

THE HIV-POSITIVE PATIENT

The individual identified as HIV-seropositive is one who is asymptomatic and does not meet the Centers for Disease Control and Prevention (CDC) definition for AIDS. Studies reveal that persons with HIV-positive status may remain asymptomatic for 10 or more years. During the period of asymptomatic infection, the individual has HIV in the blood and is contagious to others. Patients may live longer without symptoms if receiving highly active antiretroviral therapy (HAART) to reduce the viral load. After approximately a decade, especially in the undertreated individual, the immune system begins to decline and he or she develops symptoms of immune deficiency, a phase termed “symptomatic HIV infection.” The individual might then develop AIDS-defining diseases. With the inception of multiple drug regimens (using combinations of nucleoside reverse transcriptase inhibitors [NRTIs], protease inhibitors [PIs], or nonnucleoside reverse transcriptase inhibitors [NNRTIs]), the CD8+ CTL (cytotoxic T-lymphocyte) and the CD4 count can be maintained at higher levels longer and the viral load minimized. Controlling replication of HIV and lowering the viral load are the current focus of early intervention. Although imminent death is not a realistic concern, the patient needs to make major behavioral and lifestyle changes to prolong life expectancy and may have significant problems that require information and assistance. The person who is well supported medically may lead a productive life for an extended period. At present the rate of new infections is rapidly increasing among people of color, women in general (with the most common mode of transmission being heterosexual activity), and resurgence among young homosexual men who did not experience the losses of their predecessors and have a misconception regarding the efficacy of medications and therefore are engaging in unsafe sexual practices.

CARE SETTING

Community setting, although development of opportunistic infections may require occasional inpatient acute medical care.

RELATED FACTORS

AIDS

Extended care

Fluid and electrolyte imbalances

Pneumonia: microbial

Psychosocial aspects of care

Sepsis/septicemia

Patient Assessment Database

Although patient may be asymptomatic, refer to CP: AIDS for potential signs/symptoms.

Refer to section at end of plan for ongoing considerations.

DIAGNOSTIC STUDIES

Enzyme-linked immunosorbent assay (ELISA): A positive test result may be indicative of exposure to HIV but is not diagnostic. Sensitivity varies, with the incidence of false-positive results being approximately 10%. (Seroconversion can occur between 4 wk to 6 mo after exposure.)

Western blot test (blood/urine): Confirms diagnosis of HIV-1 in individuals with positive ELISA screening.

Viral load tests:

RI-PCR: Detects viral RNA levels as low as 50 copies/mL of plasma.

bDNA 3.0 assay: Has a wider range: 50–500,000 copies/mL. (The RI-PCR range is 50–75,000/mL.) Therapy can be initiated, or changes made in treatment approaches, based on rise of viral load or maintenance of a low viral load. This is currently the leading indicator of effectiveness of therapy.

CD8+ CTL (cytotoxic suppressor cells): Current quantitative assays allow for rapid evaluation of levels. CD8+ (CTL) have been strongly implicated in the control of HIV-1 replications. At late stage of infection, CD8+ (CTL) numbers are reduced.

CD4+ lymphocyte count (previously T4 helper cells): Reduced. Patients with counts below 500 benefit from antiretroviral therapy; counts equal to/or below 200 define progression to AIDS. Levels are measured immediately before and again 4–8 wk after initiation of antiretroviral therapy. Thus, it is used to diagnose HIV infection and progression and to monitor effects of drug therapy. The role of CD4+ T-cells is unclear. CD4+ cells are a target for HIV infection and destruction. Some researchers postulate CD4+ cells are eliminated early. They may not contribute to host defense substantially in the late stages of disease.

Screening tests: Purified protein derivative (PPD): Used to screen for TB exposure. A positive result reflects current or prior exposure to TB. The criterion for positive PPD when immunodeficiency is present is 5-mm induration.

Serologies: *Rapid plasma reagin (RPR)/VDRL:* Determines current/past exposure to syphilis and need for more specific testing. Toxoplasma and hepatitis B and C serologies may be done.

Pap smear: Higher incidence (40%) of abnormal cells occurs in HIV-infected women. The critical role of Pap smear screening relates to its ability to detect precursor lesions that can precede the diagnosis of invasive carcinoma by several years.

Pelvic/genital examination: Identifies presence of lesions from sexually transmitted diseases (STDs), cervical and vaginal abnormalities.

Chemistries: Glucose levels elevated as a result of insulin resistance, and lipids rise as HIV infection progresses. Albumin/prealbumin and transferrin levels are decreased secondary to malabsorption/malnutrition that is usually progressive.

CBC: Hemoglobin, RBC counts are decreased and abnormalities in iron metabolism can result in anemia, which occurs in 17% of asymptomatic patients and up to 85% of patients with advanced disease.

Chest x-ray: Abnormalities suggest presence of TB in PPD-positive, anergic, and/or symptomatic individuals. Diagnosis is then verified by sputum cultures or other tests, such as gallium scan.

NURSING PRIORITIES

1. Promote acceptance of reality of diagnosis/condition.
2. Support incorporation of behavioral/lifestyle changes to enhance well-being.
3. Provide information about disease process/prognosis and treatment needs.
4. Assist in developing plan and strategies to meet long-term medical, behavioral, and financial needs.

GOALS

1. Dealing with current situation realistically.
2. Participating in and appropriately managing therapeutic regimen.
3. Diagnosis, prognosis, and therapeutic regimen understood.
4. Plan in place to meet medical, behavioral change, and financial needs.

NURSING DIAGNOSIS: Adjustment, impaired

May be related to

Life-threatening, stigmatized condition/disease
Assault to self-esteem, altered locus of control
Denial; incomplete/ongoing grieving
Inadequate support systems
Medication side effects (fatigue and depression)

Possibly evidenced by

Verbalization of nonacceptance/denial of diagnosis
Extended period of shock, disbelief, or anger regarding change in health status
Failure to take action to prevent further health problems
Failure to achieve optimal sense of control

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Acceptance: Health Status (NOC)

Verbalize reality and acceptance of condition.
Demonstrate increased trust and participation in development of plan of action.
Initiate lifestyle changes that will permit adaptation to present life situations.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Crisis Intervention (NIC)</p> <p>Independent</p> <p>Evaluate patient’s ability to understand events and realistically appraise situation.</p> <p>Encourage expression of feelings, denial, shock, and fears. Listen without judgment, accepting patient’s expressions. Focus on positive outcomes.</p> <p>Challenge morbid thoughts and reframe into positive statements, e.g., “You know why the virus is going to kill me. I deserve to die for what I’ve done.” Response: “The virus may or may not kill you. It’s not smart enough to decide when you may die. The virus is ‘just there.’ It does not have a mind to know what you have or have not done.”</p> <p>Determine available resources and programs.</p> <p>Assess social system, as well as presence of support, perception of losses, and stressors.</p> <p>Encourage patient to participate in support groups.</p> <p>Educate patient about drug interactions, HIV, and emotions.</p> <p>Encourage continued or renewed use of familiar effective coping strategies.</p> <p>Explore use and practice of new and different coping strategies.</p> <p>Help patient use humor to combat stigmatization of the disease.</p> <p>Reinforce structure in daily life. Include exercise as part of routine.</p>	<p>Provides base to develop plan of action.</p> <p>It is important to convey belief in commonality of patient’s fears/feelings. By focusing on positive outcomes, patient is encouraged to take charge of those areas in which changes can be made, e.g., managing medical regimen and behavior.</p> <p>Interrupts morbid thoughts and challenges patient’s self-deprecating ideas. As with any potentially terminal disease, this population is likely to experience depression and is at increased risk for suicide, necessitating ongoing evaluation.</p> <p>Addictive behaviors, ability of injection drug user to obtain clean “works,” sexual myths, and perceptions of the need for condoms need to be addressed.</p> <p>Partners, friends, and families will have individual responses depending on the individual’s lifestyle, knowledge of HIV transmission, and belief in myths.</p> <p>Long-term support is critical to dealing with and effectively coping with the reality of frequent physician visits for evaluation, medical treatments, and ongoing lifestyle changes.</p> <p>Fatigue and depression can be side effects of some medications and of the infection itself. Knowledge that it is usually of short duration can support informed choices/cooperation and promote hope.</p> <p>Patient is supported and given encouragement for past effective behavior. Positive reinforcement enhances self-esteem.</p> <p>Using new strategies can be uncomfortable and practice fosters self-confidence.</p> <p>Humor defuses the sense of secretiveness people may place on diagnosis of/dealing with HIV.</p> <p>Routines help the person focus. Exercise improves sense of wellness and enhances immune response.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Crisis Intervention (NIC)</p> <p>Independent</p> <p>Discuss meaning of high-risk behavior and barriers to change, e.g. unprotected sexual activity or injection drug use with shared needles.</p> <p>Assist patient to set limits on sexually risky behaviors and explore ways patient can achieve change.</p> <p>Assist patient to channel anger to healthy activities.</p> <p>Inform patient about new medical advances/treatments.</p> <p>Discuss issues of voluntary disclosure; personal responsibility; needs of others; and federal, state, and local reporting requirements.</p> <p>Collaborative</p> <p>Refer to nurse practitioner/clinical nurse specialist, psychologist, social worker knowledgeable about HIV.</p>	<p>Fear of disclosure, need to change usual behaviors, and the difficulty of doing so may prevent the individual from making the changes necessary to prevent transmission. Sexual behavior may be used to express caring and to feel connected and less lonely.</p> <p>Needs for love, comfort, and companionship that have been met through sexual expression must be met safely through means that carry a reduced risk of HIV transmission.</p> <p>The increased energy of anger can be used to accomplish other tasks and enhance feelings of self-esteem.</p> <p>Promotes hope and helps patient make informed decisions.</p> <p>Understanding responsibilities and consequences of disclosure is necessary for patient to make informed decisions.</p> <p>May need additional help adjusting to difficult situation.</p>

<p>NURSING DIAGNOSIS: Fatigue</p> <p>May be related to</p> <p>Decreased metabolic energy production, increased energy requirements (hypermetabolic state)</p> <p>Overwhelming psychological/emotional demands</p> <p>Altered body chemistry: side effects of medications</p> <p>Possibly evidenced by</p> <p>Verbalization of unremitting/overwhelming lack of energy</p> <p>Inability to maintain usual routines, decreased performance, impaired ability to concentrate</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Endurance (NOC)</p> <p>Report improved sense of energy.</p> <p>Participate in desired activities at level of ability.</p> <p>Energy Conservation (NOC)</p> <p>Identify individual areas of control and engage in energy conservation techniques.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Energy Management (NIC)</p> <p>Independent</p> <p>Assess sleep patterns and other factors that may be aggravating fatigue.</p> <p>Encourage physician evaluation of fatigue if new medications have been added to regimen.</p> <p>Discuss reality of patient's feelings of exhaustion and identify limitations imposed by fatigue state. Note daily energy patterns—peaks and valleys.</p> <p>Assist patient to set realistic activity goals, determining individual priorities and responsibilities.</p> <p>Discuss energy conservation techniques, e.g., sitting instead of standing for activities as appropriate.</p> <p>Review importance of meeting individual nutritional needs.</p> <p>Encourage adequate rest periods during day, routine schedule for bedtime/arising, and scheduling activities during time of best energy.</p> <p>Instruct in stress management techniques, e.g., breathing exercises, visualization, music and light therapy.</p> <p>Identify available resources and support systems.</p>	<p>Multiple factors can cause/aggravate fatigue, including sleep deprivation, emotional distress, side effects of drugs, and developing central nervous system (CNS) disease.</p> <p>Fatigue is present in variable degrees as part of HIV infection process but is often aggravated by nutritional deficiencies and side effects of certain medications. For example, when protease inhibitors are added or changed, fatigue may worsen.</p> <p>Helpful in planning activities within tolerance levels. Patients often expect too much of themselves, believing that they should be able to do more.</p> <p>Patient may need to alter priorities, delegate some responsibilities to manage fatigue and optimize performance.</p> <p>Enables patient to become aware of ways in which energy expenditure can be maximized to complete necessary tasks.</p> <p>Adequate nutrition is needed for optimizing energy production. (Refer to Nutrition: imbalanced, risk for less than body requirements, following.)</p> <p>Helps patient recoup energy to manage desired activities.</p> <p>Reduction of stress factors in patient's life can minimize energy output.</p> <p>May require outside assistance with homemaking/maintenance activities, child care.</p>

NURSING DIAGNOSIS: Nutrition: imbalanced, risk for less than body requirements

Risk factors may include

- Reported inadequate food intake less than recommended daily allowance
- Lack of interest in food, anorexia, depression
- Lack of information, misinformation, misconceptions
- Limited resources (including finances)
- Reported altered sensation of taste and smell, nausea and other side effects of medications
- Sore, inflamed buccal cavity (e.g., thrush, cytomegalovirus [CMV] lesions)

Possibly evidenced by

[Not applicable; presence of signs and symptoms establishes an *actual* diagnosis.]

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Nutritional Status (NOC)

- Maintain adequate muscle mass.
- Maintain stable weight.
- Demonstrate laboratory values within normal limits.
- Report improved energy level.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutritional Counseling (NIC)</p> <p>Independent</p> <p>Determine usual weight before patient was diagnosed with HIV.</p> <p>Weigh regularly and establish current anthropometric measurements. Measure resting energy expenditure (REE) using indirect calorimetry.</p> <p>Determine patient's current dietary pattern/intake and knowledge of nutrition. Use an in-depth dietary assessment tool.</p> <p>Assess presence/degree of nausea and vomiting.</p> <p>Ascertain current financial status, recent and/or anticipated changes in economic status. Explore related costs of a variety of foods.</p>	<p>Early wasting is not readily determined by normal weight-to-height charts; therefore, determining current weight in relation to prediagnosis weight is more useful. Recent unexplained/involuntary weight loss may be a factor in seeking initial medical evaluation.</p> <p>Helps assess/monitor wasting and determine nutritional needs (40% of HIV-positive patients show substantial weight loss). Indirect calorimetry is more accurate for calculating REE than Harris-Benedict equation, which underestimates the energy needs of these patients.</p> <p>Identification of these factors helps plan for individual needs. Patients with HIV infection have documented vitamin and trace mineral (zinc, magnesium, selenium) deficits. Alcohol and drug abuse interfere with adequate intake.</p> <p>The causes of nausea and vomiting are numerous and are associated with medications, functional changes in GI system, and endocrine dysfunction. Protracted nausea and vomiting can debilitate a patient, leading to loss of lean body mass, electrolyte imbalances, and further deterioration of immune function.</p> <p>Helps in planning for meeting nutritional needs, such as purchasing low-cost foods that are nutritionally packed, or patient may need referral to financial aid to help with food stamps or obtaining meals.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutritional Counseling (NIC)</p> <p>Independent</p> <p>Discuss/document nutritional side effects of medications.</p> <p>Help patient plan ways to maintain/improve intake. Identify lactose-free supplements as appropriate. Provide information about nutritionally dense high-calorie, high-protein, high-vitamin, and high-mineral foods.</p> <p>Stress importance of maintaining balanced/adequate nutritional intake and fluids rich with electrolytes, e.g., Gatorade or Pedialyte.</p> <p>Assist patient to formulate dietary plan, taking into consideration increased metabolic demands/energy needs and hyperlipidemia.</p> <p>Recommend environment conducive to eating, e.g., eating frequent small meals, avoiding cooking odors if bothersome; keeping room well ventilated, removing noxious stimuli. Suggest use of spices, marinating red meat before cooking, and/or substituting other protein sources for red meat.</p> <p>Emphasize importance of sharing mealtime with others. Identify someone who can join patient for meals.</p> <p>Explore complementary therapies/nonpharmacologic interventions, such as acupressure, progressive relaxation, and guided imagery to manage anorexia.</p> <p>Discuss use of <i>Lactobacillus acidophilus</i> replacement, e.g. LactAid dairy products and/or tablets/capsules.</p>	<p>Commonly used medications cause anorexia, altered taste, nausea and/or vomiting; some interfere with bone marrow production of RBCs, causing anemia. GI symptoms are common with over-the-counter (OTC) drugs like nonsteroidal anti-inflammatory drugs (NSAIDs), which also may contribute to anorexia.</p> <p>Having this information helps patient understand importance of well-balanced diet. Some patients may try macrobiotic and other diets, believing the diarrhea is caused by lactose intolerance. Eliminating dairy products can have detrimental effects when these components are not replaced from other sources.</p> <p>Patient may be depressed and discouraged with changed health and social status and find it difficult to eat for many reasons. Knowing how important nutritionally balanced intake is to supporting the immune system and remaining healthy can motivate patient to eat.</p> <p>Provides guidance and feedback while promoting sense of control, enhancing self-esteem, and possibly improving intake. HIV infection is continuously stimulating the immune system, increasing metabolic rate and nutritional needs. <i>Note:</i> Use of protease inhibitors is known to elevate levels of glucose and lipids (especially triglycerides and cholesterol).</p> <p>Improves nutritional intake, which is needed to help patient restore/maintain nutritional defenses.</p> <p>Socialization can enhance appetite/food intake, especially when depression, neglect of self-care, and diminished appetite are present.</p> <p>The goal of these interventions is to manage distressing symptoms that interfere with optimal nutritional intake.</p> <p>HIV infection changes the structure of the gut wall, resulting in a decreased lactose level. Intolerance causes abdominal cramping, malabsorption, a bloated feeling, and diarrhea. Also, antibiotics taken for prevention of opportunistic infections cause changes in normal bowel flora, contributing to diarrhea.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutritional Counseling (NIC)</p> <p>Collaborative</p> <p>Consult with dietitian.</p> <p>Monitor laboratory values, e.g., hemoglobin (Hb), RBCs, albumin/prealbumin, total iron-binding capacity (TIBC), potassium, sodium.</p> <p>Provide medications as indicated, e.g., Dronabinol (Marinol), megestrol (Megace), cyproheptadine (Periactin);</p> <p>Antidiarrheal medications, e.g., diphenoxylate/ atropine (Lomotil), octreotide (Sandostatin).</p>	<p>Provides assistance in planning nutritionally sound diet and identifying nutritional supplements to meet individual needs. Liquid supplements (e.g., Advera) have been specifically formulated for the GI manifestations common to the HIV-positive population.</p> <p>These laboratory tests are important in monitoring the patient's nutritional immune status and in identifying nutritional therapy needs. For example, decreased RBCs (anemia) may require additional interventions, such as use of epoetin (Epogen or Procrit) to stimulate RBC production.</p> <p>Antiemetics/appetite stimulants can improve intake to prevent and correct dietary deficiencies. <i>Note:</i> Side effect of use of Megace may include impotence, necessitating change of drug as desired.</p> <p>Diarrhea may be present because of altered GI flora and side effects of anti-infective agents. Treatment can correct malabsorption and enhance oral intake.</p>

<p>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding disease, prognosis, treatment, self-care, and discharge needs</p> <p>May be related to</p> <p>Lack of exposure/recall Information misinterpretation Unfamiliarity with information resources Cognitive limitation</p> <p>Possibly evidenced by</p> <p>Statement of misconception/request for information Inaccurate follow-through of instructions, development of preventable complications Inappropriate/exaggerated behaviors (e.g., hostile, agitated, hysterical, apathetic)</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Knowledge: Disease Process (NOC)</p> <p>Verbalize understanding of condition/disease process and potential complications. Identify relationship of signs/symptoms to the disease process and correlate symptoms with causative factors.</p> <p>Knowledge: Treatment Regimen (NOC)</p> <p>Verbalize understanding of goals of treatment. Initiate necessary lifestyle changes. Participate in treatment regimen.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Learning Facilitation (NIC)</p> <p>Independent</p> <p>Assess emotional ability to assimilate information and understand instructions. Respect patient’s need to use denial coping techniques initially.</p> <p>Provide realistic, optimistic information during each contact with patient.</p> <p>Plan frequent short sessions for teaching. Include written information—a few pieces at each visit.</p> <p>Include SO/family in discussions and conferences as appropriate.</p>	<p>Initial shock and anxiety can block intake of information. Self-esteem, lifestyle, guilt, and denial of own responsibility in acquiring/transmitting disease become issues that must be dealt with. <i>Note:</i> Some initial denial may serve as a protective mechanism promoting more effective self-care.</p> <p>Necessary to provide realistic hope because most patients have been exposed to some inaccurate information about AIDS or have friends/lovers who have died of the disease.</p> <p>Patient will likely feel overwhelmed and need time and repeated contacts to absorb information, the scope of and requirements for treating the infection. Written materials allow for later review and reinforcement of information presented.</p> <p>Provides opportunity to learn information first hand, ask questions, and provide support for patient.</p>
<p>Teaching: Disease Process (NIC)</p> <p>Determine current understanding and perception of diagnosis. Discuss difference between HIV-positivity and AIDS.</p> <p>Identify/problem-solve potential or actual barriers to accessing healthcare services.</p> <p>Provide information about normal immune system/response and how HIV affects it, transmission of the virus, behaviors and factors believed to increase probability of progression. Encourage questions.</p> <p>Review signs/symptoms that could be a consequence of HIV infection, e.g., mild fever, anorexia, weight loss, fatigue, night sweats, diarrhea, dry cough, rashes, headaches, and sleep disturbances.</p> <p>Discuss management strategies for persistent signs/symptoms.</p>	<p>Provides opportunity to clarify misconceptions/myths and make informed choices. People often believe that if they are positive for the virus, they have AIDS; having accurate information about the difference can alleviate fears and allow for development of an individualized plan of care.</p> <p>Transportation, distance, child care, work schedule, homelessness/poverty, lack of insurance or finances are some of the issues that typically interfere with accessing needed primary care and prophylactic interventions.</p> <p>Patient needs to be aware of own personal risk and risk to others to make immediate and long-range decisions and establish a basis for goal setting. Also, establishes rapport and provides opportunity to identify concerns and assimilate information.</p> <p>Patient may experience an acute illness 2–6 wk after becoming infected; however, it is common for infection to be subclinical, with the individual simply feeling unwell.</p> <p>Patient involvement in care increases cooperation and satisfaction with care.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Identify signs/symptoms that require medical evaluation, e.g., persistent fever, increasing cough or swollen lymph glands, profound fatigue unrelieved by rest, weight loss of 10 lb (or more) in less than 2 mo, severe/persistent diarrhea, fever, blurred vision, skin discoloration or rash that persists or spreads, open sores anywhere, symptoms occurring with medication regimen.</p> <p>Stress necessity of regular follow-up care and evaluations including routine CD4 and HIV-RNA viral load counts, and any change in medication regimen (time, frequency, side effects).</p> <p>Discuss need for regular gynecologic examinations.</p> <p>Discuss family planning issues, careful selection of oral contraceptives.</p> <p>Provide preconception counseling, giving information about risk of vertical transmission and ways to reduce the possibility of perinatal transmission.</p> <p>Refer to Antiretroviral Pregnancy Registry as appropriate.</p>	<p>Early recognition of progression of disease/development of opportunistic infections provides for timely intervention and may prevent more serious situations. <i>Note:</i> Most HIV patients are now on medication regimens (usually at least three drugs) and must adhere to the dosages and schedules, which may be difficult and/or cause side effects that tempt patient to alter or discontinue them without notifying the physician.</p> <p>Even though patient may be asymptomatic, periodic evaluation may prevent development of complications, slow the progression of the disease, and assist with treatment decisions. <i>Note:</i> Patients who change medication dosage/frequency in response to side effects can create problems for medication adjustment later with increased viral load and resistance to drugs.</p> <p>HIV-positive women experience a high prevalence of Pap smear, vaginal, and cervical abnormalities.</p> <p>Various antiretroviral drugs have differing effects on ethinyl estradiol (EE) either enhancing or decreasing protective effectiveness.</p> <p>The risk of viral rebound with adverse consequences to the fetus increases in women currently receiving treatment at the time of conception. Research shows that when antiretroviral treatment is initiated early in pregnancy, the neonatal transmission rate has dropped to less than 8% of live births. However, there is a lack of research regarding safety of antiretroviral therapy in pregnancy and its effect on the fetus. (Efavirenz is one exception; it is known to cause severe fetal malformation in monkeys.) The majority of drugs are category C (no clinical trial information) for therapy. For therapy naïve pregnant women, consider withholding therapy until after the first trimester.</p> <p>Collection of information regarding women and pregnancy will increase data on teratogenic effects of medications/antiretrovirals.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Prescribed Medication (NIC)</p> <p>Independent</p> <p>Review drug therapies, including correct dosing/scheduling; side effects, and adverse reactions as appropriate:</p> <p>Antiretrovirals, e.g.:</p> <p>Zidovudine/ZDV (Retrovir, AZT), didanosine/ddI (Videx), zalcitabine/ddC, (Hivid), stavudine/d4T (Zerit), lamivudine/3TC (EpiVir);</p> <p>Protease inhibitors (PIs), e.g., indinavir/IDV (Crixivan), nelfinavir (Viracept), ritonavir/RTV (Norvir), saquinavir/SQV (Fortovase, Invirase), amprenavir/APV (Agenerase);</p> <p>Nonnucleoside reverse transcriptase inhibitors (NNRTIs), e.g., delavirdine/DLV (Rescriptor), nevirapine/NVP (Viramune), efavirenz/EFV (Sustiva);</p> <p>Anti-infectives, e.g., trimethoprim-sulfamethoxazole/TMP/SMX (Bactrim, Septra), azithromycin (Zithromax), clarithromycin (Biaxin), foscarnet (Foscavir), rifabutin (Mycobutin), isoniazid (INH), pyridoxine (Doxine).</p>	<p>These drugs interfere with the HIV replication process, and early treatment may be considered when CD4 count is near 500, even if individual is asymptomatic. Side effects such as symptoms of peripheral neuropathy or pancreatitis necessitate prompt evaluation and possible discontinuation/change in therapy.</p> <p>Currently, 12 antiretroviral agents have been approved by the Food and Drug Administration (FDA), all aimed at blocking replication of the HIV virus at some level. The drugs are generally given in groups of three because a multidrug regimen is more effective in reducing the viral load. (The goal is to maintain viral load at <500 copies/mL.)</p> <p>These drugs are called nucleoside reverse transcriptase inhibitors (NRTIs). In the past, zidovudine was given alone and as a first-line treatment. Now the drug is usually given in a three-drug treatment regimen, along with another NRTI and a protease inhibitor. Zidovudine is, however, safe in preventing perinatal HIV infection, so it is an option for the pregnant patient.</p> <p>When combined with NRTIs, protease inhibitors control the HIV-RNA viral load by blocking viral replication at two different target sites in the replication process. Immune function is maintained with early intervention, or improved when initiated later.</p> <p>These drugs inhibit viral replication by a different mechanism than NRTIs or PIs. They also are used in combination because using them alone seems to encourage drug resistance.</p> <p>Focus on prevention of commonly occurring opportunistic infections, such as <i>Pneumocystis carinii</i> pneumonia (PCP), cytomegalovirus (CMV), <i>Mycobacterium avium</i> complex (MAC), or TB may prolong general wellness. Primary prophylactic therapy aims to prevent or delay onset of symptoms of reactivated or newly acquired infection. The goal of secondary prophylaxis is to prevent or delay recurrent episodes of particular infection. Prophylaxis continues indefinitely as long as the drug is tolerated. <i>Note:</i> Many of these organisms (except TB) are part of the normal body flora and are kept under control by the healthy immune system.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Prescribed Medication (NIC)</p> <p>Independent</p> <p>Provide information about clinical trials available as individually appropriate.</p> <p>Provide information about pharmaceutical company assistance programs.</p> <p>Risk Identification (NIC)</p> <p>Assess potential for inappropriate/high-risk behavior e.g., continued injection drug abuse, unsafe sexual practices. Stress need to avoid use of illicit injected drugs or, if unwilling to abstain, to avoid sharing needles and to clean works with bleach solution, rinsing carefully with water.</p> <p>Recommend exploring drug treatment resources, e.g., methadone clinics or substance abuse recovery groups or programs.</p> <p>Stress necessity of, and methods for, practicing safer sex at all times.</p> <p>Discuss active changes in sexual behaviors that patient can make that may satisfy sexual needs.</p> <p>Provide information about other necessary lifestyle changes and health maintenance factors:</p> <p style="padding-left: 40px;">Avoid people with infections;</p> <p style="padding-left: 40px;">Exercise within ability, alternate rest periods with activity, and get adequate sleep;</p>	<p>Scientific research requires HIV-positive test subjects. Participation may provide individual with a sense of contributing to body of knowledge/search for cure, in addition to no-cost monitoring and medications for those with limited financial resources.</p> <p>Some medications are provided free or at reduced cost, based on income.</p> <p>High denial/anger, drug addiction may cause patient to continue behaviors that are high risk for spread of the virus. Even moderate changes in lifestyle may reduce exposure to other infective agents that can cause additional stress to the immune system.</p> <p>Programs could help reduce HIV transmission by reducing injection drug use when patient substitutes (i.e., methadone) or recovers from drug use, or if safer injection and needle use techniques are learned.</p> <p>Limits spread of virus and exposure to other STDs. A person's sexual expression and identity are threatened by the discovery of the diagnosis. Therefore, 40% or more of individuals with HIV may not reveal status to potential sexual partners, contributing to ongoing transmission. Women may not follow guidelines because partner refuses to use condoms.</p> <p>Learning alternative forms of expression promotes a sense of responsibility and control. May reduce sexual tensions/promote normalcy in sexual relationships and reduce fear/guilt related to potential transmission of HIV. <i>Note:</i> Patients, particularly women, may fear partner will leave, resulting in loss of love/emotional support.</p> <p>Evidence suggests that specific dietary and lifestyle factors may slow the progression of HIV infection because they support a more healthy immune system.</p> <p>When the immune system is depressed, the person's ability to fight exposure to common communicable diseases is limited.</p> <p>Helps manage fatigue; maintains strength and sense of well-being. Exercise has also been shown to stimulate the immune system.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Risk Identification (NIC)</p> <p>Independent</p> <p>Eat regularly, even if appetite is reduced; try small, frequent meals and snacks of foods high in nutrition; discuss ways to control nausea/vomiting and improve appetite;</p> <p>Practice daily oral hygiene, use a soft toothbrush; examine mouth regularly for sores, white film, or changes in color; have regular dental checkups every 6 mo;</p> <p>Examine skin for rashes, bruises, breaks in skin integrity.</p> <p>Identify additional resources, e.g.: support groups, peer counselors, and mental health professionals;</p> <p>Case managers.</p>	<p>Physical and psychological stressors increase metabolic needs; in addition, side effects of medication, presence of nausea/vomiting, and anorexia often limit oral intake. The result is nutritional deficits that can further impair the immune system.</p> <p>Poor oral hygiene/dental care can affect oral intake adversely and increase the risk of opportunistic/systemic infections.</p> <p>May indicate developing complications/increased risk of infection.</p> <p>Patient will experience a variety of emotional and psychological responses to the diagnosis and its consequences and may need additional assistance to promote optimal adjustment.</p> <p>In early stages of HIV infection, focus may be on social services (e.g., help with housing, employment, legal issues, finances). Later, as disease progresses, the emphasis switches to medical and related community services.</p>

<p>NURSING DIAGNOSIS: Social Isolation, risk for</p> <p>Risk factors may include</p> <p>Altered state of wellness, changes in physical appearance Perceptions of unacceptable social or sexual behavior/values Inadequate resources/fear of losing personal resources</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA— PATIENT WILL:</p> <p>Social Support (NOC)</p> <p>Identify stable support system/individual(s). Use resources for assistance as appropriate. Express increased sense of self-esteem.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Support System Enhancement (NIC)</p> <p>Independent</p> <p>Determine patient's response to condition and concerns/fears about response of others.</p> <p>Assess patient's feelings about self, sense of ability to control situation, sense of hope, and coping skills.</p> <p>Discuss concerns regarding employment/leisure involvement. Note potential problems involving finances, insurance, housing.</p> <p>Identify availability/stability of support systems including SO, immediate/extended family, community.</p> <p>Encourage honesty in relationships as appropriate.</p> <p>Encourage contact with SO, family, and friends.</p> <p>Assist patient to problem-solve solutions to short-term/imposed isolations (e.g., communicable disease measures, severely compromised immune system).</p> <p>Help patient differentiate between isolation and loneliness/aloneness, which may be by choice.</p> <p>Be alert to verbal/nonverbal cues, e.g., withdrawal, statements of despair, sense of aloneness. Determine presence/level of risk of suicidal thoughts.</p>	<p>How the individual accepts and deals with the situation will help decide the plan of care and interventions.</p> <p>Information is essential to planning individualized care.</p> <p>Patients with this potentially terminal illness that carries a stigma face major problems with possible loss of employment, medical insurance, housing, and care sources if they become unable to care for themselves.</p> <p>Crucial information to help patient plan future care.</p> <p>As a rule, acquaintances do not need to be informed of patient's health status. However, information should be shared with close relationships (e.g., SO, family, sexual partners). Honesty can help identify stable support persons.</p> <p>Many patients fear telling SO, family, and friends for fear of rejection; and some patients withdraw as a result of tumultuous feelings. Contact promotes sense of support, concern, involvement, and understanding. Supporting loved ones as they learn of the diagnosis is beneficial and can provide optimism for the long-term.</p> <p>Anticipatory planning can defuse sense of isolation and loneliness that can accompany these situations.</p> <p>Provides an opportunity for patient to realize the control he or she has to make decisions about the choice to take care of self in regard to these issues.</p> <p>Indicators of despair and suicidal ideation may be present. When these cues are acknowledged, patient is usually willing to divulge thoughts and sense of isolation/hopelessness.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Support System Enhancement (NIC)</p> <p>Collaborative</p> <p>Identify community resources, self-help groups, rehabilitation/drug cessation programs as indicated.</p> <p>Refer to psychiatric clinical nurse specialist/psychiatrist as needed.</p>	<p>Provides opportunities for resolving problems that may contribute to sense of loneliness and isolation, transmission risks, and sense of guilt.</p> <p>May require more in-depth support to deal with feelings, manage difficult situations.</p>

<p>NURSING DIAGNOSIS: Therapeutic Regimen: Individual/Families, ineffective management</p> <p>May be related to</p> <p>Complexity of healthcare system/access to care; economic difficulties</p> <p>Complexity of therapeutic regimen (e.g., confusing/difficult dosing schedule, duration of regimen)</p> <p>Mistrust of regimen and/or healthcare personnel (client/provider interactions)</p> <p>Health beliefs/cultural influences</p> <p>Perceived seriousness/susceptibility/benefits of therapy</p> <p>Decisional conflicts; powerlessness</p> <p>Family conflict/crises</p> <p>Possibly evidenced by</p> <p>Expressed desire to manage situation more appropriately</p> <p>Verbalized difficulty with regulation/integration of one or more prescribed regimens for treatment of illness and its effects</p> <p>Failure to take actions to reduce risk factors for progression of illness and sequelae</p> <p>Evidence of acceleration of illness symptoms/development of complications</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT/FAMILY WILL:</p> <p>Treatment Behavior: Illness or Injury (NOC)</p> <p>Identify individual factors affecting management of regimen.</p> <p>Accept personal responsibility for own actions and participate in problem-solving activities.</p> <p>Develop contract for care with mutually agreeable goals for treatment and mechanisms for changing/terminating elements of plan.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Patient Contracting (NIC)</p> <p>Independent</p> <p>Make time to listen to patient concerns.</p> <p>Determine patient's/SO's perception or understanding of regimen.</p>	<p>Promotes feelings of value and may identify additional factors that affect outcome of therapy.</p> <p>Identifies areas of confusion/conflict or lack of accurate information that may impede cooperation with regimen.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Patient Contracting (NIC)</p> <p>Independent</p> <p>Assess perceived/actual barriers to accessing healthcare services and reasons for deviations from prescribed plan.</p> <p>Instruct patient carefully in all aspects of medication regimen, times, interaction with food, side effects;</p> <p>Provide written schedule;</p> <p>Suggest placing doses of medications in various locations;</p> <p>Recommend various methods to alert patient to medication time, such as portable pill container, alarms;</p> <p>Reduce dose frequency and number of pills;</p> <p>Stress importance of keeping healthcare provider informed of concerns and ability to continue prescribed medication regimen;</p> <p>Notify healthcare provider immediately if unable to continue all antiretroviral medications.</p> <p>Negotiate a therapy plan patient can commit to. Include routines of awakening, meals, work schedule, and medication side effects.</p> <p>Assist patient to develop realistic health goals and incorporate wellness activities and practices, i.e., exercise, smoking cessation, nutrition, vitamin supplements, into daily routine.</p> <p>Review stress management skills.</p> <p>Provide anticipatory guidance, possible occurrences and choices, if any, to prevent or delay complications.</p> <p>Identify adaptive interventions valid for progressive long-term care needs.</p> <p>Monitor adherence to prescribed medical regimen. Alter plan of care as needed.</p>	<p>Provides opportunity to clarify actual problems and develop alternative plan acceptable to healthcare provider.</p> <p>Thorough understanding may enhance cooperation with regimen, help in identifying potential for compromise.</p> <p>Helpful for future reference.</p> <p>When patient's routine is stable, and he or she engages in activities away from home, it is helpful to keep a supply of medications in more than one location (e.g., work, home of family/friends).</p> <p>Will assist busy or forgetful patient to take medications at appropriate intervals.</p> <p>Increases ability to manage treatment regimen with little interference.</p> <p>Drug levels quickly fall below therapeutic levels if one dose is missed. <i>Note:</i> Evidence suggests women tend to reduce or stop therapy secondary to side effects more frequently than men.</p> <p>Reduces potential for drug resistance.</p> <p>The more individualized the plan is, the greater probability of adherence.</p> <p>Multiple responsibilities and demands on the time of patients, especially women, make it appear difficult to include any additional activities of self-care.</p> <p>Patients must balance self-care needs and needs of other family members, which may be conflicting.</p> <p>Reduces crisis events. Provides time for patient to prepare for known, usual or expected changes. Permits earlier initiation of therapies and decreases disruption of schedule.</p> <p>Builds on coping strategies already effective for this individual.</p> <p>Regimen is likely to be complicated and time consuming. Thoughtful changes in plan may help enhance cooperation.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Support System Enhancement (NIC)</p> <p>Independent</p> <p>Identify potential or actual support person(s). Include in teaching and problem-solving activities as appropriate.</p> <p>Help patient develop strategies that can gain supportive persons.</p> <p>Collaborative</p> <p>Identify appropriate women's groups/services, social worker; financial resources, respite care, and other community programs.</p> <p>Refer to counselor/therapist, spiritual advisor as appropriate.</p>	<p>Helpful in planning for future and current needs of person and family.</p> <p>The more support persons available, the lower the risk of support burnout.</p> <p>Often female patients are single parents/caretakers for family. Groups can provide support and tangible help in dealing with issues of child care, parenting, what to do when patient is too ill to parent.</p> <p>Opportunity to discuss concerns/fears may aid in problem-solving solutions and living with required changes.</p>

POTENTIAL ONGOING CONSIDERATIONS (dependent on patient's age, physical condition/presence of complications, person resources, and life responsibilities)

Fatigue—decreased metabolic energy production, increased energy requirements (hypermetabolic state).

Nutrition: imbalanced, less than body requirements—increased metabolic demands/energy requirements, side effects of medication, anorexia, fatigue.

Decisional Conflict—unclear personal values/beliefs, perceived threat to value system, multiple or divergent sources of information, support system deficit, interference with decision making.

Infection, risk for—depression of immune system, chronic disease, malnutrition, use of antimicrobial agents (superimposed infections, e.g., yeast).

Therapeutic Regimen: [Individual]/Families, ineffective management—complexity of healthcare system/therapeutic regimen, perceived seriousness/susceptibility/benefits of therapy, family conflicts/crises.