying the sex and/or needle-sharing partner(s) of an HIV positive patient without disclosing the name of the HIV positive patient.
8. After notifying a partner of his or her exposure to HIV, a practitioner shall inform the partner of available counseling and testing services, including anonymous and confidential testing programs conducted at some DOH County Health Departments. The practitioner shall discuss with the exposed partner(s) ways to prevent the spread of HIV. If providing counseling, the practitioner shall encourage, not pressure, partners to take the HIV antibody test. Practitioners also shall encourage partners to refer their own sex and/or needle-sharing partner(s) for counseling and voluntary testing even when they do not intend to be tested themselves.

Model Protocol for HIV Counseling and Testing Conducted Outside County Health Departments and Registered Testing Programs

This model protocol provides guidelines on performing confidential HIV counseling and testing in accordance with statutory requirements and established public health policy. Florida law carefully structures the manner in which health care providers may perform HIV tests. The law requires those who perform HIV tests to obtain the informed consent of the test subject, confirm positive preliminary results with a supplemental test before informing the test subject of the result, except as provided for in s. 381.004(3)(d)2., F.S., and make a reasonable attempt to notify the test subject of his or her test result.³⁷

Evaluating an individual's risk for HIV infection and offering HIV testing on a voluntary basis should be a routine part of primary health care. Risk assessment should take place without regard to age, religion, sexual orientation, gender, race/ethnicity, marital status, economic status, social or other cultural factors.

Risk Assessment

Risk assessment involves asking the individual a series of open-ended questions to determine behaviors that may put them at risk for HIV infection. When conducting the risk assessment, it is important to assure the client that all information is confidential under Florida law. Questions should be asked in a professional, culturally sensitive, non-judgmental manner.

The following criteria should be used to help the test subject determine his or her level of risk:

- Sexual behavior
- Substance use/abuse
- Needle sharing
- Occupational exposure
- Blood/blood products/transplants
- Partners at risk for HIV
- History of sexually transmitted disease(s)
- Child of woman with HIV/AIDS
- History of sexual assault/domestic violence
- Sex for drugs/money

Appropriate referrals should be made based on information obtained in the risk assessment.

Pre-Test Counseling

Florida law no longer requires pre-test counseling, except in the case of a provider who attends a pregnant woman for conditions related to her pregnancy; however, it is recommended that HIV testing be preceded by a pre-test counseling session consisting of the following elements:

1. Purpose of the HIV test
2. Indications for testing (medical indication and/or information obtained from the risk assessment);
3. The possible need for retesting
4. Information on how to avoid contracting and transmitting HIV infection
5. Potential social, medical, and economic effects of a positive test result
6. Options for eliminating and/or reducing risk behavior
7. The availability of support services for those awaiting test results (e.g., hotlines, health care professional's name and telephone number, county health department number)
8. Scheduling a specific date for receiving test results. It is recommended that positive results always be disclosed during a face-to-face post-test counseling session.

If the health care provider chooses to release negative HIV test results without face-to-face post-test counseling, a system should be in place to ensure the confidentiality of this information. This system might include giving the results over the telephone after test subjects identify themselves with a previously agreed upon code word or number. This process should be explained to clients prior to administering the HIV test. Florida law imposes strict penalties for breaches of confidentiality.

Informed Consent

- No person shall perform an HIV test without first obtaining the informed consent of the test subject or his or her legal representative. The limited exceptions to obtaining informed consent can be found in s. 381.004 (3)(h), F.S.
- When obtaining informed consent, explain the right to confidential treatment of information identifying the subject of the test and the results of the test to the extent provided by law. Persons with knowledge of an individual's HIV test result have legal obligations to protect this information from unauthorized disclosure. Special provisions for hospitals are listed in s. 381.004(3)(g), F.S.
- Consent need not be in writing provided that documentation is included in the medical record indicating that the test was explained and informed consent was obtained. (A few limited exceptions are included in Rule 64D-2.004(4), F.A.C.).
- In accordance with Administrative Rule 64D-2.004, Testing Requirements, an explanation of the following information represents a sound and reasonable standard for obtaining informed consent:
 1. An HIV test is a test to determine if an individual is infected with the virus which causes AIDS
 2. The potential uses and limitations of the test (the reliability of the results and what positive, negative or indeterminate results do and do not mean);
 3. The procedures to be followed; and,
 4. HIV testing is voluntary and consent to be tested can be withdrawn at any time prior to testing.
- Persons who volunteer to be tested confidentially for HIV should be informed that positive test results will be reported to the local county health department so that health department staff may contact persons who test positive to offer follow-up activities. Examples of voluntary follow-up activities are post-test counseling for persons who do not return for test results, referrals for medical evaluation, case management services and voluntary partner notification. (Exemptions from HIV reporting include persons tested anonymously at a registered anonymous test site, testing in the event of a significant exposure or university-based medical research protocols approved by the Department of Health.)
- The test subject must also be given information on the availability and location of anonymous test sites. Each county health department maintains a list of available anonymous test sites to be disseminated to all persons and programs offering HIV testing within their service area.

Post-Test Counseling

The person ordering the test or that person's designee shall ensure that all reasonable efforts are made to notify the test subject of his or her test result. In the case of a hospital emergency department, detention facility, or other facility where the test subject has been released before being notified of positive test results, informing the county health department for the department to notify the test subject fulfills this responsibility. When test subjects are given their test results, Florida law requires that, at a minimum, the following information be provided:

- For positives, information on preventing transmission of HIV, the availability of appropriate medical and support services and on the importance of notifying sex and/or needle-sharing partners who may have been exposed. Providers must make a good faith effort to ensure that spouses and former spouses (from the past ten years) of HIV-infected persons are notified that they may have been exposed to HIV infection.
- For negatives, information on preventing the transmission of HIV, if appropriate.

Although Florida law no longer requires a face-to-face post-test counseling session, it is recommended that providers conduct such a session when the individual tests positive or is a high-risk negative. A post-test counseling session should consist of the following elements:

- The meaning of the test results;
- The potential social, medical and economic effects of a positive test result;
- The possible need for retesting;
- A reassessment of risk;
- Availability of health care, mental health, social and support services for those testing negative;
- Options for eliminating and/or reducing the transmission of HIV infection to the individual and/or partners;
- A discussion of the increased risk for TB and appropriate referrals for TB testing and treatment; and,
- Other appropriate referrals (e.g., STD, primary care, psychosocial).

Release of Preliminary HIV Test Results

Pursuant to s. 381.004(3)(d), F.S., preliminary test results may be released to health care providers and to the person tested when decisions about medical care or treatment cannot await the results of confirmatory testing. Positive preliminary HIV test results shall not be characterized to the patient as a diagnosis of HIV infection. Justification for the use of preliminary test results must be documented in the medical record by the health care provider who ordered the test. This does not authorize the release of preliminary test results for the purpose of routine identification of HIV-infected individuals or when HIV testing is incidental to the preliminary diagnosis or care of a patient. Corroborating or confirmatory testing must be conducted as follow up to a positive preliminary test. Results shall be communicated to the patient according to statute regardless of outcome.

Pregnant Women/Special Provisions (This requirement was effective October 1, 1996)

Florida law (s. 384.31, F.S.) requires a health care provider who attends a pregnant woman for conditions relating to her pregnancy to offer testing for HIV and counsel her on the availability of treatment if she tests positive.

If the pregnant woman objects to HIV testing, a reasonable attempt must be made to obtain a written statement of objection, signed by the patient, which shall be placed in her medical record. If a pregnant woman tests HIV negative, consideration should be given to offering the test again at a later date during her pregnancy because of the window period of up to 6 months between exposure to HIV and testing positive for antibodies and the risk of exposure during pregnancy through sex or needle sharing.

When a pregnant woman tests HIV positive she should also be referred to the Healthy Start Care Coordination System.³⁸

Exceptions to Informed Consent Requirements

HIV testing without informed consent is allowed under the following circumstances:³⁹

- Bonafide medical emergencies only if the provider documents that the tests were medically necessary in order to provide emergency care or treatment and the test subject is unable to consent.
- When the medical records document that obtaining informed consent would be detrimental to health of the patient and the test results are necessary form medical diagnostic purposes to provide appropriate care.
- Testing is permitted in certain subjects such as convicted prostitutes and medical cadavers. Federal law allows testing on immigrants without consent in certain situations.
- Victims of criminal offenses that involve transmission of body fluids may require the person charged to be tested for HIV infection.
- Blood and tissue donations.
- When a licensed physician determines that it is medically indicated that a hospitalized infant have an HIV test and the parents cannot be located. The reason why consent could not be obtained must be documented in the medical records.
- A court may order that an HIV test be performed without the individual's consent.

Section X. Additional Resources

Links to organizations found at this site are provided solely as a service. Links do not constitute an endorsement of these organizations or their programs by Vantage Professional Education (VPE), and none should be inferred. VPE is not responsible for the content of the individual organizations' Web pages found at these links.

AIDS.Org

7985 Santa Monica Blvd. #99
West Hollywood, CA 90046
<http://www.aids.org/index.html>

AIDSinfo

A U.S. Department of Health and Human Services (DHHS) project providing information on HIV/AIDS clinical trials and treatment
<http://www.aidsinfo.nih.gov/>

The Academy of Nutrition and Dietetics

120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
312/899-0040
<http://www.eatright.org>

CDC National AIDS Hotline

1-800-342-AIDS
Spanish: 1-800-344-SIDA
Deaf: 1-800-243-7889

HIV/AIDS Dietetic Practice Group (DPG) of the Academy of Nutrition and Dietetics

<http://www.hivaidsdpg.org/>

Section XI. Continuing Education Answer Sheet & Test Questions

Dietitians: RD, CDE, LDN, DTR. Approved for **4 CPE credits.** VPE (Provider Number VA002) is a CPE Accredited Provider with the CDR.

Course Expiration Date: 4/14/12

We will mail you a Certificate of Completion for your Activity Log for the CDR reporting.

#091208 AIDS/HIV Guide for Dietitians

Guarantee: We guarantee our Continuing Education Certificates. If for any reason your state does not accept our Continuing Education Credits, we will refund the amount paid by the student for the Certificate. A grade of 70% or better is required to pass this test.

Payment		Total
Credits	Per Credit	
4 x	\$9.00	\$ 36.00
Make Check Payable to: VPE		

Mail Answer Sheet & Payment:

Ms. Angela Turton, Registrar
 Vantage Professional Education
 P.O. Box 172835
 Tampa, FL 33672

ANSWER SECTION				
	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>
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13	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Print Name _____

Address _____

City _____

State _____ Zip _____

Name of Employer _____

Phone Day (____) _____ - _____

E-mail _____

ACADEMY OF NUTRITION AND DIETETICS/CDR Lic#

(Required) _____ FL Lic # _____

License Exp Date _____

Dietitian: O RD O DTR O LDN Other _____

Course Objectives Evaluation: Did the course content meet the stated objectives?	Disagree				Agree
1. Explain the terms HIV and AIDS.....	1	2	3	4	5
2. Explain HIV and AIDS transmission and prevention.....	1	2	3	4	5
3. Identify HIV/AIDS prevalence and high risk groups.....	1	2	3	4	5
4. Describe CDC HIV prevention strategies.....	1	2	3	4	5
5. Identify HIV/AIDS approved treatments.....	1	2	3	4	5
6. Explain Academy of Nutrition and Dietetics HIV Nutrition Guidelines.....		1	2	3	4
7. Explain the CDC Guidelines for preventing the transmission of HIV in a healthcare setting....	1	2	3	4	5
8. Describe the HIV/AIDS International Programs.....	1	2	3	4	5
9. Identify State HIV/AIDS procedures and protocols	1	2	3	4	5

AIDS/HIV Guide for Dietitians (#091208)

30 Test Questions: Please use the Answer Sheet

Dietitians: RD, CDE, LD/LCN, DTR.

This offering is approved for **4 Continuing Professional Education Credits** by the Commission on Dietetic Registration (CDR).

1. Which of the following correctly identifies the term HIV?
 - a) Human Immunodeficiency Virus
 - b) Human Immunization Virus
 - c) Human Immo-verile Virus
 - d) Human Immunefficiency Virus
2. Which of the following correctly identifies the term AIDS?
 - a) Actual Immunodeficiency Deficit Syndrome
 - b) Acquired Immune Deficiency Syndrome
 - c) Acquired Infections Deficit Syndrome
 - d) Acquired Infections Deficiency Syndrome
3. A person is diagnosed with AIDS when the T cells drop below what count (per cubic millimeter)?
 - a) 900
 - b) 1,200
 - c) 600
 - d) 200
4. Which of the body's cells is the primary target of HIV?
 - a) CD4+ 8
 - b) CD4+ T
 - c) CD+ 4T
 - d) CD-HIV
5. According to the CDC what fraction of HIV infected persons are also infected with the hepatitis C virus?
 - a) 1/8
 - b) 1/4
 - c) 1/2
 - d) 3/4
6. What group of people do recent studies indicate are most likely to be severely affected by HIV?
 - a) American Indians
 - b) Asians
 - c) African Americans and bisexual men
 - d) Patients that receive blood transfusions
7. Which of the following descriptions best describes the term MSM?
 - a) Bisexual men
 - b) All men who have sex with men regardless of how they identify themselves
 - c) Heterosexual men
 - d) Bisexual women
8. According to the CDC what percentage of people infected with HIV do not know they are infected?
 - a) 5%
 - b) 10%
 - c) 25%
 - d) 35%
9. What is the most common way for African American men to get HIV?
 - a) *Sharing injection drug works*
 - b) Having unprotected sex with women
 - c) Having a blood transfusion
 - d) Having unprotected sex with another man who has HIV
10. What is the most common way for African American women to get HIV?
 - a) Sharing injection drug works
 - b) Having a blood transfusion
 - c) Having unprotected sex with a man who has HIV
 - d) Having unprotected sex with another women

11. What does the term 'Down Low' refer to?

- a) Men who have sex with other men as well as women that do not identify themselves as gay or bisexual
- b) Bisexual men
- c) Men with STDs
- d) Gay men

12. What is the average time it takes for an HIV infection to appear as AIDS?

- a) 1 year
- b) 2 years
- c) 5 years
- d) 10 years

13. What percentage of HIV infected people first find out they have HIV less than one year before AIDS appears?

- a) 5%
- b) 10%
- c) 40%
- d) 60%

14. Identify the CDC's new initiative to reduce further the incidence of AIDS?

- a) Advanced Prevention Program for HIV
- b) Advanced HIV Prevention
- c) HIV Prevention Program
- d) Highly Advanced HIV Prevention

15. What % of those who test positive at CDC funded public testing sites do not return for their results?

- a) 11%
- b) 21%
- c) 31%
- d) 41%

16. How quickly will a rapid test detect HIV antibodies?

- a) Produces very quick results in 60 minutes or less
- b) Produces quick results in 90 minutes or less
- c) Produces quick results in 120 minutes or less
- d) Produces quick results in 240 minutes or less

17. What does the term HAART mean?

- a) Higher Active Antiretroviral Therapy
- b) Hugely Active Antiretroviral Therapy
- c) High Action Antiretroviral Therapy
- d) Highly Active Antiretroviral Therapy

18. What is the most common reason for treatment failure and development of drug resistance?

- a) Additional STDs
- b) Missing medication doses
- c) Alcohol consumption
- d) Poor diet

19. How often should a patient with a CD4 count be tested?

- a) Biweekly
- b) Monthly
- c) 3 – 6 months
- d) Annually

20. What is the name of the AND's HIV/AIDS advocacy group?

- a) AND DLH Advocacy Group
- b) HIV/AIDS Dietetic Practice Group
- c) Infectious Diseases Nutrition DPG
- d) HIV/AND Advocacy Group

21. Which of the following is recommended by the ACADEMY OF NUTRITION AND DIETETICS for AIDS patients?

- a) Medical nutritional registration (MNR)
- b) Medical nutrition therapy (MNT)
- c) Medical nutrition dietetics (MND)
- d) Medical metabolism therapy (MMT)

22. What is the CDC definition of AIDS Wasting?

- a) Loss of more than 20% of body weight
- b) More than 45 days of diarrhea or weakness and fever
- c) Involuntary loss of more than 30% of body weight and general weakness
- d) Involuntary loss of more than 10% of body weight from a 6 month baseline period and diarrhea or fever

23. Which of the following best describes the condition of lean tissue wasting or lipodystrophy?

- a) Body composition changes
- b) Weight change of more than 20% in a 6 month baseline period
- c) Formal review of long term weight chart
- d) Loss of fat in the abdomen and breast area

24. Which of the following AND recommendations would Clients with hypertriglyceridemia benefit from?

- a) Increasing fiber intake, limiting simple carbohydrates, and avoiding alcohol
- b) Increasing fiber intake, and require exercise in addition to dietary modification
- c) Decreasing fiber intake, and require exercise in addition to dietary modification
- d) Require exercise and lipid-lowering medications in addition to dietary modification

25. Which of the following is recommended as a infection control precaution?

- a) The routine use of barriers (such as gloves and/or goggles)
- b) Washing hands and other skin surfaces immediately after contact with blood or body fluids,
- c) The careful handling and disposing of sharp instruments during and after use
- d) All of the above

26. For how long a period after the exposure to HIV does the CDC recommend that the health care worker should be tested for HIV antibodies?

- a) For at least 3 months
- b) For at least 6 months
- c) For at least 9 months
- d) For at least 12 months

27. Which of the following foods should be avoided by AIDS patients?

- a) Raw or undercooked eggs or meat
- b) Overcooked meat
- c) Baked potatoes
- d) Carrots and essential fatty acids

28. What is the name of former President Bush's US Aids Relief Plan?

- a) Faith Based Organizations
- b) Non-Government Organizations Relief (NGO's)
- c) Anti-retroviral Treatment Program
- d) US President's Emergency Plan for Aids Relief (PEPFAR)

29. How many adult years of life is the PEPFAR treatment support estimated to have saved?

- a) 8 million
- b) 3.28 million
- c) 1.28 million
- d) 1 million

30. How many people does the UN AIDS estimate are living with HIV/AIDS worldwide?

- a) 39.5million
- b) 29.5 million
- c) 20 million
- d) 5 million

Section XII. Footnotes

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