

# DEMENTIA DUE TO HIV DISEASE

## DSM-IV

### DEMENTIAS DUE TO OTHER MEDICAL CONDITIONS

#### 294.1 DEMENTIA DUE TO HIV DISEASE (CODE 042 ON AXIS III)

Dementia is impairment of short- and long-term memory, abstract thinking, and judgment with personality changes, severe enough to interfere with work, normal social activities, and relationships.

Human immunodeficiency virus (HIV) has been shown to affect the brain directly by crossing the blood-brain barrier on two types of immune cells—monocytes and macrophages. Cells within the central nervous system (CNS) have been found to have express CD4 receptor sites for HIV entry into cells. Although several hypotheses have been proposed, it is not known exactly by what mechanism neurological dysfunction occurs. Neuropsychiatric symptoms may range from barely perceptible changes in a person's normal psychological presentation to acute delirium to profound dementia. Because of the associated immune dysfunction, secondary brain infections may cause further damage.

Studies have shown CNS abnormalities in a large percentage of clients, with 3 people in 10 who are HIV-symptomatic exhibiting symptoms of dementia. Recent studies suggest symptoms can occur prior to an acquired immunodeficiency syndrome (AIDS) diagnosis, as they are the first clinical symptoms of progression.

## CLIENT ASSESSMENT DATA BASE

### Activity/Rest

Low energy level, constant fatigue  
Insomnia, change in sleep patterns  
Yawning frequently  
Wakefulness at night

### Ego Integrity

Emotional lability (e.g., irritability, anxiety, agitation, combativeness, and panic attacks)  
Reports feeling like he or she is losing his or her mind  
Feelings of powerlessness, worthlessness

### Elimination

Constipation/diarrhea  
Increasing frequency of incontinence

### Food/Fluid

Decreased interest in food  
Apraxia (inability to carry out motor functions of chewing and swallowing despite intact sensory function)  
Agnosia (failure to recognize foods despite intact sensory function); may report change in taste/smell  
Weight loss

### Hygiene

Unable to do simple/difficult tasks of activities of daily living (ADL)  
Deficits in many/all personal care areas  
No concern for hygiene; disheveled, unkempt appearance

## **Neurosensory**

Changes in mental status, forgetfulness, poor concentration/decreased alertness, apathy; impaired impulse control (loss of mental acuity/ability to problem-solve)  
Unrealistic expectations, free-floating anxiety, paranoid ideation  
Organic psychosis (hallucinations, delusions)  
Psychomotor retardation/slowed responses, decreased grip strength, decreased pinprick sensation, ataxic gait  
Impaired sensation or sense of position  
Numbness, tingling of feet (paresthesias)  
Deterioration in handwriting, decreased verbal comprehension, aphasia, mutism  
Seizure activity; falls/accidental fractures  
Antisocial personalities (drug users)

## **Pain/Discomfort**

Headache  
Pain in lower extremities, burning in feet  
Guarding behavior (posturing, withdrawal), request not to be touched

## **Safety**

Decline in general strength; muscle tremors, sense of lack of balance; spastic weakness, changes in gait/ataxia, hemiparesis  
Bruises, burns/lesions  
Not completing tasks (e.g., not turning off stove/burning food)  
Needle marks on skin (injection drug use)

## **Sexuality**

Decreased interest in sexual activity; withdrawal from others (intimacy)  
Decreased ability/inability to obtain arousal  
Unsafe sexual practices related to drug abuse

## **Social Interactions**

Disinterest in friends/social interaction; loss of social responsiveness; withdrawal  
Labile personality, increased anger  
Slurred speech/aphasia, mutism (late)  
Disorganized activities  
Chaotic lives owing to drug use (e.g., homelessness, unemployment)

## **DIAGNOSTIC STUDIES**

Choice of studies depends on individual situation to rule out conditions with symptoms mimicking HIV dementia, especially depression.

**Weschler Adult Intelligence Scale (WAIS-R):** Used to screen for the presence of HIV-induced brain damage; a low score may indicate memory loss or sensorimotor deficit (may be influenced by depression, anxiety, and hostile states).

**Minnesota Multiphasic Personality Inventory (MMPI):** Identifies degree of depression, presence of personality disorders.

**Picture Drawing:** Differentiates depression from dementia (depressed person can draw, demented person cannot).

**Tumor Necrosis Factor (TNF):** Elevated levels may account for white matter pallor.

**Mental Status Examinations (e.g., Galveston Orientation and Amnesia Scale [GOAT]; Neurobehavioral Rating Scale [NRS, Freeman]; Self-Rating Depression Scale; Cognitive Evaluation):** Identify specific deficits.

**CBC:** May show anemia, affecting cerebral oxygenation/mentation.

**Blood Chemistries:** Rule out metabolic causes (e.g., diabetes mellitus, hypoglycemia, hypothyroid) and electrolyte deficiencies.

**B<sub>12</sub>:** Identifies diminished levels (affects synaptic responses and biochemical interactions).

**Albumin:** Provides a measure of nutritional status.

**Arterial Blood Gases (ABGs):** Rule out/determine contribution of hypoxia on mentation.

**Serology Rapid Plasma Reagin (RPR)/Screens:** May reveal infection by STD, requiring treatment.

**Alcohol/Drug Screen:** Rules out acute drug intoxication, drug or alcohol withdrawal.

**CT/MRI/Positron Emission Tomography (PET):** Determine changes in brain mass (lesions or atrophy) and activity (expect to find cerebral atrophy mainly in the subcortical regions, white matter pallor, and ventricular enlargement).

**Lumbar Puncture:** Rule out tumors, identify CNS infections; may show increased protein (60%), glucose, elevated white blood count (WBC) (which may reflect cytomegalovirus [CMV]); with culture/sensitivity done to identify/rule out specific infective agents/treatment options.

## NURSING PRIORITIES

1. Promote socially acceptable responses, limit inappropriate behavior.
2. Prevent injury/complications.
3. Support SO/family involvement in care.
4. Provide information about condition, prognosis, and treatment.

## DISCHARGE GOALS

1. Maximal level of independent functioning achieved.
2. Injury prevented/minimized, complications resolved.
3. SO/family effectively participating in care.
4. Condition, prognosis, and therapeutic regimen understood at level of ability.
5. Plan in place to meet needs after discharge.

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### NURSING DIAGNOSIS

#### May Be Related to:

#### Possibly Evidenced by:

### CONFUSION acute/chronic

Direct CNS infection by HIV, disseminated systemic opportunistic infection, hypoxemia, brain malignancies, and/or CVA/hemorrhage; vasculitis

Alteration of drug metabolism/excretion, accumulation of toxic elements; severe electrolyte imbalance

Sleep deprivation

Fluctuation in cognition; progressive/long-standing cognitive impairment

Fluctuation or no change in level of consciousness

Increased agitation, restlessness

Altered interpretation/response to stimuli; misperceptions

Changes in sleep/wake cycle

**Client Outcomes/Evaluation Criteria—  
Client Will:**

Clinical evidence of organic impairment

Regain usual/maintain optimum reality orientation and cognitive function.

Demonstrate a decrease in undesired behaviors, threats, and confusion.

**Client/SO Will:**

Verbalize understanding of causative/contributing factors.

Initiate lifestyle/behavior changes to minimize recurrence.

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## **ACTIONS/INTERVENTIONS**

## **RATIONALE**

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### **Independent**

Assess mental and neurological status using appropriate tools (e.g., Neurobehavioral Rating Scale [Freeman]). Note changes in orientation, response to stimuli, ability to problem-solve, anxiety, altered sleep patterns, hallucinations, paranoid ideation. Repeat serial/periodic evaluation at least every 2 to 4 months.

Establishes functional level at time of admission. Serial evaluations alert the nurse to changes in status that may be associated with failure of prophylaxis, progression of HIV dementia, exacerbation of CNS infection/opportunistic disease, environmental/psychological stressors, or side effects of drug therapy.

Consider effects of emotional distress (e.g., anxiety, grief, anger, depression).

May contribute to reduced alertness, confusion, withdrawal, hypoactivity and require further evaluation and intervention.

Monitor medication regimen and usage.

Actions and interactions of various medications and prolonged drug half-life/altered excretion results in cumulative effects, potentiating risk of toxic reactions. Some drugs may have adverse side effects (e.g., Haldol can seriously impair motor function in clients with AIDS dementia complex) necessitating a change in therapy.

Note signs of acute CNS infection (e.g., headache, nuchal rigidity, vomiting, fever, changes in motor function).

CNS symptoms associated with disseminated meningitis/encephalitis may range from subtle personality changes to confusion, irritability, drowsiness, stupor, seizures, and dementia. Sudden onset of motor changes may indicate polyradiculopathy and need for immediate medical response.

Approach client in a slow, calm manner.

Hurried approaches can startle/threaten the confused client who misinterprets or feels threatened by imaginary people and/or situations.

Maintain a pleasant environment, with appropriate auditory, visual, and cognitive stimuli.

Providing normal environmental stimuli can help in maintaining some sense of reality orientation.

Decrease noise, especially at night.

Promotes sleep, reducing cognitive symptoms and sleep deprivation.

Maintain safe environment: e.g., excess furniture out of the way, call bell within client's reach, bed in low position/rails up or bed against wall and padding on floor, restriction of smoking (unless monitored by caregiver/SO), seizure precautions, soft restraints if indicated.

Provide information about care/answer questions simply and honestly without negating hope. Repeat explanations as needed and supplement with written materials as appropriate.

Provide cues for reorientation (e.g., radio, television, calendars, clocks, room with an outside view). Use client's name; identify yourself.

Maintain consistent personnel and structured schedules matching home routines as appropriate.

Suggest use of databooks, lists, alarm watch/pill box, other devices to keep track of activities and care needs.

Encourage client to do as much as he or she can (e.g., dress and groom daily, sit in chair, see friends).

Allow adequate time to complete ADLs, provide step-by-step directions for activities, as appropriate. Encourage family/SO to socialize and provide reorientation with current news, family events.

Reduce provocative/noxious stimuli. Maintain bed rest in quiet room with subdued light, if indicated.

Provide/encourage physical and verbal interactions within client's level of tolerance.

Redirect attention, set limits on maladaptive/abusive behavior, avoid open-ended choices.

Provide support for SO/family. Encourage discussion of concerns/fears.

Determine presence of Advance Directives/Durable Medical Power of Attorney.

Decreases the possibility of client injury.

This can reduce anxiety and fear of unknown, may enhance client's/SO's understanding and involvement/cooperation in treatment; and maintain hope in the context of the individual situation.

Frequent reorientation to place, time, and person may be necessary, especially during fever/acute CNS involvement.

Sense of continuity may help limit confusion and reduce associated anxiety.

These techniques help client to manage problems of forgetfulness.

Can help to maintain sense of normalcy and mental abilities for longer period.

Familiar contacts are often helpful in maintaining reality orientation, especially if client is hallucinating.

If the client is prone to agitation, violent behavior, or seizures, reducing external stimuli may be helpful. **Note:** A darkened room can create unusual shadows that are hard for client to identify and may increase confusion.

Touch/gentle stroking and a soft voice can have a calming effect, helping to reduce anxiety. However, touch needs to be used with caution depending on response of client.

Provides sense of security/stability in an otherwise confusing situation.

Bizarre behavior/deterioration of abilities may be very frightening for loved ones and makes management of care/dealing with situation difficult. SO may feel a loss of control as stress, anxiety, burnout, and anticipatory grieving impair usual coping abilities.

Clarifies client's wishes and establishes who is responsible for decision-making when client is cognitively impaired.

Discuss causes/future expectations and treatment if dementia is diagnosed. Use concrete terms.

Explore options to meet long-term needs (e.g., home/respite-care resources, extended-care facilities).

### **Collaborative**

Assist with/monitor diagnostic studies (e.g., MRI/CT scan, spinal tap) and laboratory studies as indicated (e.g., /BUN/Cr, electrolytes, ABGs).

Administer medications as indicated:

ZDV

Amphotericin B (Fungizone);

Antibiotics (e.g., erythromycin);

Antipsychotics (e.g., haloperidol [Haldol]);  
and/or anti-anxiety agents (e.g., lorazepam [Ativan]);

Dextroamphetamine (Dexedrine);  
methylphenidate (Ritalin).

Provide controlled environment/behavioral management.

Refer to counseling as indicated.

Obtaining information that ZDV/protease inhibitors improve(s) cognition by dropping the viral load can provide hope and control for losses.

Progressive/unresolved dementia can exhaust SO/family abilities to care for client, necessitating outside placement.

Choice of tests/studies depends on clinical manifestations and index of suspicion, as changes in mental status may reflect a variety of causative factors (e.g., CMV meningitis/encephalitis, drug toxicity, electrolyte imbalances, and altered organ function).

Shown to improve neurological and mental functioning.

Antifungal is useful in treatment of cryptococcosis meningitis.

May be effective against CMV.

Cautious use may help with problems of sleeplessness, emotional lability, hallucinations, suspiciousness, and agitation.

These stimulants may improve mood and intellectual functioning.

Team approach may be required to protect client when mental impairment (e.g., delusions, loss of cognition) threatens client safety.

May help client gain control in presence of thought disturbances or psychotic symptomatology.

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**NURSING DIAGNOSIS****ANXIETY (specify level)****May Be Related to:**

Threat to self-concept; unmet needs  
Perceived threat or change in health status;  
threat of death  
Interpersonal transmission/contagion

**Possibly Evidenced by:**

Reports feeling scared, shaky, having increased tension,  
apprehension, "I feel like I'm going crazy"  
Increased somatic complaints; increased wariness  
Extraneous movements, tremors

**Desired Outcomes/Evaluation Criteria—**

Verbalize awareness of feelings.

**Client Will:**

Identify healthy ways to deal with anxiety and  
underlying causative factors.  
Use support systems effectively.  
Experience reduction in frequency and duration of episodes of  
anxiety.  
Direct energies to maintaining optimal level of functioning.

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**ACTIONS/INTERVENTIONS****RATIONALE**

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**Independent**

Assure client of confidentiality within limits  
of situation.

Provides client reassurance and the opportunity  
to problem-solve anticipated situations.

Establish a therapeutic relationship, conveying  
empathy and caring.

Promotes openness and opportunity for client to  
talk freely about concerns and fears.

Ascertain client's perception of the threat  
represented by the situation.

The client may be aware of cognitive changes, thus  
increasing the sense of anxiety. The potential for  
suicide may be worsened if client perceives the  
situation as hopeless.

Encourage client to acknowledge and express feelings.

Although an underlying medical cause for  
cognitive impairment may be present, the  
symptoms can increase anxiety.

Permit expressions of anger, fear, despair without  
confrontation. Give information that feelings are  
normal and are to be appropriately expressed.

Acceptance of feelings allows client to begin to  
deal with situation.

Assist the client to develop own awareness of verbal  
and nonverbal behaviors.

Being aware of self-behaviors brings increased  
understanding of responses of others.

Identify coping skills the individual is using. Review additional strategies when repertoire is limited.

Maintain frequent contact with client. Talk with and touch client. Limit use of isolation clothing/masks, restrictive environment.

Identify and encourage client interaction with support systems. Encourage verbalization/interaction with family/SO.

Provide accurate, consistent information regarding prognosis. Encourage cooperation with medical evaluation to rule out conditions requiring medical intervention.

Explain procedures, providing opportunity for questions. Stay with client during procedures and consultations.

Review medication regimen for evidence of interactions between OTC and prescribed medications.

Be alert to signs of denial/depression (e.g., withdrawal; angry, inappropriate remarks). Determine presence of suicidal ideation and assess potential on a scale of 1–10.

Include SO as indicated when major decisions are to be made.

## **Collaborative**

Monitor results of diagnostic studies.

Administer antianxiety medications with caution. Begin with low doses and increase slowly.

Refer for ongoing individual/family psychiatric therapy as indicated. Identify available resources/support groups.

Helps the client identify coping techniques and draw on past and current styles that may be helpful in the situation.

This assures the client that he or she is not alone or rejected. Conveys respect for and acceptance of the person, fostering trust. Avoiding unnecessary use of “protective clothing/ restrictions” promotes positive social contact and general sense of normalcy.

Reduces feeling of isolation. If family support systems are not available, outside sources can be contacted (e.g., local AIDS task force).

Can reduce anxiety and enable client to make decisions/choices based on realities. Some causative factors for cognitive impairment are treatable/reversible.

Accurate information allows the client a sense of control. Client may be calmer when he or she understands procedure and expectations.

Certain drug interactions can induce anxiety.

Client may use defense mechanism of denial and continue to hope that diagnosis is inaccurate. Feelings of guilt and spiritual distress may cause the client to become withdrawn. The individual may believe that suicide is a viable alternative.

Ensures a support system for the client and allows the SO the chance to participate in client’s life. Furthermore, SO may hold Durable Power of Attorney and be legally responsible for assisting in or making care decisions.

**Note:** If client, family, and SO are in conflict, separate care consultations and visiting times may be needed.

Identification/treatment of underlying conditions (e.g., opportunistic infections, chemical imbalances, or lymphomas) may limit progression/reverse cognitive impairment and corresponding anxiety.

Although these medications may be useful in individual situations, they may have increased untoward effects because these clients are sensitive to side effects.

May require further assistance in dealing with diagnosis/prognosis, especially when suicidal thoughts are present.

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**NURSING DIAGNOSIS****May Be Related to:****Possibly Evidenced by:****Desired Outcomes/Evaluation Criteria—  
Client Will:****SLEEP PATTERN disturbance**

Psychological stress (e.g., anxiety, depression)

HIV neurological impairment (neurotransmitter impairment)

Inactivity/changes in activity patterns

Verbalization of not feeling rested

Difficulty falling asleep; frequent awakening

Increasing irritability, disorientation, restlessness, or lethargy

Identify appropriate interventions to promote sleep.

Report improved sleep pattern, sense of being rested.

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**ACTION/INTERVENTIONS****RATIONALE**

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**Independent**

Identify factors contributing to insomnia and problem-solve solutions.

Evaluate use of caffeine and alcohol.

Reduce environmental stimulation. Provide soft music or “white noise,” as appropriate.

Provide evening snack, warm milk, back rub, comfortable environmental temperature, and straighten linens.

Reduce fluid intake after 5 PM.

Administer pain medications when indicated (e.g., 30–60 minutes before bedtime).

**Collaborative**

Administer medications as needed, such as amitriptyline (Elavil).

Chronic pain of neuropathy and cough associated with pneumonias and other URIs, medication interactions can interfere with sleep.

Overindulgence in these substances reduces REM sleep.

Reduces sensory stimulation; soft music/white noise can block out disturbing sounds. If Stage IV sleep is not reached, there is increased risk of psychological symptoms.

Promotes relaxation. L-Tryptophan (found in milk) is believed to induce drowsiness.

Prevents wakefulness related to sensation of bladder fullness and episodes of incontinence.

Alleviating pain can help client to relax, fall asleep more quickly, and sleep better.

May reduce depression, pain of peripheral neuropathy, and promote sleep.

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**NURSING DIAGNOSIS****INJURY/TRAUMA, risk for****Risk Factors May Include:**

Weakness, balancing difficulties, reduced tactile sensation  
Cognitive deficits, inability to recognize/identify danger in environment  
Smoking unattended  
Seizure activity

**Possibly Evidenced by:**

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

**Desired Outcomes/Evaluation Criteria—  
Client Will:**

Remain safe, without injury to person or damage to environment.

**Client/Caregiver Will:**

Recognize potential risks in the environment.  
Identify and implement steps to correct/  
compensate for individual factors.

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**ACTIONS/INTERVENTIONS****RATIONALE**

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**Independent**

Assess degree of impairment in cognitive and functional abilities. Assist client/SO to identify risks and potential hazards.  
Assist client/SO to plan for activities and safety measures to be considered (e.g., direct monitoring of cigarette use, and use of cane/walker for ambulation, seizure precautions).  
Inspect skin during self-care activities. Encourage client/SO to monitor skin periodically.  
Investigate availability of/evaluate client's ability to use home emergency call system.  
Provide for protective environment when indicated, someone to stay with client on a full-time basis, use of restraints, admission to long-term care facility.

Increases awareness of dangers and provides opportunity to implement anticipatory interventions.  
Involving client in planning may reduce frustration, while increasing client sense of control and self-worth.  
Presence of ecchymoses, lacerations, rashes, etc. may require treatment as well as signal need for closer monitoring/protective interventions.  
Allows for periodic monitoring and prompt response as needed, enhancing safety in home setting.  
Near end-stage the client may no longer be able to recognize safety factors and may wander. **Note:** This is not likely to be a prolonged period of time for the client with HIV dementia.

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**NURSING DIAGNOSIS****FAMILY COPING, ineffective:  
compromised/disabling/CAREGIVER ROLE STRAIN****May Be Related to:**

Situational conflict (parent-adult-child conflict, adult/child returning home with terminal illness; financial difficulties/insufficient resources)

Disruptive/bizarre behavior of client

Unpredictable illness course or instability in the care receiver's health, caregiver health impairment

Individual helplessness/grief about watching loved one deteriorate

Sense of shame surrounding a diagnosis of AIDS (regardless of how contracted)

**Possibly Evidenced by:**

Prolonged disease/disability progression that exhausts the supportive capacity of SO

Highly ambivalent family relationship

Difficulty with acceptance/adaptation to client's sexual orientation/lifestyle/behaviors previous to caregiving situation

Family becoming embarrassed and socially immobilized

Family feeling stress or nervousness in relationship with the care receiver; conflict around issues of providing care

Lack of resources/inability to provide level of care indicated; difficult decisions with legal/financial considerations

Caregiver worry about care receiver's health/emotional state, possibility of outside placement, concern

Feelings of loss because care receiver is like a different person compared with before caregiving began

**Desired Outcomes/Evaluation Criteria—  
Family/Caregiver Will:**

Identify/verbalize resources within themselves to deal with the situation.

Verbalize realistic understanding/expectations of client.

Demonstrate positive coping behaviors in dealing with situation.

Use outside support systems effectively.

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**ACTIONS/INTERVENTIONS****RATIONALE**

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**Independent**

Review past life experiences, role changes, and coping skills.

Provides an opportunity to identify skills that may help individuals cope with grief of current situation more effectively.

Encourage unlimited visitation as tolerated by client.

Contact with family forms a base of reality and can provide a reassuring freedom from loneliness.

Provide time/listen with regard to concerns/anxieties.	Recurrent contact helps family members realize and accept situation.
Determine family's/SO's ability to care for client at home; reevaluate periodically.	The self-sacrificing, painful nature of the care required in this disease necessitates constant support for SOs to deal effectively with the multifaceted problems arising during the course of this illness and to ease the process of adaptation and grieving.
Include SOs in teaching and planning for home care.	Behaviors like hoarding, clinging, unjust accusations, angry outbursts, etc. can precipitate family/caregiver burnout and interfere with ability to provide effective care.
Focus on specific problems as they occur, the "here and now."	Can ease the burden of home management and increase adaptation. Comfortable and familiar lifestyle at home is helpful in preserving the affected individual's need for belonging.
Establish priorities.	Disease progression follows no set pattern. Furthermore, premature focus on "what ifs" such as development of incontinence or possibility of LTC placement can impair the ability to cope with present issues.
Be realistic and honest in all matters.	Helps to create a sense of order and facilitates problem-solving.
Help caregiver/family understand the importance of maintaining psychosocial functioning.	Decreases stress that surrounds false hopes (e.g., that individual may regain past level of functioning from advertised or unproven medication/herbal preparations).
Discuss possibility of isolation. Reinforce need for support system.	Embarrassing behavior, the demands of care, etc. may cause withdrawal from social contact.
Provide positive feedback for efforts.	The belief that a single individual can meet all the needs of the client, increases the potential for physical/mental illness (caregiver role strain).
Support concerns generated by consideration/decision to place in extended-care facility.	Reassures individuals that they are doing as well as they can and encourages continued efforts.
Discuss ways for family/SO to remain involved in care if placement is made.	Constant care requirements may be more than can be managed by SO. Support is needed for this difficult, guilt-producing decision, which may create a financial burden as well as family disruption/dissension.
	Remaining involved in care enhances relationship, well-being of client, and sense of control in difficult situation.

## **Collaborative**

Refer to local resources such as adult daycare (if available), respite care, homemaker services, AIDS support organizations.

Coping with this individual is a full-time, frustrating task. Respite/daycare may lighten the burden, reduce potential social isolation, and prevent family/caregiver burnout. AIDS organizations provide group support and family teaching, and promote research. Local groups provide a social outlet for sharing grief and promote problem-solving with such matters as financial/legal advice, home care, etc.

Refer to CPs: Dementia of the Alzheimer's Type; Major Depression regarding issues of self-care, urinary elimination, nutrition, sensory-perceptual alterations, health maintenance, home maintenance management, etc.