

Project: Ghana Emergency Medicine Collaborative

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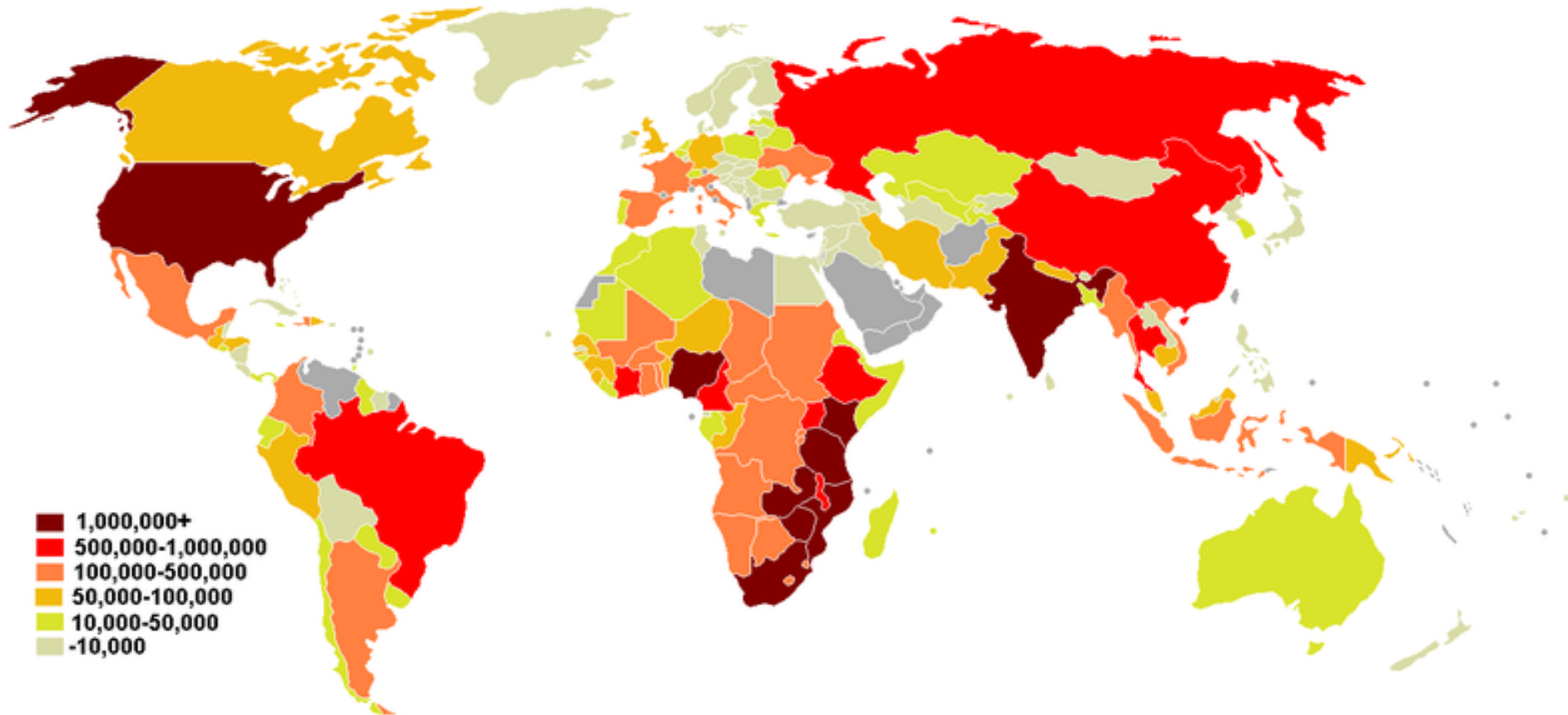
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HIV/AIDS

- HIV or human acquired deficiency virus damages a person's body by destroying specific blood cells, called CD4+ T cells, which are crucial to helping the body fight diseases
- AIDS or acquired immune deficiency syndrome is the final stage of HIV infection, where CD4 cells drop to a very low level & a person's ability to fight infection is lost


HIV/AIDS Prevalence

Estimated 38 million people are living with HIV/AIDS
(UNAIDS, 2006)




Transmission of HIV


MODES OF TRANSMISSION
HIV is transmitted in three ways:




Sexual intercourse — from any HIV infected person to his or her partner (man to woman, woman to man, man to man). Women are more at risk than men.



Blood-sharing HIV contaminated needles or other skin piercing instruments.




Blood — through HIV infected blood transfusion or blood products.



HIV infected mother to infant, before, during and after child birth.

HIV SPREADS THROUGH SPECIFIC IDENTIFIABLE HUMAN ACTIONS, ALL SUBJECT TO HUMAN INFLUENCE AND CONTROL.

AIDS 

Wellcome Images

Transmission Of HIV

- Most commonly, HIV infection is spread by having sex with an infected partner
- HIV frequently spreads among injection-drug users who share needles
- Women can transmit HIV to their babies during pregnancy, birth & breastfeeding
- Accidental needle sticks
- Blood products

Development of HIV Infection

- Symptoms usually disappear on their own within a few weeks & then the person has no symptoms & feels normal
 - this asymptomatic phase can last for years
- During the asymptomatic phase the virus continues to multiply and destroy the infection fighting CD4 cells
- **1 in 5** people don't know they are infected with HIV and therefore continue to spread the disease (<http://www.cdc.gov/vitalsigns/HIVTesting/>)

Symptoms of HIV

- Some develop flu like symptoms days-weeks after exposure
- HIV progresses in stages
- Early HIV symptoms
 - Fever
 - Headache
 - Fatigue
 - Enlarged lymph nodes
 - Abdominal cramping
 - Skin rash
 - Weight loss
 - <http://www.webmd.com/hiv-aids/tc/human-immunodeficiency-virus-hiv-infection-symptoms>

Chronic Stage

- Diarrhea
- Loss of appetite, weight loss
- Nail changes
- Night sweats
- Confusion, difficulty concentrating, or personality changes
- Repeated outbreaks of cold sores or genital herpes
- Mouth sores
 - <http://www.webmd.com/hiv-aids/tc/human-immunodeficiency-virus-hiv-infection-symptoms>

HIV → AIDS

- In the final stages of HIV the immune system and CD4 levels drop so low (< 200 cells/mm³) the immune system loses its ability to fight infection
- Opportunistic infections occur when one develops aids
- You cannot die from HIV or AIDS but you can die from AIDS related illnesses such as cancer

Most Common AIDS related Infections

- **Cancer** of the soft tissues called Kaposi's sarcoma, which causes brown, reddish, or purple spots that develop on the skin or mouth
- **Candidiasis (Thrush)** - fungal infection
- **Cytomegalovirus (CMV)** – viral infection that occurs when CD4 range becomes lower than 50
- **Herpes Simplex Virus**
- **Malaria**
- **Pneumonia**
- **Tuberculosis** – bacterial infection that attacks the lungs
- **Toxoplasmosis** – protozoal infections of the brain, T-cell range under 100

Diagnosis

- HIV antibody tests
 - Enzyme-linked immunosorbent assay (ELISA)
 - Western blot assay is used to confirm the positive ELISA test
- It can take 2 weeks to 6 months from the time one becomes infected with HIV for the antibodies to be detected in your blood

As a Nurse, what lab work
would you expect?

- **CBC** – to detect the number & type of cells in your body
- **Complete metabolic panel (CMP)** – gives info on the status of your kidneys, liver, electrolyte and acid/base balance, and blood proteins
- **Blood cultures**
- **Syphilis testing**
- **Hep A, B, C**
 - Tuberculosis testing
 - **CD4 cell count** (500 to 1500 cells/cubic millimeter of blood)
 - **Viral load** - measures the amount of HIV in the blood

- **Neurological studies:** electroencephalogram (EEG), magnetic resonance imaging (MRI), computed tomography (CT) scans of the brain; electromyography (EMG)/nerve conduction studies:
 - For changes in mentation, fever of undetermined origin, changes in sensory/motor function to determine effects of HIV infection
- **Chest x-ray:** May initially be normal or may reveal progressive interstitial infiltrates secondary to advancing *Pneumocystis pneumonia* (most common opportunistic disease) disease processes such as TB

Treatment of HIV/AIDS

- Highly Active Anti-Retroviral Treatment (HAART) is most successful because it prevents the virus from replicating so that fewer T cells are destroyed
- Testing for resistance is important to begin treatment
 - Two blood tests are available
 - 1) Genotyping assays detect mutations in the viral genes
 - 2) Phenotyping assays measure the ability of the virus to grow in cells with antiretroviral medicines

<http://www.webmd.com/hiv-aids/tc/human-immunodeficiency-virus-hiv-infection-exams-and-tests?page=2>

Treatment Continued

- HAART medicines that are most often used to treat HIV infection include:
 - **NRTIs (nucleoside and nucleotide reverse transcriptase inhibitors)** Block a crucial enzyme required for viral replication (tenofovir, abavavir)
 - **Entry and Fusion Inhibitors** Block HIV from ever entering or attaching to T cells (enfuvirtide, maraviroc)
 - **Fusion Inhibitors** Block HIV from inserting its genetic information into T cells (raltegravir)
 - **Protease Inhibitors** Prevent new viruses from functioning properly, slower progression (atazanavir, ritonavir)

Two Key Goals of HIV Treatment

- **LOW** Viral Load
- **HIGH** CD4 Cell Count

Nursing Roles in Acute Care of HIV/AIDS

- **Assess & manage symptoms** – non pharmacological/nursing interventions and medications
- **Provide patient education for all medications**-prophylaxis, antibiotics, narcotics, etc.
 - reason for taking drug/drug action – dose – schedule – food restrictions
 - possible side effects: those to report to the health facility and interventions for those that can be managed at home
 - adherence counseling
 - **Teach health promotion** - promoting healthy practices that prolong the asymptomatic stage, reduce HIV/STD risk and avoid behaviors that can transmit HIV

Stigma in Nursing Care

- The stigma associated with AIDS has silenced open discussion, both of its causes and of appropriate responses
- Stigmatization associated with AIDS includes lack of understanding of the illness, misconceptions about how HIV is transmitted, lack of access to treatment, irresponsible media reporting on the epidemic, the incurability of AIDS, and prejudice and fears relating to a number of socially sensitive issues including sexuality, disease and death, and drug use

Stigma in Nursing Care

- Global consensus on the importance of tackling AIDS-related stigma and discrimination is highlighted by the Declaration of Commitment adopted by the United Nations General Assembly Special Session on HIV/AIDS in June 2011
- The Declaration states that confronting stigma and discrimination is a prerequisite for effective prevention and care, and reaffirms that discrimination on the grounds of one's HIV status is a violation of human rights

HIV/AIDS in Children

- At the end of 2010, there were 3.4 million children living with HIV around the world (WHO/UNAIDS/UNICEF 2011)
- Of the 1.8 million people who died of AIDS during 2010, one in seven were children (UNAIDS (2011, November) 'Worlds AIDS Day Report 2011'
 - Most children living with HIV/AIDS– almost 9 in 10 live in sub-Saharan Africa (WHO/UNAIDS/UNICEF 2011)

Diagnosis in Children

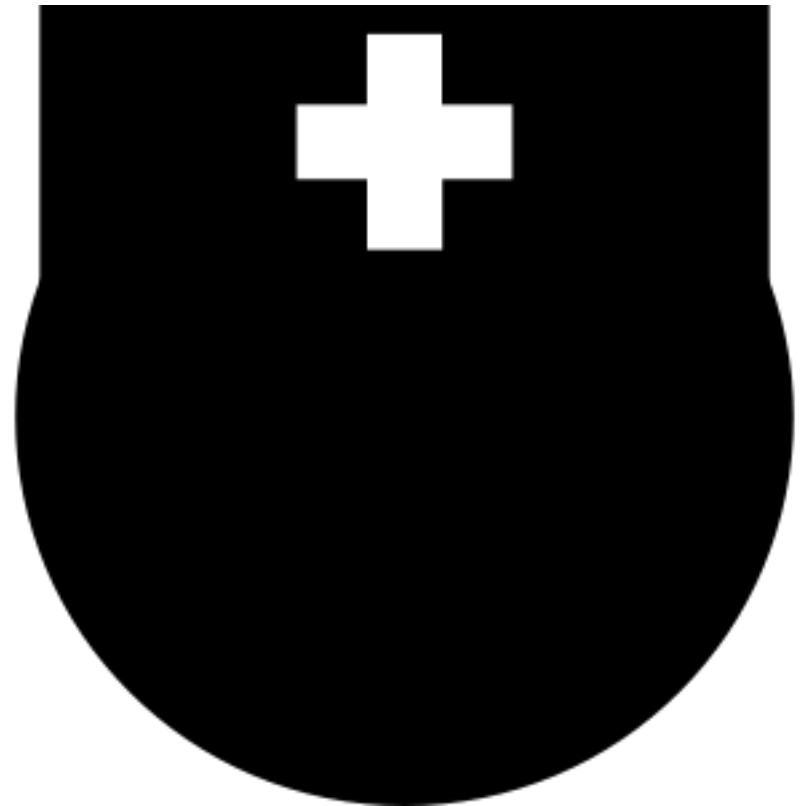
- Important HIV infected children are diagnosed as quickly as possible for treatment
- Testing children for HIV can be complicated, especially for those recently born to HIV-positive mothers
- Antibody tests, which are used to diagnose HIV in adults, are ineffective in children below the age of 18 months
- Requires expensive laboratory equipment trained staff - generally unobtainable in the resource-poor areas

Treatment of HIV in Children

- HIV treatment for children slows the progress of HIV infection
- Children ideally need to be given drugs in the form of syrups or powders, due to difficulties in swallowing
 - Major problem for children living with HIV is opportunistic infections such as tuberculosis, mumps and chickenpox

Nursing Role in Documenting care

- Complete and accurate documentation of the nursing care provided during each patient visit contributes to quality care delivery
- Recording assessment findings and interventions over time is required for managing HIV/AIDS as a chronic disease.



Standard Precautions/ Infection Control

- Protect yourself & the patient!
- All patients should be considered infectious and susceptible to infection
- *Standard precautions* apply to pt with HIV/AIDS:
 - Hand washing before and after pt exposure
 - Always wear gloves when handling bodily fluids
 - Safe handling and disposal of sharps
 - Safe disposal of hazardous waste.
 - Proper disinfection and sterilization of reusable equipment

Discharge Instructions

Follow up with your primary healthcare provider or infectious disease specialist as directed:

- Write down your questions so you remember to ask them during your visits
- People with weakened immune systems get infections more easily than others
- Let your primary healthcare provider know right away if you have been exposed to a person with an infectious disease
- Keep all appointments, even if they are only to get test results

Discharge Instructions

Prevent the spread of HIV and AIDS:

- Tell all caregivers, such as your doctor and dentist, that you are HIV-positive.
- Tell your sex or needle-sharing partners that you are HIV-positive.
- Use a latex condom correctly each time you have vaginal, anal, or oral sex. Latex condoms do not stop you from spreading HIV but may decrease the risk. Ask your caregiver for more information about how to use condoms the right way.
- Do not donate (give) sperm, organs, or body tissue
- Do not get your body fluids in the mouth, eyes, anus, or open skin cuts of others.
- Do not donate blood or blood products.
- Do not share needles or other equipment if you use injectable drugs.
- Do not share razors, toothbrushes, tweezers, or other objects. They may cut the skin and cause others to come into contact with blood.
- Do not pierce your ears, navel, or any other place on your body. Piercing can cause bleeding, which may spread HIV.

Discharge Instructions

Practice good health habits:

- Brush your teeth twice a day with a soft-bristled brush. Floss your teeth once a day. See your dentist every 6 months for a checkup.
- Wash your hands often. Use soap and rub them for at least 20 seconds. Rinse them with warm water. Dry your hands well with a clean towel, paper towel, or warm air blower.
- Bathe or shower every day.
- Stay away from people who have colds or the flu. Stay away from large groups of people. This will decrease your chance of getting sick. The medicines and treatments that you receive to treat HIV and AIDS may decrease your ability to fight off illness.
- Stop smoking, drinking, and using street drugs of any kind

Discharge Instructions

Monitor what you eat and drink:

- Do not drink untreated water or swallow water while you are swimming.
- Eat enough food to keep your weight from decreasing. Germs may be on certain foods. These foods may cause a stomach or bowel infection. Avoid raw or undercooked eggs, poultry, meat, seafood, and cold cuts. Do not eat soft cheeses or unpasteurized dairy products or juices.
- Prepare foods safely. Do not let cooked food touch uncooked food or cutting boards or dishes used for uncooked food. Wash all fruits and vegetables well before eating them.
- Keep your refrigerator and shower clean to decrease the risk of mold.

Contact your caregiver if:

- You have a fever, chills or night sweats
- You have sore or large lymph nodes in your neck, jaw, armpit, or groin
- You feel tired, and it does not go away
- You have diarrhea that does not get better
- You have lost more than 10 pounds in a short period of time
- Your skin is bleeding or bruising
- You have white spots or sores in your mouth, throat, vagina, or rectum
- You have a cough, shortness of breath, or chest tightness
- You notice changes in your menstrual cycle or flow
- Your skin is itchy, swollen, or has a rash. Your medicine may be causing these symptoms. This may mean you are allergic to your medicine
- You have other body changes that worry you
- You have questions or concerns about your illness, medicine, or treatment.

Seek care immediately or call 911 if:

- You cannot think clearly
- You have a severe headache
- You have a stiff neck
- You have problems seeing
- You have problems with balance, walking, or speech
- You have weakness in an arm or leg
- You are too short of breath to move
- You have chest pain
- You are so weak that you cannot stand up
- You are unable to drink liquids
- You are so depressed you feel you cannot cope any longer

Questions #1

A nurse has been instructed to place an IV line in a patient that has active TB and HIV. The nurse should wear which of the following safety equipment?

- A. Sterile gloves, mask, and goggles
- B. Surgical cap, gloves, mask, and proper shoe wear
- C. Double gloves, gown, and mask
- D. Goggles, mask, gloves, and gown

Rationale

- D. Goggles, mask, gloves, and gown
All protective measures should be worn,
however it is not necessary to double glove.

Question #2

A patient who is HIV-positive and has a CD4+ count of 15 has just been admitted with a fever and abdominal pain. Which of these physician orders should the nurse implement first?

- A. Obtain a 12-lead ECG
- B. Call for a portable chest x-ray
- C. Obtain blood cultures from two sites
- D. Give cefazolin (Kefzol) 500 mg IV

Rationale

- C) Obtain blood cultures from two sites and then start antibiotic therapy as rapidly as possible in immunocompromised patients, but cultures must be obtained first so that culture results will not be affected by the antibiotic. The chest x-ray and 12-lead ECG can be done after the culture is drawn

Question #3

- A client with newly diagnosed HIV is admitted to the medical unit with a diagnosis of AIDS. The nurse would most expect the client's history to include:
 - A. Sleeping 6 to 8 hours
 - B. Feelings of fatigue in the evening
 - C. Steady weight loss over the past several months
 - D. Feelings of prolonged helplessness and hopelessness

Rationale

- C. Steady weight loss for the last couple of months is a symptom in both HIV to AIDS

The goals of nursing care related to HIV/AIDS is to reducing morbidity and mortality and increase the quality of life of people at risk for HIV and those affected by the disease

