7. DEMENTIA

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Eight practice guidelines and six reviews provided the background material in developing quality indicators for dementia (Canadian Task Force on the Periodic Health Examination [CTFPHE], 1979; National Institutes of Health Consensus Development Conference [NIH], 1987; Organizing Committee, Canadian Consensus Conference on the Assessment of Dementia [CCCAD], 1991; American Academy of Family Physicians [AAFP], 1994; Quality Standards Subcommittee of the American Academy of Neurology [ANN], 1994; Agency for Health Care Policy and Research [AHCPR], 1996; U.S. Preventive Services Task Force [USPSTF], 1996; U.S. Department of Veterans Affairs and the University Health System Consortium [USDVAUHSC], 1996; Corey-Bloom et al., 1995; Siu, 1991; Cummings, 1995; Cummings and Benson, 1992; Winograd and Jarvik, 1986; Schneider and Tariot, 1994). We also performed MEDLINE searches of the medical literature from 1990 to 1996 to supplement these references.

IMPORTANCE

Dementia is the most common type of cognitive impairment seen in ambulatory and nursing home settings. It is characterized by an acquired, persistent impairment of intellectual function that includes significant losses in at least three of the following five areas: cognition, memory, language, visuospatial skills, and personality (Cummings and Benson, 1992). Most diagnostic criteria require that the patient have a memory impairment (USDVAUHSC, 1996). This impairment in intellectual abilities interferes with the person’s usual occupational and social functioning (AHCPR, 1996). While the prevalence of dementia among the U.S. adult population is five percent among persons aged 65 years, this prevalence doubles approximately every five years thereafter (Jorm et al., 1987). The prevalence of dementia also varies by health delivery setting, with higher rates among patients who are hospitalized or in long term care facilities.
Despite its high prevalence among older persons, dementia often goes unrecognized or misdiagnosed in its early stages. Clinicians fail to detect an estimated 21 to 72 percent of patients with dementia (Pinholt et al., 1987; Roca et al., 1984; World Health Organization, 1986; German et al., 1987; Callahan et al., 1995). Many health care professionals, as well as patients and family members, mistakenly view the early symptoms of dementia as inevitable consequences of aging (AHCPR, 1996).

Because demented persons are subject to impairments and disabilities in all domains of daily function (Winograd and Jarvik, 1986), care of the demented patient imposes an enormous psychosocial and economic burden on family and other caretakers. The annual cost of treating dementia has been estimated to be $113 billion (National Foundation for Brain Research, 1992).

Prevalence estimates of different causes of dementia vary widely by the population sampled and diagnostic criteria used. Most causes are irreversible. Alzheimer's disease accounts for about 50 percent of cases of dementia in North America (Cummings and Benson, 1992), with an additional ten to 20 percent attributed to vascular dementia (Heyman et al., 1991; Skoog et al., 1993; Aronson et al., 1991). Alcohol-related dementia, dementia due to Parkinson's disease, and normal-pressure hydrocephalus are other important causes of dementia (Larson et al., 1986). However, between 10 and 15 percent of dementia syndromes may be potentially reversible. The most common causes of "reversible" dementia are depression, use of certain drugs affecting mentation, and hypothyroidism (Larson et al., 1986; Clarfield, 1988).

SCREENING

Several task forces and expert panels have reviewed screening procedures for dementia and have, in general, not recommended routine screening (CTFPHE, 1979; NIH, 1987; CCCAD, 1991; AAFP, 1994; AAN, 1994; AHCPR, 1996; USPSTF, 1996; USDVAUHSC, 1996).

DIAGNOSIS

Detecting dementia before patients are severely impaired is important for several reasons: reversible causes of dementia may be
identified and treated; treatments to slow the progression of Alzheimer’s disease may be considered; measures can be taken to reduce the morbidity associated with dementia; and patients and their family members can anticipate and prepare for problems that will arise as the dementia progresses (USPSTF, 1996).

**History**

All the guidelines advise that persons suspected of having cognitive impairment should have a comprehensive history performed (CTFPHE, 1979; NIH, 1987; CCCAD, 1991; AAFP, 1994; AAN, 1994; AHCPR, 1996; USPSTF, 1996; USDVAUHSC, 1996). First, it is important to determine if the person’s cognitive abilities have declined from a previous level and if the decline is interfering with the patient’s usual activities (Indicator 1a and 1b). Providers should elicit information about symptoms that may indicate dementia including: a) difficulty learning and retaining new information; b) problems handling complex tasks (e.g., balancing a checkbook or preparing a meal); c) problems with reasoning (e.g., knowing what to do if the bathroom flooded); d) deficits in spatial ability and orientation (e.g., having trouble driving or navigating in familiar places); e) language difficulties (e.g., difficulty with word finding); and f) behavior changes (e.g., increased levels of suspiciousness or passivity).

In every case, an assessment should also look for delirium and depression and other treatable causes of cognitive impairment (Indicator 1e and 1f). In particular, the clinician should review both the prescription and non-prescription medications the patient may be taking as this may contribute to delirium and mimic dementia (Thompson, 1983; Larson et al., 1986; Clarfield, 1988) (Indicator 1c). Evidence of substance abuse (e.g., alcohol abuse or benzodiazepine abuse) should also be sought (Indicator 1d). In a study of the diagnostic evaluation of dementia among 200 elderly outpatients, drug toxicity was responsible for approximately ten percent of cognitive impairment, while depression was the cause in eight percent (Larson, 1986). Clarfield (1988) critically reviewed the diagnosis of dementia and found that 13 percent of 2,889 subjects were found to have potentially reversible causes of cognitive impairment. Of the 1,051 patients for whom follow-up
information was reported, eight percent had dementia that reversed partially and three percent completely. Depression was the etiologic factor of the apparent dementia in 26 percent of these cases, and drugs in 28 percent. Of note, dementia cannot be diagnosed if the changes are only present during a delirium or can be attributable to another mental disorder such as major depression or schizophrenia. Generally, reliable informant reports (e.g., family members, friends, neighbors, caregivers or employees) will be necessary to obtain complete information on the patient’s cognitive changes.

To establish the etiology of dementia symptoms, it is particularly important in the history to establish the chronicity of symptoms (date of onset, abrupt versus gradual) and the nature of progression (stepwise versus continuous decline, worsening versus fluctuating or improving) (AHCPR, 1996; USDVAUHSC, 1996) (Indicator 2). Asking these questions may help determine if the symptoms are due to multiple strokes (often a stepwise pattern of decline) versus Alzheimer’s disease (usually a progressive decline), and whether a delirium (abrupt onset, fluctuating course, and short duration) or depression is present (abrupt onset and short duration).

If the clinician notes that the patient has any symptoms suggestive of cognitive impairment, the eight guidelines recommend a brief neurological and mental status examination to assess the etiology of the impairment (Indicator 3). A physical examination can be useful to detect co-morbid medical conditions that may be exacerbating or causing the cognitive impairment, and to detect evidence of personal neglect (e.g., malnutrition, urinary incontinence).

Brief mental status tests can be used to: 1) develop a multidimensional clinical picture; 2) provide a baseline for monitoring the course of cognitive impairment over time; 3) reassess mental status in persons who have delirium or depression on initial evaluation; and, 4) document multiple cognitive impairments as required for the diagnosis of dementia (AHCPR, 1996). In a review of studies of diagnostic testing for dementia (Siu, 1991), four very brief screens had good predictive values for cognitive impairment: recall of three items (Folstein et al., 1975), the clock drawing test (Wolf-Klein et al., 1989), forward digit
span (Kokmen, 1987), and the serial sevens test (Folstein et al., 1975). Normal results on these tests markedly reduce the probability of dementia, while abnormal results increase the odds of dementia (Siu, 1991; Klein et al., 1985; Wolf-Klein et al., 1989).

A longer and commonly used instrument to screen for cognitive impairment is the Folstein Mini-Mental State Examination (Folstein et al., 1975). It is most useful in screening for moderate impairment in cognitive function and has good reliability and construct validity (Tombaugh et al., 1992). Interpretation of this score must include assessment of possible confounding factors that may affect the patient's performance, such as level of consciousness, formal education, and English language comprehension.

Persons suspected of having cognitive impairment should also be asked about their ability to perform their daily activities. Instrumental Activities of Daily Living (IADLs) include tasks that one needs to perform to live independently. These include such functions as taking medications, using the telephone, housekeeping, and transportation. When IADLs were administered to a group of community-dwelling persons over age 65, subjects who reported difficulty using the telephone, using public transportation, taking medications, or handling finances were 12 times more likely to be diagnosed with dementia (Barberger-Gateau et al., 1992).

**Laboratory Evaluation**

There is much overlap in the experts' recommendations regarding further laboratory evaluation of persons having abnormal mental status tests, depending upon the suspected etiology. The CCCAD recommends a complete blood count (CBC), thyroid function tests and serum electrolytes, calcium and glucose. The AAN, the USDVAUHSC, and the NIH Consensus Panel on Dementia recommend the addition of BUN/creatinine, liver function tests, serum vitamin B₁₂ level, and syphilis serology.

The AAN and the USDVAUHSC also recommend the following tests when clinical suspicion warrants them: sedimentation rate (to detect inflammatory disorders), serum folate (to detect folate deficiency in a person with megaloblastic anemia), HIV test (in persons with risk factors for HIV), chest x-ray (to detect severe lung disease that might
cause hypoxemia and secondary cognitive impairment or lung cancer with possible brain metastases), urinalysis (to detect urinary tract infection), 24 hour urine collection for heavy metals (to detect heavy metal toxicity), and toxicology screen (in persons suspected of substance abuse). These laboratory tests will detect anemia, hyper- or hypoparathyroidism, diabetes, renal failure, liver disease, thyroid disorders, vitamin B\textsubscript{12} deficiency and syphilitic infection that may be causing or contributing to the patient’s dementia.

Some observational data support the utility of selected laboratory tests in the evaluation of dementia. A study assessing the utility of standard blood tests in the evaluation of dementia (Larson et al., 1986) observed that five percent of 200 elderly outpatients with suspected dementia had metabolic abnormalities that may have caused or contributed to their cognitive impairment. These included hypothyroidism, hyponatremia, hyperparathyroidism and hypoglycemia. In Clarfield’s (1988) review of dementia diagnosis studies, metabolic causes were presumed to be the etiologic factor in 16 percent of potentially reversible cases. Persons who have abnormalities on any of these tests should have longitudinal follow-up to initiate interventions and ensure that such interventions are effective.

In accordance with these data, we recommend a quality indicator stating that a CBC, thyroid function tests and chemistry panel (including electrolytes, BUN, creatinine, calcium and glucose) be obtained in all patients suspected of having dementia (Indicator 4). These tests may occasionally be useful in diagnosing dementia and are more frequently helpful in identifying and treating medical conditions that complicate dementia (Larson et al., 1986). Testing for the e4 allele (for apolipoprotein E4) does not predict which individuals will get Alzheimer’s disease and it does not contribute to the routine evaluation of the patient with dementia (Civil et al., 1993).

**Neuroimaging**

As with blood tests, the USDVAUHSC does not recommend neuroimaging if the cause of dementia is apparent from the history, examination or laboratory studies. They recommend neuroimaging only in recent onset dementia patients with focal neurologic signs, atypical features, or
headaches (Indicator 5). The CCCAD also recommends cranial imaging if one or more of the following criteria are met:

a. age under 60 years;
b. use of anticoagulants or history of a bleeding disorder;
c. recent head trauma (i.e., if dementia started or worsened after head trauma in the last three to four months);
d. history of cancer, especially in sites that metastasize to the brain (e.g., lung, breast, renal cell, melanoma, GI tract);
e. unexplained neurologic symptoms (e.g., new onset of severe headache or seizures);
f. rapid (i.e., over one to two months) unexplained decline in cognition or function;
g. short duration of dementia (less than two years);
h. history of urinary incontinence and gait disorder early in the course of dementia (as may be found in normal pressure hydrocephalus);
i. any new localizing sign (e.g., hemiparesis or Babinski’s reflex);
and,
j. gait ataxia.

The CCCAD states that, in the absence of these symptoms and signs, cognitive impairment, especially if present for at least one to two years, would not likely be reversible and referral for CT scanning probably would not be indicated. However, they argue that neuroimaging should be considered in every patient with dementia based on the clinical presentation, and may facilitate identification of clinically unsuspected treatable conditions such as tumor, subdural hematomas, hydrocephalus and strokes. They make the point, however, that unanticipated detection of these conditions is uncommon, particularly when clinical evaluations are performed by experienced examiners. A recent review of the utility of CT or MRI in diagnosis of an intracranial lesion or multi-infarct dementia concludes that routinely obtaining imaging studies on all patients is unwarranted, given the poor yield, number of false-positive results, and the sometimes poor outcome of “treatable” lesions (Siu, 1991; Dietch, 1983; Martin, 1987).
Consistent with this literature, our proposed indicators do not require routine imaging for intracranial disease or multi-infarct dementia.

**Referral**

The CCCAD states that most patients with dementia can be assessed adequately by their primary care physicians. However, there are several reasons to consider referral to a geriatrician, geriatric psychiatrist, neurologist, geriatric psychologist or neuropsychologist: a) continuing uncertainty about the diagnosis after initial assessment and follow-up; b) request by the family or the patient for another opinion; c) the presence of significant depression, especially if it does not respond to treatment; d) possible industrial exposure to heavy metals; e) the need for help in patient’s management (e.g. if there are behavioral problems) or support of the caregiver, who may be under stress; f) the need to involve other health professionals (e.g. occupational therapists, social workers and neuropsychologists) in the evaluation or management; and g) when research studies into diagnosis or treatment are being carried out (CCCAD, 1991; ANN, 1994; AHCPR, 1996). The CCCAD suggests that patients with dementia not be referred to these specialists if the dementia has been present for many years and there are no problems in management, if the patient is expected to die soon from a coexisting condition or if risky or costly interventions would be inappropriate.

**Other Diagnostic Tests**

The AAN does not recommend a lumbar puncture as a routine study in evaluation of dementia. They state: “assuming no contraindications, a lumbar puncture should be performed when any of the following are present: metastatic cancer, suspicion of CNS infection, reactive serum syphilis serology, hydrocephalus, dementia in a person under age 55, a readily progressive or unusual dementia, immunosuppression, and suspicion of CNS vasculitis (particularly in patients with connective tissue diseases)” (AAN, 1994).

The AAN also does not recommend EEG as a routine study but they state it “may assist in distinguishing depression or delirium from
dementia and in evaluating for suspected encephalitis, Creutzfeld-Jacob disease, metabolic encephalopathy or seizures” (AAN, 1994).

**TREATMENT**

Many dementing illnesses are progressive, or remain stable after substantial irreversible impairment has occurred. Survival after the onset of dementia often spans a decade during which the patient undergoes a progressive loss of function and requires ongoing medical, family and community support. Cummings states that the management of demented persons has five major aspects: 1) treating the underlying disorder that is causing or contributing to the cognitive decline (e.g., vascular dementia, Parkinson’s disease, depression); 2) treating the cognitive deficit in selected patients with Alzheimer’s disease (e.g., tacrine); 3) addressing associated behavioral disturbances (e.g., depression, psychosis, agitation); 4) reducing the consequences of disability (e.g., treating infections, pressure sores, dehydration); and 5) addressing the needs of the caregiver (e.g., support groups, respite services, day care, legal and social work consultation) (Cummings, 1995).

Treatments to improve cognition in Alzheimer patients have been studied in randomized clinical trials. Drugs that increase brain levels of acetylcholine, such as tacrine and donepezil, have shown the most promise. Although several studies reported no benefit, the three largest trials suggested a significant but small benefit of tacrine in patients with mild to moderate dementia over six to 30 weeks (Gauthier et al., 1990; Schneider and Tariot, 1994; Farlow et al., 1992; Davis et al., 1992; Knapp et al., 1994). In one trial, the benefit of tacrine on cognitive test results was comparable to delaying disease progression by two years for responders, with an overall average of five months (Farlow et al., 1992). Use of tacrine is limited by high cost (over $100 per month), four times a day dosing, and frequently gastrointestinal side effects. Up to 25 percent of patients taking lower doses, and two-thirds of those on high doses, stopped therapy due to nausea, vomiting,

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1 Defined as an average Mini-Mental State Examination score of 16 to 19.
or elevated liver enzymes (Schneider and Tariot, 1994; Farlow et al., 1992; Davis et al., 1992; Knapp et al., 1994). The potential for liver toxicity requires that aminotransferase levels be monitored weekly for the first six months.

Donepezil (Aricept, 1996) was approved by the FDA in November 1996 for the treatment of patients with mild to moderate Alzheimer’s disease. This drug appears to be better tolerated and to have a better safety profile than tacrine. Use of donepezil has been associated with a delay in disease progression by six to eight months (Stern et al., 1994; Aricept, 1996; Rogers et al., 1995; Rogers et al., 1996). In contrast to tacrine, this drug has a long half-life and can be given once daily and requires no laboratory monitoring (Indicator 6).

Persons with vascular dementia should have risk factors for cerebrovascular disease (hypertension, smoking cessation, hypercholesterolemia) addressed (Meyer et al., 1986; Hachinski, 1992) (Indicators 8 and 9). However, the effect that addressing risk factors has on the progression of vascular dementia is not known.

Cummings, in his review of dementia, notes that behavioral symptoms associated with dementia often improve with non-pharmacological measures, such as avoiding situations that incite outbursts, developing patient-centered environments, and teaching behavior management strategies to family members and caregivers (Cummings, 1995) (Indicator 6). Generally, non-pharmacological approaches should be used before drugs to control behavior are initiated. When medication is used, the drug therapy should be guided by a specific diagnosis (e.g., psychotic symptoms) and choice of treatment target (e.g., improved night time sleep). As with all older patients, the starting doses should be smaller and doses should be increased more slowly than in younger adults. Clinicians and caregivers should be alert for potential side-effects of psychotropic agents, including sedation, confusion, and postural instability. Neuroleptics such as haloperidol or risperidone may also cause tremors, parkinsonism, akathisia, and tardive dyskinesia. The medication regimen should be reviewed regularly and drugs reduced or eliminated whenever possible. Long-acting sedatives should not be used in demented persons as they have been associated with an increased risk

Finally, care of the caregiver is an essential part of the management of dementia (Council on Scientific Affairs, 1993). It is stressful to provide care to demented persons and family members provide most of that care. Community resources such as home care, day care, respite care, and extended residential care may ameliorate the burden of care. Participation in a support group may help and some caregivers may require formal psychotherapy (Indicator 7).

The USDVAUHSC recommends referral to psychologists and specialized geropsychologists to assist with the management of cognitive deficits and the associated emotional and behavioral problems that often develop in the course of dementia (Indicator 6). They further assert that social workers should be involved in the management of all patients with dementia as they may help in identifying community resources available for patients and families. Support for this recommendation is provided by a recent randomized controlled trial testing the effectiveness of a family intervention to delay nursing home placement of patients with Alzheimer’s disease (Mittelman et al., 1996). The intervention consisted of providing caregivers in the treatment group with six sessions of individual and family counseling and requiring them to join support groups. Caregivers in the control group received the usual social services provided by the dementia clinic. The intervention succeeded in delaying the time that caregivers place patients with Alzheimer’s disease in nursing homes by a median of 329 days.

**FOLLOW-UP**

Persons who have memory complaints or difficulty with daily functioning, but who don’t meet criteria for dementia, should have mental and functional status tests repeated in 6 to 12 months (AHCPR, 1996) (Indicator 11). Among persons with dementia, periodic mental status tests may mark the course of the disease and assist in informing caregivers of expectant function. Abrupt changes in cognitive or functional status need to be evaluated for superimposed delirium
secondary to infection, myocardial infarction, stroke, depression or adverse drug reaction. Issues of safety will need to be evaluated on an ongoing basis. Although there are no formal recommendations about the frequency of routine follow-up of demented persons, it is advisable that demented persons be seen or contacted at least every six months.
REFERENCES


Archives of Internal Medicine 115: 122-132.

Alzheimer’s dementia in 85-year olds. New England Journal of Medicine 328: 
153-158.

Stern RG, Mohs RC, Davidson, et al. 1994. A longitudinal study of 
Alzheimer’s Disease measurement: Rate and predictors of cognitive 

Thompson TL II, Moran MG, and Nies AS. 1983. Psychotropic drug use in 

Tombaugh TN, and McIntyre NJ. 1992. The Mini-Mental State Examination: a 
comprehensive review. Journal of the American Geriatric Society 
40: 922-935.

US Department of Veterans Affairs and the University Health System 
Consortium. 1996. Dementia identification and assessment: 
guidelines for primary care practitioners. Technology Assessment 
Program, University HealthSystem Consortium; Washington, DC: 
Veterans Health Administration, U.S. Department of Veterans 
Affairs, Oak Brook, IL.

Preventative Services, 2nd ed. Baltimore: Williams & Wilkins.

Winograd C, and Jarvik LF. 1986. Physician management of the demented 

Screening for Alzheimer's disease by clock drawing. Journal of the 
American Geriatric Society 37: 730-734.

World Health Organization. 1986. Dementia in later life: research and 
action: report of a WHO scientific group on senile dementia. World 
Health Organization, Geneva.
**RECOMMENDED QUALITY INDICATORS FOR DEMENTIA**

The following indicators apply to men and women age 18 and older.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Quality of Evidence</th>
<th>Literature</th>
<th>Benefits</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. If a patient has any symptoms of cognitive impairment, all of the following information should be documented:</td>
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<td>a. Have the patient’s cognitive abilities declined from a previous level?</td>
<td>III</td>
<td>CTFP, 1979; NIH, 1987; CCCAD, 1991; AAFP, 1994; QSSAAN, 1994; AHCPR, 1996; USPSTF, 1996; USDVAUHSC, 1996.</td>
<td>Ensures patient’s cognitive deficits are not due to a lifelong condition such as mental retardation.</td>
<td>Recommended by all the consensus developers and guidelines.</td>
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<td>b. Do the patient’s symptoms of cognitive impairment interfere with daily functioning?</td>
<td>III</td>
<td></td>
<td>Improve functional status.</td>
<td>Recommended by all the consensus developers and guidelines. Assists in determining the extent of the cognitive impairment.</td>
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<td>c. Medications being taken (both prescription and non-prescription);</td>
<td>II-2</td>
<td>Larson, 1986; Clarfield, 1988</td>
<td>Limit toxicities of medication.</td>
<td>Many medications may contribute to delirium and mimic dementia. Two case series observed between 3-10% of cases of dementia were actually caused by drug toxicity. Alcohol and sedative-hypnotics may contribute to delirium and mimic dementia. Two case series observed alcohol and medications are major cause of reversible dementia.</td>
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<td>d. The use of alcohol or other substances that may affect cognition;</td>
<td>II-2</td>
<td>Larson, 1986; Clarfield, 1988</td>
<td>Limit contribution of alcohol to dementia.</td>
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<td>Indicator</td>
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<td>e. The presence or absence of delirium;</td>
<td>II-2, III</td>
<td>CTFP, 1979; NIH, 1987; CCCAD, 1991; AAFP, 1994; QSSAAN, 1994; AHCPR, 1996; USPSTF, 1996; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996; Larson, 1986; Clarfiled, 1988.</td>
<td>Limit symptoms of dementia by treating delirium.</td>
<td>Symptoms of delirium may mimic dementia. Two case series observed that delirium was responsible for 3-10% cases of diagnosed dementia.</td>
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<tr>
<td>f. The presence or absence of depression.</td>
<td>II-2, III</td>
<td></td>
<td>Limit symptoms of dementia by treating depression.</td>
<td>Two case series observed between 3-8% of cases of dementia were actually due to depression.</td>
</tr>
<tr>
<td>2. All of the following information should be documented for patients with a diagnosis of dementia:</td>
<td>III</td>
<td>AHCPR, 1996; USDVAUHSC, 1996</td>
<td>Identify potentially treatable causes of dementia.</td>
<td>Recommended by the AHCPR and the U.S. Department of Veterans Affairs and the University Health System Consortium. May help determine if the dementia is due to multiple strokes vs. Alzheimer's disease or whether a delirium or depression is causing symptoms.</td>
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<td>a. The chronicity of symptoms (e.g. noted one week ago vs. 2 years ago, abrupt vs. gradual);</td>
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<td>b. The nature of progression (e.g., worsening, fluctuating, stable).</td>
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<td>3. If a patient has any new symptoms of cognitive impairment, the health care provider should offer a neurological examination (including a mental status examination).</td>
<td>III</td>
<td>CTFP, 1979; NIH, 1987; CCCAD, 1991; AAFP, 1994; QSSAAN, 1994; AHCP, 1996; USPSTF, 1996; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996</td>
<td>Identify potentially treatable causes of cognitive impairment. Limit danger to self and environment by diagnosing severity of impairments.</td>
<td>Recommended by all consensus and guideline developers. Neurological examination and mental status exam may assist in determining etiology and severity of dementia.</td>
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<td>4. If patient has any new symptoms of cognitive impairment, the following blood tests should be offered within 30 days: a. CBC (if not ordered in last month), b. Chemistry panel (electrolytes, BUN, creatinine, bicarbonate, chloride, glucose, calcium) if not ordered in last 2 weeks; c. TSH if not ordered in last 6 months.</td>
<td>II-2, III</td>
<td>CCCAD, 1991; QSSAAN, 1994; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996; Larson, 1986; Clarfield, 1988</td>
<td>Identify potentially treatable contributors to dementia.</td>
<td>Frequently helpful in identifying and treating medical conditions that complicate dementia. Two case series observed that metabolic abnormalities were causing or contributing to cognitive impairment in 2-5% of demented persons. Recommended by three consensus developers.</td>
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<td>5. If a patient has any new symptoms of cognitive impairment,(^1) a head CT or MRI should be offered within 30 days if one or more of the following criteria is met: a. onset of dementia in the past 2 years; b. head trauma in the past 2 years; c. onset of seizures in the past 2 years; d. gait disorder in the past 2 years; e. dementia with focal neurologic findings;(^2) f. dementia and headache.</td>
<td>III</td>
<td>CCCAD, 1991; QSSAAN, 1994; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996</td>
<td>Identify potentially treatable causes of cognitive impairment.</td>
<td>These are indicators of potentially treatable conditions. Recommended by three consensus developers</td>
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**TREATMENT**

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<tr>
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<tr>
<td>6. Patients with a diagnosis of dementia and who are having behavioral problems(^3) should be offered at least one of the following interventions: • counseling the caregivers about non-pharmacological measures(^4) to control symptoms; • providing pharmacological means(^5) to control symptoms; • referral to specialists(^6) who may assist with symptoms.</td>
<td>III</td>
<td>CCCAD, 1991; QSSAAN, 1994; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996; Cummings, 1995.</td>
<td>Improve the health and functioning of persons with dementia.</td>
<td>Recommended by three of the consensus developers.</td>
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<tr>
<td>7. Caregivers of demented persons should be asked about their need for support services.</td>
<td>I</td>
<td>Council on Scientific Affairs, 1993; Mittelman, 1996; U.S. Department of Veterans Affairs and the University Health System Consortium, 1996</td>
<td>Improve health and functioning of persons with dementia and their caregivers.</td>
<td>A randomized controlled trial of an intense social intervention targeted to spouses of persons with Alzheimer's disease delayed the time they placed demented persons in nursing homes by a median of 329 days.</td>
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</table>
For patients diagnosed with dementia, the presence or absence of all of the following risk factors for vascular etiology should be documented:

- a. hypertension;
- b. smoking;
- c. hypercholesterolemia.

Prevent CVAs. Amelioration of risk factors for cerebrovascular disease may prevent further strokes. It is unknown whether addressing risk factors for vascular dementia affects its progression.

Patients with vascular or multi-infarct dementia should be offered aspirin, unless active peptic ulcer disease or aspirin intolerance is noted.

Prevent further CVAs.

Persons with dementia should not be taking long-acting sedatives.

Prevent medication toxicities. Prevent falls and fractures. Long-acting sedatives increase risk for adverse CNS effects (i.e., delirium, ataxia) and risks for hip fracture in older persons, particularly those persons with an underlying dementia. Pomara et al. demonstrated increased CNS depressant effect of diazepam in elderly. Greenblatt et al noted that excess CNS effects of flurazepam were more common in older hospitalized patients. Ray, et al.0 found association between long acting benzodiazepines and the occurrence of hip fractures in older persons.

Patients with symptoms of cognitive impairment who do not receive a diagnosis of dementia should have documented that the provider inquired again about those symptoms within 12 months of first presentation.

Improve quality of life for persons with dementia and their caregivers. May permit early identification of persons with dementia and allow them to plan for future. Recommended by AHCPR.
a. Activities of Daily Living (ADLs): bathing, dressing, feeding oneself, urinary continence
b. Instrumental Activities of Daily Living (IADLs): taking medications, doing housework, taking care of finances, using the telephone, preparing meals, using transportation
c. Advanced Activities of Daily Living (AADLs): working, doing hobbies, social events, sports

3 Focal neurologic findings include asymmetry in any of the following: deep tendon reflexes, Babinsky reflexes, motor strength, cranial nerves, and visual fields.
4 Behavioral problems: aggression, withdrawal, paranoia, hallucinations (seeing objects that are not there, like deceased parents), or delusions (believing things that are not real, such as spouse's infidelity).
5 Non-pharmacologic measures: (a) avoiding situations that incite behavioral problems; (b) using a calm soothing tone; (c) repeating messages frequently; (d) avoiding changes in the demented person's routine; (e) trying to structure the home environment to allow unrestricted walking or pacing.
6 Pharmacologic means include any of the following: (a) antipsychotics, including haloperidol, fluphenazine, thioridazine, molindone, thiothixene, mellaril, respirdol; (b) antidepressants, including fluoxetine, sertraline, paroxetine, nortriptyline, trazadone, desipramine, doxepin; (c) anti-anxiety drugs such as busprione, temazepam, lorazepam, oxazepam; (d) anti-seizure medications such as carbamazepine.
7 Specialists include: psychiatrists, neurologists, psychologists, registered occupational therapists, mental health nurse practitioners, and social service providers.

Quality of Evidence Codes

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