

AIDS/HIV

2 Contact Hours

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COURSE DESCRIPTION:

The purpose of this course is to introduce and reinforce knowledge about HIV and AIDS. The content of the course includes HIV modes of transmission, risk factors, pathophysiology, signs and symptoms, infection control, and prevention. Also included is the treatment of AIDS/HIV, opportunistic infections, the signs and symptoms of opportunistic infections, occupational and nonoccupational post exposure prophylaxis, some legal considerations relating to HIV, AIDS/HIV resources for patients and AIDS/HIV resources for professional healthcare providers.

This course meets the Florida State AIDS/HIV continuing education requirement for biennial license renewal and for initial licensure.

OBJECTIVES:

At the conclusion of this course, the learner will be able to:

1. Summarize the modes of transmission, risk factors, pathophysiology, signs and symptoms and preventive measures, including infection control practices, associated with AIDS/HIV;
2. Discuss the treatment of AIDS/HIV, opportunistic infections and their signs and symptoms;
3. Relate some legal considerations, patient resources and professional resources related to AIDS/HIV;
4. Detail occupational and nonoccupational post exposure prophylaxis guidelines.

WHAT ARE HIV and AIDS?

HIV, human immunodeficiency virus, is a human retrovirus. At the current time, there is the classic HIV-1 and HIV-2. HIV-2 has been

identified in several people in our country but, for the most part, this variant is primarily found among West Africans. HIV-1 and HIV-2 are quite similar, except each have differing glycoproteins. (Centers for Disease Control and Prevention, 1998)

AIDS, acquired immunodeficiency syndrome, is defined as a group of symptoms, caused by an infection and/or a cancer, coupled with an adversely affected immune system. (Centers for Disease Control and Prevention, 1998)

MODES OF TRANSMISSION

The modes of transmission for HIV are the same as those for hepatitis B: sexual transmission; parenteral transmission; and transmission to newborns by an HIV positive mother. The sexual practice at greatest risk for HIV transmission is receiving anal sex from an infected partner. The risk is less for vaginal sex because traumatic bleeding and tearing is less frequent. Research indicates that about 1 in 300 exposures to HIV contaminated needles leads to HIV infection.

It is estimated that about 13% to 40% of infants born to mothers infected with HIV become infected with the virus. The risk of this transmission can be decreased by almost two-thirds by administering an antiretroviral medication by the second trimester of pregnancy, during labor, and during delivery. (Tierney, McPhee & Papadakis, 2003)

THE PATHOPHYSIOLOGY OF HIV

HIV leads to three known pathophysiological mechanisms:

- *Immunodeficiency.* HIV affects immune cells. A number of infections and neoplasms occur as a result of this immunodeficiency.
- *Autoimmunity.* Autoimmunity can result from B lymphocyte dysfunction or the dysfunctional immune function of the body infected with HIV. Lymphocytic interstitial pneumonitis and immunologic thrombocytopenia are examples of the autoimmunity disorders found in HIV patients.
- *Neurological Dysfunction.* (Tierney, McPhee & Papadakis, 2003)

THE RISK FACTORS ASSOCIATED WITH HIV

The risk factors associated with HIV have remained relatively unchanged since this infection was first recognized. The risk factors include:

- *Sexual contact.* Sexual contact with an infected person spreads the virus. HIV is spread with blood and other bodily fluids, including those associated with sexual contact. HIV is spread through semen, vaginal secretions, and blood contact during sexual contact. Homosexual and bisexual males, as well as heterosexual males and females, who have sexual contact with HIV positive individuals, are at risk for HIV.
- *IV drug use.* Sharing needles contaminated with HIV spreads the disease.
- *Childbirth to an HIV infected mother.* HIV is transmitted to the children of HIV infected mothers. (Centers for Disease Control and Prevention, Nettina, 2001; Tierney, McPhee & Papadakis, 2003)

HIV STATISTICS

It is estimated that about 850,000 to 950,000 people in the United States have HIV. As many as 280,000 affected people do not even know that they have it. (Fleming, Byers & Sweeney, 2002)

The number of estimated AIDS cases among adult males is 749,887 and among adult females, 170,679. There are an estimated 9,419 AIDS cases among those less than 13 years of age. (Centers for Disease Control and Prevention, 2004)

During 2003, 17,934 adults and adolescents died as a result of AIDS. The number of deaths among AIDS affected children was 83 during the same year. The cumulative number of deaths related to AIDS through the year 2003 has reached 524,060, with 5,492 pediatric deaths and 518,568 adult and adolescent deaths. (Centers for Disease Control and Prevention, 2004)

Those between the ages of 35 and 44 years of age have the highest cumulative estimated cases of AIDS. Through the end of 2003 this age group had 365,432 cases. (Centers for Disease Control and Prevention, 2004)

According to the Centers for Disease Control and Prevention (2004), the population with the highest estimated number of AIDS cases is the

white race. Other race or ethnicity statistics for the year 2003 and on a cumulative basis are shown below.

Race or Ethnicity	Cumulative Estimated # of AIDS Cases	2003 Estimated # of AIDS Cases
American Indian/Alaska Native	3,026	196
Asian/Pacific Islander	7,166	497
Hispanic	172,993	8,757
Black (not Hispanic)	368,169	21,304
White (not Hispanic)	376,834	12,222
(Centers for Disease Control and Prevention, 2004)		

AIDS/HIV PREVENTION

The focus of AIDS/HIV prevention remains on safe sexual and IV use practices, the continued screening of blood and blood products, and infection control measures within healthcare facilities where blood and other body fluids are, or could be, present. To date there is no effective vaccine against HIV so other preventive measures are of utmost importance.

Screening, education, and counseling are critical components of primary prevention. All patients, whether in the community or within our healthcare facilities, should be assessed for sexual history and possible IV drug use. Women who are pregnant should also be assessed and given HIV counseling to prevent perinatal transmission.

Education should consist of safe sex practices. For those who are HIV positive, the education should detail the proper use, application and removal of condoms, the use of only latex condoms, and the role of a water-soluble lubricant and nonoxynol-9 in safe sexual practices. It is not realistic to teach abstinence as the only way to prevent the spread of this disease. Sex is a normal part of life. A more feasible approach is conveying safe sex, monogamy, and prudence.

IV drug users should be warned against sharing needles and other drug paraphernalia. (Tierney, McPhee & Papadakis, 2003)

The Centers for Disease Control recommends:

- individual interventions including health education, risk reduction counseling, and referrals to appropriate community resources

- such as a substance abuse treatment center to support the individual's preventive practices;
- peer support and educational groups that aim to reinforce the individual's preventive behaviors and to promote interpersonal negotiating skills, skills that aid and facilitate sustained behavioral change;
 - intense community efforts that aim to change affective attitudes and norms of high risk for HIV subgroups;
 - public information and educational campaigns to debunk myths and misinformation about AIDS/HIV and to reverse discrimination against HIV positive people in the community. (Centers for Disease Control and Prevention, 1995)

Our nation has successfully reduced the risk of HIV transmission from the infusion of blood or a blood product to 1:100,000. Continued vigilance in this area is necessary to prevent any sentinel events in blood screening and testing. (Tierney, McPhee & Papadakis, 2003)

INFECTION CONTROL MEASURES

Standard precautions in healthcare have greatly reduced the risk of occupational exposures to HIV and other blood borne pathogens. Other infection control measures that decrease the risk of spreading HIV in our healthcare facilities include:

- frequent handwashing;
- engineering controls, such as "needleless" systems to replace needles;
- work practice controls;
- the use of personal protective equipment, such as gowns, goggles, gloves and masks; and
- the proper handling of sharps and regulated, biohazardous waste.

The greatest occupational risks appear to remain in areas where invasive procedures are done. Sharps, including needles, appear to be the culprits in these high-risk areas. Take our course entitled *OR: Safety in the Operating Room and Other Areas Where Invasive Procedures Are Done* for further information about safety in these areas.

THE SIGNS AND SYMPTOMS OF HIV

Many people are asymptomatic for years even without antiretroviral treatment. The average amount of time between infection with HIV and the development of AIDS, the emergence of an opportunistic infection, is an average of 10 years. (Tierney, McPhee & Papadakis, 2003)

Some of the signs and symptoms of AIDS/HIV include the following disorders by system:

- *Pulmonary.* Pneumocystis pneumonia, noninfectious pulmonary diseases like interstitial pneumonitis, infectious pulmonary diseases like pneumonia and pseudomonas aeruginosa and sinusitis.
- *Central nervous system.* AIDS dementia complex, central nervous system lymphoma, toxoplasmosis, cryptococcal meningitis, and HIV myelopathy.
- *Peripheral nervous system.* Sensory neuropathies, mononeuropathies and inflammatory polyneuropathies.
- *Rheumatological.* Systemic lupus erythematosus and psoriatic arthritis.
- *Retinitis*
- *Myopathy*
- *Oral lesions.* Oral candidiasis, hairy leukoplakia, gingivitis and periodontitis.
- *Liver.* Cytomegalovirus, hepatitis B and C.
- *Billiary.* Cholecystitis.
- *Gastrointestinal.* Enterocolitis, candidal esophagitis, gastropathy, and malabsorption.
- *Endocrine.* Adrenal and thyroid dysfunction.
- *Integumentary.* Herpes simplex, herpes zoster, bacillary angiomatosis and molluscum contagiosum.
- *Gynecological.* Vaginal candidiasis, pelvic inflammatory disease and cervical neoplasia and dysplasia. (Tierney, McPhee & Papadakis, 2003)

There are also some malignancies and systemic signs and symptoms of HIV/AIDS.

- *Malignancies.* Invasive cervical cancer, Kaposi's sarcoma, primary lymphoma of the brain and non-Hodgkin's lymphoma.
- *Systemic manifestations.* Fever, weight loss, night sweats, anorexia, nausea, and vomiting. (Tierney, McPhee & Papadakis, 2003)

THE TREATMENT OF AIDS/HIV

The treatment of HIV consists of four categories, as follows:

1. prophylaxis of opportunistic infections;
2. treatment of opportunistic infections and malignancies;
3. antiretroviral therapy; and
4. hematopoietic stimulating factors

Prophylaxis of Opportunistic Infections

Several opportunistic infections respond to prophylaxis. The table below lists these opportunistic infections and the recommended prophylaxis.

<i>Opportunistic Infection</i>	<i>Prophylactic Medications</i>
Pneumocystis carinii pneumonia	Dapsone Aerosolized pentamidine Trimethoprim-sulfamethoxazole
M avium complex	Clarithromycin Azithromycin Rifabutin
Toxoplasmosis	Trimethoprim-sulfamethoxazole Dapsone Pyrimethamine
M tuberculosis	Isoniazid
Cytomegalovirus	Oral ganciclovir
Cryptococcosis Candidiasis	Fluconazole

Compiled by Author. Source: Tierney, McPhee & Papadakis, 2003

The Signs and Symptoms of Opportunistic Infections

Pneumocystis carinii pneumonia

Pneumocystis carinii pneumonia is a pneumonia caused by a fungus. In the past it was believed that it was caused by a protozoan. About 80% of those affected by AIDS become infected with Pneumocystis carinii if prophylactic therapy is not given. (Beers and Berkow, 2005).

The signs and symptoms of Pneumocystis carinii pneumonia include:

- a dry, unproductive cough;
- dyspnea; and
- fever.

These symptoms can emerge subacutely over a period of time or acutely over only a few days. Up to 1/3 of the patients with *Pneumocystis carinii* pneumonia have a normal x-ray. Others show bilateral, diffuse perihilar infiltration. A sputum specimen reveals the infectious organism when stained with Weigert-Gram, Giemsa, methenamine silver, Wright-Giemsa, modified Grocott, or monoclonal antibody stain. (Beers and Berkow, 2005).

M avium complex

M avium complex is a mycobacterial pulmonary infection caused by a nontuberculosis mycobacteria, *Mycobacterium intracellulare* and *Mycobacterium avium*. This complex consists of two forms, a disseminated infection and a pulmonary infection which is found primarily among those with a normal, functioning immune system. (Cook, 1992)

Some of the signs and symptoms of the pulmonary form of M avium complex include:

- fever;
- night sweats;
- coughing;
- purulent sputum;
- weight loss; and
- hemoptysis.

The signs and symptoms of the disseminated form of M avium complex are:

- cervical lymphadenitis;
- weight loss;
- persistent night sweats;
- anemia;
- bone pain;
- nodular skin lesions;
- hepatomegaly; and splenomegaly (Cook, 1992)

The chest x-ray reveals either cavitation, sometimes more than one pulmonary cavity, or a pulmonary nodule without cavitation. (Cook, 1992)

Toxoplasmosis

Toxoplasmosis results from an infection with *Toxoplasma gondii* which is a protozoan parasite that infects birds and mammals, including cats. It reproduces in the gastrointestinal tract of the infected mammal or bird and the portal of exit is the feces. It can remain infectious for up to one year in moist soil. Toxoplasmosis infection occurs when an individual inadvertently eats cat feces or eats undercooked lamb, beef or pork that contains the protozoan. It can also be passed to the unborn fetus by an infected mother. This infection can be asymptomatic and benign or it can lead to severe central nervous system disease and mental retardation. (Beers and Berkow, 2005).

Some of the signs and symptoms of toxoplasmosis are:

- fever;
- lymphadenopathy (axillary and/or cervical);
- hepatosplenomegaly;
- pharyngitis;
- myalgia;
- mild anemia; and
- leukopenia.

In its severe form, high fevers, chills, a diffuse rash, pneumonitis, myocarditis, meningoencephalitis, pneumonitis, orchitis and/or polymyositis are seen. Patients with AIDS can present with life threatening meningoencephalitis, myocarditis, cardiovascular conduction defects, encephalitis, motor and/or sensory loss, seizures, central nervous system involvement, and/or coma. (Beers and Berkow, 2005).

The signs and symptoms associated with toxoplasmic pneumonitis include:

- interstitial infiltrates which can progress to consolidation;
- respiratory compromise and failure; and
- endarteritis.

M tuberculosis

M tuberculosis is spread with the airborne route by a droplet nuclei of an infected person. It is not spread with fomites to humans, however, this infectious organism can remain in the air for several hours.

The signs and symptoms of pulmonary tuberculosis include:

- a cough;
- a minimal amount of mucus which can progress to more productive green or yellow mucus;
- dyspnea;
- pneumothorax;
- pleural effusion;
- hemoptysis; and
- hilar lymphadenopathy, especially among children. (Beers and Berkow, 2005).

Cytomegalovirus

Cytomegalovirus is a bloodborne pathogen that is transmitted through blood and body fluids. This infection can be acquired in the same manner as other bloodborne pathogens including transplacentally during the birth of a neonate. The signs and symptoms of a congenital cytomegaloviral infection may consist of nothing more than cytomegaloviruria at one end of the continuum to spontaneous abortion, postnatal death or stillbirth as a result of severe central nervous system or liver damage, hemorrhage and anemia. (Beers and Berkow, 2005).

Among immunocompromised AIDS patients, the signs and symptoms of cytomegalovirus are life threatening and consist of the following:

- gastrointestinal, pulmonary and central nervous system involvement;
- retinitis; and
- ulcerative damage to the esophagus and/or the colon (Beers and Berkow, 2005).

Cryptococcosis Candidiasis

Cryptococcosis candidiasis is a fungus infection that people contract when they inhale contaminated soil. This fungal infection can lead to a minor, self-limited pulmonary infection or it can disseminate to the skin, bones, organs and meninges. (Beers and Berkow, 2005).

Most infections are self-limited, however, cryptococcal opportunistic infections among those affected with AIDS may be severe and lead to:

- subcutaneous nodules in the liver, spleen, kidneys, prostate, long bones, joints and other bodily tissue; and
- cutaneous lesions (papular, nodular, pustular, and ulcerated lesions). (Beers and Berkow, 2005).

Treatment of Opportunistic Infections and Malignancies

A large number of opportunistic infections and malignancies, such as Kaposi's sarcoma, are effectively treated with medication. Many opportunistic infections require lengthy therapy and some, including cryptococcosis, toxoplasmosis and cytomegalovirus retinitis, require lifelong therapy. A small number patients, after having gained significant benefit from highly active antiretroviral therapy (HAART), may be able to discontinue their medication regimen for an opportunistic infection without ill effect. Corticosteroids, something not initially thought to benefit an immunocompromised patient, has benefit when given within 72 hours of the onset of moderate or severe pneumocystosis.

P. carinii infections can be treated with trimethoprim-sulfamethoxazole, pentamidine, trimethoprim, atovaquone, primaquine, or trimetrexate. Clarithromycin is used for the treatment of *M. avium* complex; and toxoplasmosis is treated with pyrimethamine combined with sulfadiazine and folinic acid, followed by a regimen of pyrimethamine in combination with clindamycin and folinic acid.

Some forms of Kaposi's sarcoma respond to chemotherapy, alpha interferon and radiation. Herpes simplex and herpes zoster are treated with acyclovir and foscarnet. Herpes zoster also responds to famciclovir. Amphotericin B alone or in combination with flucytosine followed by fluconazole is effective for the treatment of cryptococcal meningitis. (Tierney, McPhee & Papadakis, 2003)

Antiretroviral Therapy

Antiretroviral therapy has greatly improved the prognosis for many people affected with AIDS/HIV. The goal of this treatment is to

stabilize or even improve immune response and to decrease the complications associated with immunosuppression.

A combination of three antiretroviral medications is recommended. Once the treatment course is chosen, total suppression using the recommended dosages should begin and continue without interruption. Resistance to these drugs develops quite quickly, therefore, rendering them impotent for future use. If the patient develops toxicity to one of the medications in the combination, that dosage should not be decreased. Instead, the entire regimen should be replaced with another one with full, optimal dosages for each of the three medications.

Antiretroviral therapy is not easy for patients. It is costly and it takes a lifelong commitment to compliance. Education is very important before the person begins this therapy. They should be told about the expense and the need to continue the treatment regimen without fail. (Tierney, McPhee & Papadakis, 2003)

Antiretroviral medications include:

1. Nucleosides and nucleotide analogs

- zidovudine
- didanosine
- zalcitabine
- stavudine
- lamivudine
- abacavir
- adefovir

2. Protease inhibitors

- indinavir
- netfinavir
- ritonavir
- saquinavir
- amprenavir

3. Nonnucleoside reverse transcriptase inhibitors

- nevirapine
- delavirdine
- efavirenz

Hematopoietic Stimulating Factors

Hematopoietic stimulating factors, like erythropoietin, are used to treat anemia among HIV patients. It is also useful for the treatment of anemia resulting from zidovudine use. (Tierney, McPhee & Papadakis, 2003)

LEGAL ASPECTS OF HIV/AIDS

In the past, law did not protect people with HIV. Many suffered from cruel discrimination and unnecessary harm. Laws to protect this population became necessary. The State of Florida now has laws, as do many other states, to protect the rights of individuals in to AIDS/HIV. Some of these laws are below:

- *Confidentiality.* The results of HIV tests are confidential. These results can be shared only with those with a need to know or when the affected individual agrees in writing to share the results with others. Healthcare providers in hospitals, as well as others in the community such as a school nurse, have the need to know.
- *HIV Testing.* Informed consent to HIV testing is necessary, except when it is necessary during an emergency situation and the person is unable to consent, or it is court mandated.
- *Reporting.* Test results must be shared with the individual regardless of the outcome of the test. Florida also requires that confirmed and suspected HIV cases be reported to the Department of Health.
- *Nondiscrimination.* HIV positive people cannot be discriminated against in terms of health insurance, access to healthcare, nor in the workplace or within our schools.

POST EXPOSURE PROPHYLAXIS: OCCUPATIONAL AND NONOCCUPATIONAL

Occupational Exposures

For the last several years, the U.S. Public Health Service has published recommendations for the management of occupational exposures of healthcare workers to blood and other bodily fluids that potentially contain human immunodeficiency virus (HIV), hepatitis B virus (HBV) and/or hepatitis C virus (HCV). These recommendations were again updated in June of 2001.

Occupational exposures to bloodborne pathogens are a matter of grave concern that requires prompt action. Postexposure prophylaxis for HBV consists of hepatitis B immune globulin (HBIG) and/or the hepatitis B vaccine. Antiviral medications, such as interferon and immune globulin, are not recommended for hepatitis C postexposure prophylaxis.

A four-week regimen of two antiretroviral medications is recommended for most HIV post exposure prophylaxis. These 2 medications can be:

- zidovudine (ZDV) and lamivudine (3TC); or
- lamivudine (3TC) and stavudine (d4T); or
- didanosine (ddI) and stavudine (d4T).

The addition of a third antiretroviral medication is recommended for occupational exposures of high risk. When the source patient is known and the source virus is resistant to one or more available medications, ones that are least likely to be resisted are used.

Many occupational exposures occur when someone is stuck with a needle or sharp carelessly left in an area or discarded in a container other than an impervious sharps container. Therefore, the source patient is often difficult, if impossible, to identify.

The National Clinicians' Post-Exposure Prophylaxis Hotline (PEP Line) can be reached at 1-888-448-4911. This hotline is particularly useful when the prophylactic treatment of occupational exposure requires a consultation, as is the case when a pregnant woman has been exposed, and/or PEP has been delayed for one reason or another. (Centers for Disease Control and Prevention, 2001)

Nonoccupational Exposures

The U.S. Department of Health and Human Services also recommends antiretroviral postexposure prophylaxis after nonoccupational exposures to HIV. Most of these nonoccupational exposures occur as the result of sex or IV drug use.

Despite the fact that preventing exposures to HIV is the most effective way to prevent it, exposures do occur. Some of these exposures are consensual and others are not. For example, rape is not consensual and it is not anticipated; nonetheless, it may expose the victim to hepatitis, HIV, and other sexually transmitted diseases.

The recommended PEP for nonoccupational exposures to blood, genital secretions and/or other possibly infectious bodily fluids is as follows:

- 28 day course of treatment with highly active antiretroviral therapy (HAART) when the exposure has high risk of transmission, as is the case if the exposure was to the bodily fluids of a person known to have HIV.

At the current time, no PEP is recommended if there has been a nonoccupational exposure to genital secretions, blood or other possibly infected bodily fluids when the person is NOT known to have HIV and the nature of the exposure does not indicate high risk. However, individual patient care decisions, including those relating to PEP, should be made on an individual basis. (U.S. Department of Health and Human Services, 2005)

AIDS/HIV RESOURCES FOR PROFESSIONALS

AIDS Education Global Information System (AEGIS)

AEGIS began in the mid-1980s and has continued to be the definitive web-based reference for HIV/AIDS-related information. The collaborative effort of many organizations and individuals has enabled the creation of this vast database of facts regarding the history, prevention and treatment of HIV/AIDS.

Website: <http://www.aegis.com/>

AIDSinfo

AIDSinfo is a U.S. Department of Health and Human Services (DHHS) project providing information on HIV/AIDS clinical trials and treatment. This site has the latest federally approved information on HIV/AIDS clinical research, treatment and prevention, and medical practice guidelines for consumers, HIV/AIDS patients, their families and friends, health care providers and researchers.

Website: <http://aidsinfo.nih.gov/>

*Centers for Disease Control & Prevention
National Center for HIV, STD, and TB Prevention
Divisions of HIV/AIDS Prevention*

The CDC provides national leadership in helping control the HIV epidemic by working with community, state, national, and international partners in surveillance, research, prevention and evaluation activities.

Website: <http://www.cdc.gov/hiv/dhap.htm>

FDA HIV/AIDS Program

US. Food and Drug Administration: HIV, HIV infection, aids, milestones,/aids treatment, testing information, clinical, trials, drug development, barrier products, evaluating medical treatments.

Website: <http://www.fda.gov/oashi/aids/hiv.html>

John Hopkins AIDS Service

The latest information and research relating to AIDS/HIV.

Website: <http://www.hopkins-aids.edu/>

Joint United Nations Programme

The Joint United Nations Programme on HIV/AIDS, **UNAIDS**, is the main advocate for global action on the epidemic. It leads, strengthens and supports an expanded response aimed at preventing transmission of HIV, providing care and support, reducing the vulnerability of individuals and communities to HIV/AIDS, and alleviating the impact of the epidemic

Website: <http://www.unaids.org>

Journal of the International AIDS Society

Website: <http://www.aidsonline.com>

MedlinePlus: AIDS

Frequently Asked Questions about HIV and AIDS (National Center for HIV, STD, ... HIV/AIDS (Mayo Foundation for Medical Education and Research)

Website: <http://www.nlm.nih.gov/medlineplus/aids.html>

The Pocket Guide to Adult HIV/AIDS Treatment: January 2005

A quick reference by John G. Bartlett, M.D. for antiretroviral drugs, antiretroviral therapy, opportunistic infections, and related issues.

Website: <http://hopkins-aids.edu/publications/pocketguide/pocketgd0105.pdf>

AIDS/HIV RESOURCES FOR PATIENTS AND THE PUBLIC

AIDSinfo

AIDSinfo is a U.S. Department of Health and Human Services (DHHS) project providing information on HIV/AIDS clinical trials and treatment. This site has the latest federally approved information on HIV/AIDS clinical research, treatment and prevention, and medical practice guidelines for consumers, HIV/AIDS patients, their families and friends, health care providers and researchers.

Website: <http://aidsinfo.nih.gov/>

AIDS.ORG

The mission of AIDS.ORG is to help prevent HIV infections and to improve the lives of those affected by HIV and AIDS by providing education and facilitating the free and open exchange of knowledge at an easy-to-find centralized website.

Website: <http://www.AIDS.Org>

The Body: The Complete HIV/AIDS Resource

The Body's mission is to:

- Use the Web to lower barriers between patients and clinicians.
- Demystify HIV/AIDS and its treatment.
- Improve patients' quality of life.
- Foster community through human connection.

Website: <http://www.thebody.com/index.shtml>

National Association of People With AIDS

The National Association of People with AIDS advocates on behalf of all people living with HIV and AIDS in order to end the pandemic and the human suffering caused by HIV/AIDS. It is the oldest national AIDS organization in the United States and the oldest national network of people living with HIV/AIDS in the world.

Website: <http://www.napwa.org>

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