

Screening for Dementia in a Primary Care Practice

By Susan McPherson, Ph.D., A.B.P.P., L.P., and George Schoepfoerster, M.D.

■ Dementia is a common condition of the elderly; yet it often is unrecognized by primary care providers. This article presents a compelling argument for screening for dementia in a primary care setting. It also provides a protocol for effective screening, instructions on how to use it, and steps to follow if the screening indicates the patient may have dementia.

Approximately 5.3 million people in the United States are living with Alzheimer's disease (AD).¹ Alzheimer's disease occurs in almost 50% of individuals older than 85 years of age, making it one of the most common conditions in the elderly. By 2050, an estimated 11 million to 16 million people 65 years of age and older in the United States will have the disease unless science finds a way to prevent or treat it.¹ Although many forms of dementia exist (Table), AD is the No. 1 cause of dementia in the elderly.

Recognizing that Minnesota's population is aging, the Legislature passed a bill in 2009 charging the Minnesota Department of Health with assessing the state's capacity for dealing with the anticipated onslaught of people who will be affected by Alzheimer's disease. Department of Health officials convened the Alzheimer's Disease Working Group (ADWG), which met during 2009 and 2010 to study the issue. As members of that group began looking at the state's health care resources, it became clear that primary care needed to be one area of focus. A subgroup of the ADWG was formed to explore screening for dementia in primary care. Members of that

group, which included neurologists, primary care physicians, neuropsychologists, nurses, and representatives from the Alzheimer's Association-Minnesota and North Dakota Chapter, considered evidence that early identification of dementia led to higher-quality care and better outcomes. They also reviewed studies that showed that primary care providers often fail to detect dementia.

This article presents the work of that subgroup. It discusses the rationale for early dementia screening and introduces a protocol designed to help busy primary care physicians detect early signs of cognitive change in their patients.

What is Dementia?

Dementia is a constellation of symptoms related to a decline in cognitive functioning. It has a number of causes. Dementia can manifest as deficiencies in multiple areas of mental functioning including language, memory, perception, emotional behavior or personality, and cognitive processing (ie, performing calculations, abstract thinking, or judgment). A diagnosis of dementia is made when the following DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition) criteria are met:

1. The patient *must* have memory im-



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Date of release: January 6, 2012

Estimated time of completion: 30 minutes

Educational objectives:

- 1) To understand the importance of screening for dementia in a primary care setting.
- 2) To be able to use the new protocol for screening for early stage dementia.

Target audience: Primary care physicians

Authors

Susan McPherson, Ph.D., A.B.P.P., L.P., is an associate professor of neurology at the University of Minnesota and a neuropsychologist for the N. Bud Grossman Center for Memory Research and Care. George Schoepfoerster, M.D., is a geriatrician working with Geriatric Services of Minnesota in St. Cloud. Both were members of the state's Alzheimer's Disease Working Group and continue to explore how to provide better care to those with dementia through the Prepare Minnesota for Alzheimer's Disease 2020 (PMA 2020) collaboration.

Disclosures

Faculty have indicated they have no relationship which, in the context of their presentations, could be perceived as a potential conflict of interest.

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pairment. Specifically, a person must have lost his or her ability to make new memories. That loss is often measured in cognitive screening tests by the lack of ability to recall three items in five minutes or in a formal neuropsychological evaluation.

2. In addition, the patient must have one or more of the following cognitive disturbances:
 - Agnosia—difficulty recognizing or identifying familiar objects or other sensory cues, despite intact sensory function. In the case of AD, agnosia refers to an inability to provide the correct name of a familiar object;
 - Aphasia—disturbance of comprehension or expression of language. Patients with AD have difficulty primarily with word-finding;
 - Apraxia—difficulty performing familiar motor activities, despite a desire to do so, while still having intact motor function. Persons with AD often have a construction apraxia marked by difficulty copying drawings or putting together puzzles; and
 - Disturbance in executive functioning, which includes planning, organizing, sequencing, and abstracting.
3. Finally, the patient’s loss of mental function must be severe enough to affect daily life, and their mental functioning must have declined since the last screening.

The symptoms of dementia also can be caused by treatable conditions such as thyroid disorders, nutritional deficiencies, side effects of anticholinergic medications, and normal-pressure hydrocephalus. Identifying and treating those causes should be the initial task of any primary care physician. When no other treatable cause is present, dementia becomes the primary concern.

Why Screen for Dementia?

Screening is the first step toward providing high-quality care for people with Alzheimer’s disease and other forms of dementia.

Identifying dementia early in its course is critical for a number of reasons. Having a formal diagnosis helps explain

Table
Types of Dementia

Type of Dementia	Distinguishing Characteristics
Mild cognitive impairment (MCI)	Associated with memory difficulties or one of the other four cognitive disturbances that are part of a dementia diagnosis. These symptoms do not affect daily life. They may or may not indicate an early stage of dementia.
Alzheimer’s disease	Most common type of dementia; it accounts for an estimated 60% to 80% of cases. Difficulty remembering names and recent events is often an early clinical symptom; apathy and depression also may be early symptoms. Later symptoms include impaired judgment, disorientation, confusion, behavior changes, and difficulty speaking, swallowing, and walking. Hallmark abnormalities are deposits of the protein fragment beta-amyloid (plaques) and twisted strands of the protein tau (tangles).
Vascular dementia	Impairment is caused by decreased blood flow to parts of the brain, often due to a series of small strokes that block arteries. This is relatively rare and accounts for only 6% to 10% of dementias of old age. Symptoms often overlap with those of Alzheimer’s, although memory may not be as seriously affected.
Dementia with Lewy bodies/ Parkinson’s dementia	The second most common type of dementia, accounting for 30% of dementias. Hallmark symptoms include two of the following: 1) visual hallucinations, 2) frequent fluctuations in cognition, 3) parkinsonism. Pattern of decline is more rapid than in Alzheimer’s. Hallmarks include Lewy bodies (abnormal deposits of the protein alpha-synuclein) that form inside nerve cells in the brain. Many people who have Parkinson’s disease also develop dementia. Lewy Bodies dementia may exist with or without Parkinson’s disease. If it accompanies Parkinson’s, it may occur in either the early or late stage of the disease.
Frontotemporal dementia	The third most common form of dementia primarily affects individuals in their 50s and 60s. Nerve cells in the front and side regions of the brain are especially affected. Previously known as Pick’s disease, although Pick bodies are only present in 25% of cases. Distinguishing symptoms include EITHER 1) marked changes in personality and behavior, or 2) a language variant marked by difficulty in speech production (stuttering) or difficulty finding the right words when speaking (semantic dementia).
Creutzfeldt-Jakob disease	Fatal disorder that impairs memory and coordination and causes behavior changes. Caused by the misfolding of prion protein throughout the brain. A variant of Creutzfeldt-Jakob disease is believed to be caused by consumption of products from cattle affected by mad cow disease.
Normal-pressure hydrocephalus	Caused by the buildup of fluid in the brain. Symptoms include difficulty walking, memory loss, and urinary incontinence. Can sometimes be corrected with surgical installation of a shunt in the brain to drain excess fluid, particularly when discovered early.
Dementia with Huntington’s disease	Part of an autosomal dominant inherited disorder associated with twitches, muscle spasms, difficulty with balance/coordination, and personality changes.
Cognitive decline from Korsakoff’s syndrome and traumatic brain injury	Variable manifestations. May not meet criteria of a dementia. Best assessed with neuropsychological testing.

Source: Adapted from 2011 Alzheimer’s Disease Facts and Figures

symptoms and cognitive problems that were distressing because the cause was unknown.^{2,3} It also enables patients to plan for their future before cognitive decline begins to interfere with their judgment and reasoning.

In addition, early identification leads to earlier treatment. Research suggests that some of the medications currently available for AD (in particular, cholinesterase inhibitors) are most beneficial when given during the early stages when the patient exhibits only mild symptoms.⁵ Studies show that placing patients on such medications can slow the rate of functional decline by approximately one year.⁶ Sustained cognition is not the only benefit to using medication. A study by Holmes and colleagues found that patients with AD who were treated with donepezil exhibited improvement in neuropsychiatric symptoms as compared with patients on placebo.⁷ Lopez and colleagues observed patients on both a cholinesterase inhibitor and memantine (n-methyl-d-aspartate receptor modulator) and found those patients were more than seven times less likely to go to a nursing home than patients on a cholinesterase inhibitor alone.⁸ These authors noted that although these medications do not delay mortality, their use does increase functional ability.

Early identification also helps patients avoid situations that can cause harm such as not taking medications on time or in the right quantity, which can lead to an exacerbation of other medical conditions; making poor financial decisions; falling; or getting lost while driving. It also helps providers make sure the patient is getting the treatment they need for their other conditions.

Finally, early identification may be cost-effective. Alzheimer's disease is the third most costly disease in the United States, following cardiac disease and cancer.⁹ Medicare beneficiaries with AD incur costs that are approximately 60% higher than those of persons without AD, possibly because of higher costs associated with caregiving.^{10,11} Early identification and use of both medical and nonmedical treatments to slow the course of the disease

coupled with interventions that support caregivers will reduce the risk of nursing home placement, thereby lowering costs.¹² In addition, use of cholinesterase inhibitors has been shown to decrease the overall cost of treatment by improving cognition and daily functioning.¹³

A Simple Way to Screen for Dementia

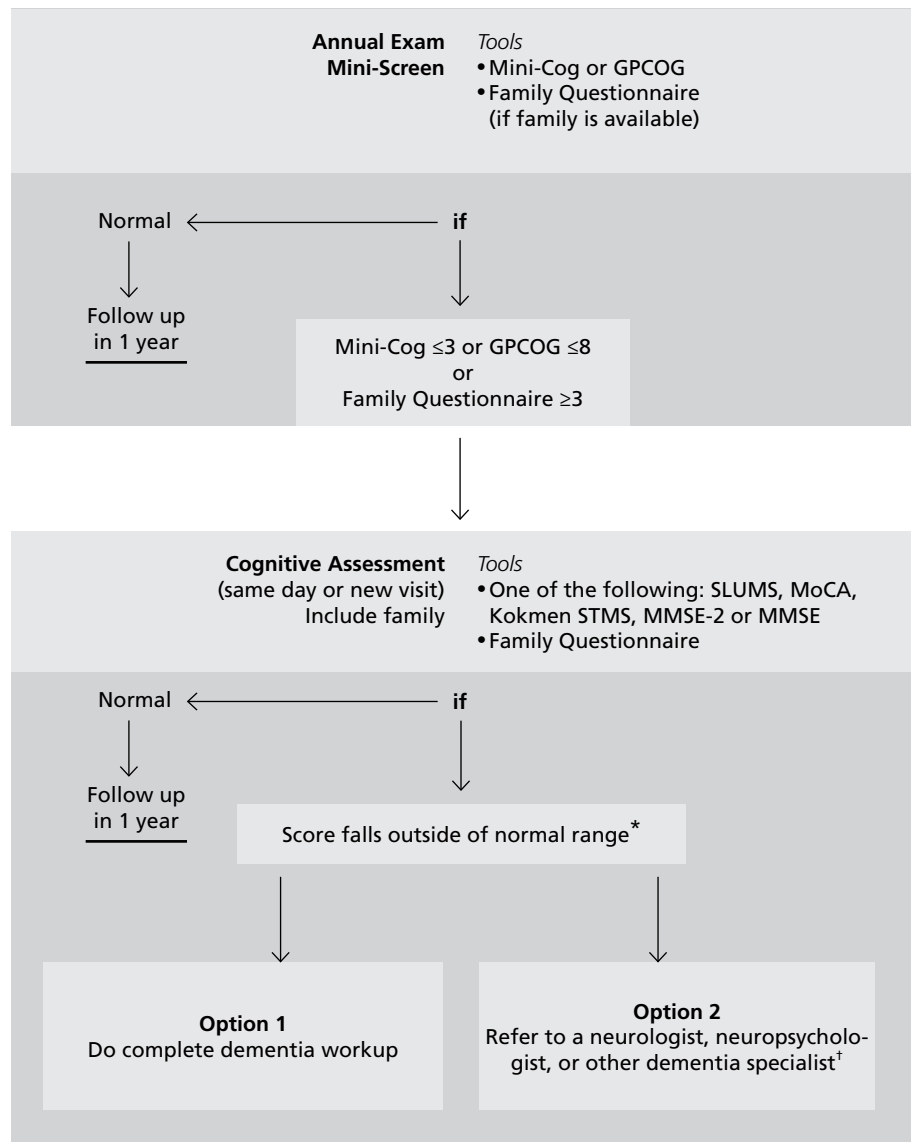
Although the reasons for early identification of dementia are compelling, research

has shown that primary care physicians fail to diagnose mild to moderate dementia at least 50% of the time.^{14,15} This may be because the majority of people in the early stages of AD are conversant and socially appropriate. Unless a formal mental status examination is conducted, the disease easily can go undetected during a routine office visit.

Another issue encountered by primary care physicians is the lack of guidance for assessing cognition. Physicians

Figure 1

Protocol for Cognitive Impairment Screening



* Normal Ranges: SLUMS = 27-30 (HS education); MoCA = 26-30 (HS education); Kokmen STMS = 29-38; MMSE/MMSE-2 = 27-30; Family Questionnaire ≤2

† Neuropsychological evaluation is most helpful for differential diagnosis, determining nature and severity of cognitive functioning, and the development of an appropriate treatment plan. Testing is typically maximally beneficial in the following score ranges: SLUMS = 19-27; MoCA = 19-27; Kokmen STMS = 19-33; MMSE/MMSE-2 = 18-28

have typically relied on either direct observation or information provided by family members when assessing a person's cognitive function. Given these considerations, the Minnesota Working Group decided to develop an algorithm that could help physicians detect the early signs of cognitive changes associated with dementia. One of the goals was to create a method for screening that could be done in a primary care office that would place minimal burden on physicians and other staff. (Dementia screening should become even more routine in the future, given that Medicare now pays for an annual wellness visit and requires that patients be screened for cognitive changes.)

The group reviewed a number of dementia screening tools and chose several to include in the protocol. The tools selected were based on sound psychometric properties. All are easily administered, with training, by a nurse or medical assistant. The screening algorithm is presented in Figure 1.

Because a dementia diagnosis requires a decline from a previous level of functioning, screening for a measurable and reproducible baseline level of cognitive function should be done during the patient's annual wellness visit. As cognitive screening is now a required portion of the annual Medicare exam, we recommend that it begin at age 65. It should be repeated annually. In addition, screening should occur whenever concerns about cognitive function are raised by the patient or his or her family members.

■ The Screening Protocol

The first step is to perform a preliminary screening. The Working Group recommended using either the Mini-Cog¹⁶ or the General Practitioner Assessment of Cognition (www.gpcog.com.au).¹⁷ Both are rapid screening tools for memory loss that can be administered by a nurse or medical assistant while taking the patient's vital signs.

The Mini-Cog asks the patient to remember three words. Immediately following the presentation of the words, the patient is asked to draw the face of a clock

and set the hands at "11:10." After they draw the clock, the patient is asked to recall the three words. One point is awarded for each word recalled. The patient receives two points if all the numbers on the clock are present and evenly spaced and the hands are set at the 11 and 2 positions. No points are awarded if neither hand is set correctly or if numbers are missing or unevenly spaced.

If the patient brings a family member to the visit, the physician may want to ask for their input as well. The National Chronic Care Consortium and the Alzheimer's Association's Family Questionnaire is one tool that can be used to get the caregiver's take on a patient's cognitive functioning (Figure 2). The questionnaire asks six questions of caregivers who have regular contact with the patient. Questions are scored as follows:

- Not at all = 0
- Sometimes = 1
- Frequently = 2

A score greater than 3 suggests the need for additional evaluation. If any of the initial screening tools (the Mini-Cog, GPCOG, or Family Questionnaire) indi-

cates that the patient may have memory loss, a second cognitive assessment that increases the testing specificity should be performed at the end of the visit. Physicians can introduce the need for a second screening by telling the patient that the first one suggested possible memory changes and that it would be helpful to ask a few more questions.

A number of tools can be used for this additional assessment. All tests chosen for the protocol take 10 to 15 minutes to administer, and all have similar psychometric properties as. None are meant to replace a thorough evaluation. The tools chosen include the Mini Mental State Examination (MMSE), available through Psychological Assessment Resources (www.parinc.com);¹⁸ the Montreal Cognitive Assessment (MoCA), www.mocatest.org;¹⁹ the Kokmen Short Test of Mental Status;²⁰ and the St. Louis University Mental Status (SLUMS) (http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam_05.pdf).²¹

If the second screen is positive, the next step is to do a complete dementia workup or refer the patient to a demen-

Figure 2

The Family Questionnaire

In your opinion does _____ have problems with any of the following?

Please circle the answer:

1. Repeating or asking the same thing over and over?	Not at all	Sometimes	Frequently	Does not apply
2. Remembering appointments, family occasions, holidays?	Not at all	Sometimes	Frequently	Does not apply
3. Writing checks, paying bills, balancing the checkbook?	Not at all	Sometimes	Frequently	Does not apply
4. Shopping independently (e.g. for clothing or groceries)?	Not at all	Sometimes	Frequently	Does not apply
5. Taking medications according to the instructions?	Not at all	Sometimes	Frequently	Does not apply
6. Getting lost while walking or driving in familiar places?	Not at all	Sometimes	Frequently	Does not apply

What is your relationship to the older adult? _____
(spouse, son, daughter, brother, sister, grandchild, friend, etc.)

Source: Alzheimer's Association and the National Chronic Care Consortium.

tia specialist (a neurologist, geriatric psychiatrist, or geriatrician, for example). Additional testing by the primary care physician might include laboratory tests (CBC, B12, folate, thyroid), screening for substance abuse or medication mismanagement, and assessment for depression or other forms of mental illness. Referral to a neuropsychologist may be warranted for additional cognitive testing, and a CT or MRI scan of the brain might be ordered. Regardless of who completes the evaluation, it is important that an accurate diagnosis is made and that the type of dementia is identified.

Once the Diagnosis is Made

As with any other degenerative disease, the first thing to do is to inform the patient and his or her family of the diagnosis. Knowing that the patient has memory loss or difficulties with cognition can help the patient, the family, and the physician make important care decisions such as having a family member attend appointments and having a family member or visiting nurse assist with medication management and compliance. A referral to the Alzheimer's Association (800-272-3900 or www.alz.org) can be helpful for both the patient and caregiver, no matter the type of dementia the patient has. The Alzheimer's Association offers free information on many aspects of dementia including the most common types, advice for dealing with behavioral changes, support groups for caregivers, as well as information about respite services, adult day care, legal and financial planning services, and programs to keep people safe. For individuals with young-onset disease (onset before age 65) the association has "meet-up" groups and a mentoring program, which can help the patient better navigate the disease.

Summary

Dementia is a common condition in the elderly. Early detection allows for early treatment as well as better control of comorbid conditions; it also ensures that patients and their families have time to make plans and adjust to the inevitable changes that will accompany the disease. Being

diagnosed with dementia changes everything—for the patient, the patient's family, and their health care providers. Screening for the disease in its early stage can be the first step in making a difference in the care patients receive and in their quality of life.

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Contact Jocelyn Cox at 612-623-2880 or jcox@mnmed.org