Psychiatric Care of the Older Adult
An Overview for Primary Care

Shaune DeMers, MD*, Kyl Dinsio, MD, Whitney Carlson, MD

KEYWORDS
- Geriatric patients
- Primary care
- Delirium
- Dementia
- Depression
- Substance abuse
- Alcohol misuse
- Caregivers

KEY POINTS
- Suspect delirium in any acute mental status change. Polypharmacy, medications, metabolic derangements, and infections are common causes for delirium.
- Dementia is a common and increasingly frequent diagnosis made in primary care settings. A structured approach combining history from patients, a collateral source, and bedside cognitive testing will usually establish a diagnosis.
- Depression is a common comorbidity that has negative impacts on health status and quality of life. Depression treatment should be tailored to the individual patient and treatment continued until remission is achieved.
- Although alcohol and substance misuse is less common among older adults, the prevalence is increasing. Older patients with changes in mood or cognition should be screened for alcohol and drug problems, particularly prescription medication overuse.
- Caregivers for older patients are usually a spouse or adult children and suffer significant morbidity. The primary care provider is often in the best position to assist caregivers with their own stress and to provide direction for more assistance.

INTRODUCTION: APPROACH TO OLDER ADULT PATIENTS
Primary care providers (PCPs) in the United States will be devoting increasing time to the management of geriatric patients. Between 2012 and 2050, the number of persons older than 65 years is expected to increase dramatically, from 43.1 million to 88.5 million.1 This increase is a motivator for recent calls for an expansion of the primary care workforce by 52,000 physicians, with recognition that the numbers of geriatric specialists will not be sufficient to meet the demand.2 In fact, the number of geriatric

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internists and psychiatrists is expected to remain stable or even decline in the next decades.\(^3\)

Older adults are in many ways similar to their younger counterparts, but important differences are highlighted in this overview as we consider the case of Mr Q (Box 1). Differential diagnoses for his presentation will allow us to review the most common psychiatric problems encountered in the primary care setting (delirium, dementia, depression, and substance misuse) and to discuss another critical issue, caregiver health and well-being.

**DELIRIUM**

Mr Q could be suffering from delirium. Most delirious patients are located in hospitalized or intensive care unit (ICU) settings, making it less common in primary care offices. However, although the base rate for delirium in outpatient settings is low (1%–2%), it increases dramatically with increasing age, increasing to 14% among individuals older than 85 years living in the community.\(^4,5\) Primary care doctors are additionally likely to encounter an acute delirium in nursing home or end-of-life patients where prevalence increases to 60% and more than 80%, respectively.\(^5\)

Delirium is an acute confusional state, characterized by deficits in attention, level of consciousness, orientation, memory, language, and ability to communicate and visual hallucinations or paranoia (Box 2). It is an abrupt change in mental status that is always driven by an underlying medical cause. The Confusion Assessment Method is an easy-to-use screening tool that has been validated for the detection of delirium.\(^6,7\)

The evolution of a delirium arises from some underlying vulnerability in patients combined with an acute medical insult or medication effect (Box 3). Older patients with dementia are particularly at risk for the development of a delirium, and the clinical picture of a delirium superimposed on top of dementia is quite common.\(^8\) In elderly patients, even relatively minor medical disturbances, such as a urinary tract infection, mild dehydration, or even constipation, can cause a delirium. Other common causes are medications (particularly polypharmacy or postanesthesia), infections, and cardiac or cerebrovascular events.

Delirium is differentiated from dementia in that its onset is an acute change from the person’s baseline. The time course of development of a delirium is hours to days, whereas in dementia it is months to years. The presence of a delirium necessitates an investigation into the underlying medical problems that are causing the change in mental status; often there are multiple contributing causes. In all cases, the
treatment of a delirium begins with treatment of the underlying disorder or disturbance. This treatment will typically involve correction of the metabolic or electrolyte disturbance, antibiotics for an infection, discontinuing problematic medications, maintaining adequate nutrition and hydration status, and decreasing functional deconditioning through early mobilization and physical therapy. Even with adequate

<table>
<thead>
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<th>Box 2</th>
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<td>Clinical features of delirium</td>
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</table>

- Disturbance in attention and awareness
  - Reduced ability to direct, focus, sustain, or shift attention
  - Reduced awareness and orientation to the environment

- Abrupt onset
  - Disturbance develops abruptly, over the course of hours or days
  - Disturbance represents a change from baseline attention, awareness, and cognitive abilities

- Cognitive deficits
  - Additional impairments in functions of memory, orientation, language
  - Disorganized and incomprehensible speech or rambling and incoherent conversation

- Alterations in levels of consciousness
  - Difficulty maintaining normal alertness for even brief interactions, falls asleep during conversation
  - Clouding of consciousness, with reduced clarity of awareness of the surrounding environment

- Fluctuating course throughout the day
  - Symptoms come and go or increase/decrease in severity over course of a day
  - Lucid intervals sometimes present

- Alterations in sleep-wake cycles
  - Daytime sleepiness, nighttime agitation, difficulty falling asleep, excessive sleepiness throughout the day, or wakefulness throughout the night
  - Complete reversal of the day-night, sleep-wake cycle

- Psychomotor disturbances
  - Hyperactivity marked by agitation, vigilance, and even violence
  - Hypoactive marked by lethargy with markedly decrease level of motor activity
  - Combination of hyperactive and hypoactive

- Psychotic disturbances
  - Illusions or hallucinations (typically visual)
  - Paranoid ideation, fear, or concern for safety

- Emotional disturbances
  - Frequent and frequently shifting expressions of extreme emotions, including anxiety, fear, depression, irritability, anger, apathy, or euphoria
  - May manifest behaviorally as calling out, screaming, cursing, muttering, moaning, or making other noises

treatment, delirium may persist for weeks in many patients; some patients will not return to their prior cognitive baseline.\textsuperscript{9–12}

**DEMENTIA**

The diagnosis and management of dementia in elderly persons is a common task and growing concern for PCPs. Recent epidemiologic data estimate that 13.9\% of American adults older than 70 years have some form of dementia, most commonly caused by Alzheimer disease (AD).\textsuperscript{13} This number continues to increase with age, composing 30\% of 85 year olds.\textsuperscript{14} In raw numbers, more than 5 million people in the United States currently have AD, and that number is expected to increase to more than 7 million by 2025.\textsuperscript{15,16} Despite the striking prevalence of dementia in the community, PCPs continue to struggle with recognition, diagnosis, and documentation of cognitive impairment.\textsuperscript{17}

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**Box 3**

**Predisposing and precipitating factors for delirium**

**Predisposing factors**
- Older age
- Dementia diagnosis and severity
- Polypharmacy
- Alcoholism
- Immobility
- Hip fracture
- Dehydration and poor nutritional status
- Functional dependence
- Severity of physical illness
- Stroke
- Metabolic abnormalities
- Visual and hearing impairments
- Anemia

**Precipitating factors**
- Infections (eg, pneumonia, urinary tract infection, cellulitis)
- Electrolyte disturbances (dehydration, hyponatremia/hypernatremia, or uremia)
- Medication (particularly drugs with anticholinergic, sedative, or psychoactive effects)
- Neurologic insult (stroke, seizure, hemorrhage)
- Hypoxia
- Alcohol withdrawal
- Surgery and exposure to anesthesia
- ICU admission
- Sleep deprivation

If Mr Q’s confusion does not have the acute onset or inattention consistent with delirium, then an investigation into dementia would be warranted. The chief feature suggestive of dementia is acquired cognitive impairment, usually in the domains of new learning and memory, severe enough to cause a decline in independent functioning. In dementia, memory impairment is observed in conjunction with deficits in at least one other cognitive domain. These deficits can include aphasia (difficulty understanding or producing speech), apraxia (difficulty performing tasks despite intact motor function), agnosia (difficulty with recognizing or naming familiar items), and executive dysfunction (inability to plan or organize complex tasks or make logical decisions). In the evaluation, it is critical to determine that the difficulties are related to actual cognitive loss rather than attributable to motor or sensory deficits or to an acute delirium. Unlike the acute nature of delirium, the development of a dementia is generally a subacute (months–years) process and represents a clear decline from a prior level of functioning in life.

Evaluation for dementia begins with a detailed history from both patients and at least one other informant. Individuals with suspected dementia do not often self-present for medical evaluation; concern by caregivers or family members usually brings individuals to attention. Lee and colleagues describe a useful, structured approach for evaluating memory difficulties in primary care (Fig. 1).

History taking should focus on the time course of symptoms and their evolution. Patients should be observed and asked about changes in language, such as repetitive questioning, persistent word-finding difficulties, vague speech, or the frequent use of stereotyped phrases. Inquiry should elucidate evidence for functional impairment, particularly in the areas of activities of daily living (ADLs) and instrumental ADLs (IADLs). Asking explicitly about evidence for executive impairments, such as being taken in by telephone scams, choosing inappropriate clothing for the weather, or difficulty planning a shopping list or making meals, is also often useful.

In addition to a detailed history, routine evaluation should include some form of cognitive testing; several scales have been validated for the primary care population (Table 1). One practice is to use the Mini-Cog as a screen, followed by the Montreal Cognitive Assessment (MoCA) or the Mini-Mental State Examination (MMSE) to further characterize the person’s current deficits and to track the course of impairment over time.

The recommended laboratory and imaging workup for dementia is listed in Box 4. The primary purpose of the laboratory evaluation is to rule out any potential reversible cause for cognitive impairment and also to investigate for any comorbid medical illness that may be causing a mild delirium and temporarily worsening cognition. The routine use of neuroimaging in the evaluation of dementia is controversial because of concerns about cost-effectiveness and variable utility. However, the American Academy of Neurology does recommend the use of structural neuroimaging (either computed tomography or magnetic resonance imaging) in the initial evaluation for dementia. Potential reversible causes of dementia that could be found on neuroimaging include subdural hematomas, neoplasms, or significant hydrocephalus. In practice, many geriatric psychiatrists pursue imaging in cases when there are unexpected neurologic findings on examination, an atypical or unusual presentation, rapid decline, in young patients (aged <60 years), or when the imaging findings may be useful for families and caregivers to see. An observational study of patients evaluated in a memory clinic found that neuroimaging made some contribution to the diagnostic assessment more than 80% of the time. Box 5 lists suggestions for when to consider referring for specialty dementia evaluation.
Once there is established evidence of cognitive impairment, characterization of which dementia syndrome is present is helpful for patient and family education, treatment planning, and prognostic purposes. The 4 most common types of dementia are listed in Table 2. Importantly, syndromic overlap is quite common in dementia; it is not always possible to characterize a particular patient as having a singular cause for their cognitive impairment.

**Mild Cognitive Impairment**

In recent decades, research into cognitive impairment has revealed an intermediate group of individuals with evidence of cognitive impairment not yet meeting the criteria for full dementia, now defined as mild cognitive impairment (MCI). MCI is a
heterogeneous concept, but individuals in this group are generally recognized to have deficits in at least one cognitive domain but otherwise continue to function independently. The presence of MCI greatly increases the risk for later development of dementia at a rate 3 times higher than individuals without MCI. However, it has also been observed that 16% to 40% of patients have resolution of MCI and can revert back to normal cognition at follow-up assessments. There is no current treatment of MCI that will prevent progression to dementia. Patients diagnosed with MCI should be monitored at least twice yearly for progression of cognitive impairment or deterioration of functioning.

PCPs will encounter an increasing number of middle-aged and older adults who are worried about the possibility of developing dementia and will wonder if their current memory problems are the start of this process. Normal aging can cause a subtle degradation in the speed and efficiency of information processing. Older patients may notice that they are not able to multitask as easily, have some difficulty acquiring

<table>
<thead>
<tr>
<th>Table 1</th>
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<tr>
<td><strong>Cognitive testing</strong></td>
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<tr>
<td><strong>Test</strong></td>
</tr>
<tr>
<td>Mini-Cog (Borson et al, 2003)</td>
</tr>
<tr>
<td>MMSE (cutoff of 24) (Folstein et al, 1975, Crum et al, 1993)</td>
</tr>
<tr>
<td>MoCA (Nasreddine et al, 2005)</td>
</tr>
</tbody>
</table>

**Abbreviations:** MCI, mild cognitive impairment; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment.

Box 4

**Evaluation of cognitive impairment**

- History from patient and collateral informant (relative, friend, or caregiver)
- Mental status examination, including formal cognitive testing via MMSE or MoCA
- Physical examination, including neurologic examination
- Medication review
- Complete blood count
- Urinalysis
- Basic metabolic panel 10
- Liver function tests
- B12, folate
- Thyroid-stimulating hormone, free T4
- Rapid plasma reagin test, Venereal disease research lab
- Head computed tomography or brain magnetic resonance imaging

Box 5
When to refer patients for specialty dementia evaluation

- Less than 65 years of age without family history of early onset dementia
- Atypical or rapid course
- Significant neurologic findings not accounted for by known prior cerebrovascular accident
- If considering a diagnosis of dementia with Lewy bodies or frontotemporal dementia
- Significant psychiatric comorbidity complicating presentation
- Patient or family request

Table 2
Four common causes of dementia

<table>
<thead>
<tr>
<th>Dementia Type</th>
<th>Prevalence (%)</th>
<th>Age of Onset (y)</th>
<th>Cognitive Syndrome</th>
<th>Clinical Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD</td>
<td>50–60</td>
<td>&gt;65</td>
<td>Insidious onset and progressive impairment</td>
<td>Aphasia</td>
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<tr>
<td></td>
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<td></td>
<td>Prominent memory impairment</td>
<td>Apraxia</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(impaired memory consolidation with rapid forgetting)</td>
<td>Agnosia</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Executive dysfunction</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poor insight, apathy</td>
</tr>
<tr>
<td>Dementia with Lewy bodies</td>
<td>10–20</td>
<td>&gt;65</td>
<td>Fluctuations in alertness</td>
<td>Parkinsonian signs</td>
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<tr>
<td></td>
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<td></td>
<td>Memory impairment</td>
<td>Visual hallucinations</td>
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<tr>
<td></td>
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<td></td>
<td>Visuospatial deficits</td>
<td>Neuroleptic sensitivity</td>
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<td></td>
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<td></td>
<td>Falls (orthostatic hypotension)</td>
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<td></td>
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<td></td>
<td></td>
<td>REM sleep behavior disorder</td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>10–20</td>
<td>&gt;65</td>
<td>Variable syndrome based on location of lesions</td>
<td>Focal neurologic deficits on examination</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Language/memory retrieval difficulties common</td>
<td>Abrupt onset</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Executive dysfunction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vascular risk factors (hypertension, diabetes, AFib, hyperlipidemia)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pseudobulbar affect</td>
</tr>
<tr>
<td>Frontotemporal dementia</td>
<td>1–5</td>
<td>51–63 Rare after 75</td>
<td>Prominent personality/behavioral change</td>
<td>Pronounced executive impairments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cognitive inflexibility</td>
<td>Disinhibition or apathy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Less obvious memory impairments in early years</td>
<td>Hyperorality, carbohydrate craving</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Hypersexuality</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Obsessive collecting/gathering behaviors</td>
</tr>
</tbody>
</table>

Abbreviations: AFib, atrial fibrillation; REM, rapid eye movement.

new information as fast as they once did, or have problems correctly remembering a newly learned list of items. However, unlike patients with MCI or dementia, cognitively normal individuals can acquire new information if given enough time and will recall a list if given cues or prompts. Most patients can be reassured that occasionally misplacing items or forgetting which word to use are not necessarily signs that they are becoming demented.33

AD
AD is the most common cause of dementia in older adults, accounting for 50% to 60% in autopsy samples.27 The characteristic presentation for AD is insidious onset of memory impairment with a gradually progressive course starting after 65 years of age. The prognosis of AD is grim, with almost all patients requiring full care in the late stages. Survival varies by age at diagnosis, with most patients living an additional 7 to 10 years when diagnosed in the late 60s and early 70s.34 Table 3 describes the features of AD at mild, moderate, and severe stages and makes suggestions for possible interventions to help patients and families.

Food and Drug Administration–approved treatments for mild-moderate AD currently include 4 cholinesterase inhibitors (AChEIs) (donepezil, galantamine, rivastigmine, and tacrine) and one N-methyl-d-aspartate (NMDA) receptor antagonist (memantine) (Table 4: “Cognitive enhancers”). All AChEIs have similar side-effect profiles and tolerability, although tacrine is rarely used because of the risk of hepatotoxicity. There is ongoing disagreement regarding the effectiveness of AChEIs and memantine.35–37 Controversy surrounds whether statistical significance found in research studies truly translates to clinically significant improvement. Common clinical practice is to choose one or more specific symptoms to target (such as word finding, language disturbance, or anxiety) when initiating a trial of an AChEI and/or memantine. If there is noticeable improvement or stabilization of the symptom after a few months, the medication is continued. Frequent reevaluation for efficacy and tolerability is needed, as patients’ cognitive, behavioral, and medical symptom profiles change over time.

Dementia with Lewy Bodies
Once thought to be rare, dementia with Lewy bodies (DLB) has emerged in recent years as a significant cause of late-life dementia.27 DLB is characterized by evidence of progressive cognitive decline consistent with dementia, combined with fluctuations in level of cognition and variable levels of alertness and attention, recurrent visual hallucinations that are well formed (typically of animals or small people), and spontaneous motor symptoms of parkinsonism.38 The spontaneous parkinsonism typical of DLB is observed as bradykinesia and rigidity that affects the axial muscles more than peripheral, often resulting in a gait disorder and recurrent falls. The cognitive decline in DLB is similar to AD; but overall, the survival is shorter.39,40

Treatment of DLB involves symptomatic management for the most problematic aspects of the disease, such as with AChEIs or memantine for cognitive disruption, antiparkinsonian agents for significant gait and balance difficulties, low-potency atypical antipsychotics for disturbing visual hallucinations, or benzodiazepines for rapid-eye-movement sleep behaviors. Evidence for the cognitive enhancers is limited, but AChEIs and memantine may have modest benefits in DLB.41–45 Antiparkinsonian agents, such as levodopa, can be considered for treatment of motor symptoms, although caution is advised to monitor for worsening of psychiatric symptoms.38 Providers may consider treatment of the visual hallucinations if they are particularly disturbing or distressing to patients. Extreme neuroleptic sensitivity makes treatment particularly problematic in DLB, as extrapyramidal symptoms from antipsychotics
Table 3
Patient and caregiver experiences in dementia and possible interventions

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Caregiver Experiences</th>
<th>Possible PCP Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild dementia (MMSE ~ 30–20)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mild forgetfulness &amp; word-finding trouble</td>
<td>• Having to help more with planning, remembering, finances</td>
<td>• Diagnose &amp; stage dementia in patient</td>
</tr>
<tr>
<td>• Difficulty remembering appointments</td>
<td>• Fearfulness about diagnosis &amp; the future</td>
<td>• Diagnose &amp; treat any mood problems in patient</td>
</tr>
<tr>
<td>• Trouble with complex planning or multistep instructions</td>
<td></td>
<td>• Counsel patient &amp; family about legal issues, driving, advance care planning</td>
</tr>
<tr>
<td>• May have social withdrawal</td>
<td></td>
<td>• Refer to memory clinic for diagnostic dilemmas or complex behavioral problems</td>
</tr>
<tr>
<td>• May develop depression or anxiety related to cognitive decline</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moderate dementia (MMSE ~ 20–10)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• More language impairment</td>
<td>• Increasing burden of care</td>
<td>• Refer to caregiver support groups</td>
</tr>
<tr>
<td>• Difficulty with short-term memory, sequences, chronologies</td>
<td>• Frustration at memory trouble, language</td>
<td>• Counsel regarding getting more help in the home</td>
</tr>
<tr>
<td>• More trouble with IADLS</td>
<td>• Having to decrease working/activities to provide care</td>
<td>• Refer patient for driving evaluation</td>
</tr>
<tr>
<td>• Some trouble with ADLS</td>
<td>• Increased vigilance as may not be able to leave patient alone</td>
<td>• Monitor caregiver for emergence of depression, fatigue</td>
</tr>
<tr>
<td>• No longer able to drive or perform complex tasks</td>
<td>• Poor sleep</td>
<td>• Involve family and friends to provide material &amp; emotional support</td>
</tr>
<tr>
<td>• Beginnings of paranoia or fearfulness</td>
<td>• Depression, anxiety, resentment, anger, grief</td>
<td>• Begin discussion about next steps in care: hiring help in the home, move to supported-living situation</td>
</tr>
<tr>
<td>• May wander or get lost, leave stove on, succumb to scams</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Severe dementia (MMSE &lt;10)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Physical manifestations begin: weakness, gait impairment, falls, swallowing trouble</td>
<td>• Fatigue may be severe</td>
<td>• Refer to palliative medicine for goals of care discussion</td>
</tr>
<tr>
<td>• Difficulty recognizing familiar people</td>
<td>• Medical complications emerge (eg, hypertension)</td>
<td>• Encourage caregiver to have close follow-up with their own PCP</td>
</tr>
<tr>
<td>• Unable to perform any IADLs</td>
<td>• May feel guilt for placing patient in supervised care setting</td>
<td>• Encourage respite, scheduled time away, exercise, self-care</td>
</tr>
<tr>
<td>• Marked difficulty with ADLs</td>
<td></td>
<td>• Encourage support group and/or personal therapy</td>
</tr>
<tr>
<td>• Apraxia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• May have paranoia, delusions, agitation, aggression</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>End stage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• May be mute, bed bound</td>
<td>• Significant burden of daily care</td>
<td>• Transition to hospice, either at home or in facility</td>
</tr>
<tr>
<td>• Requires complete care for ADLs</td>
<td>• Grief and/or relief at time of death</td>
<td>• Refer to bereavement support groups</td>
</tr>
</tbody>
</table>
can increase agitation, worsen the movement disorder, and cause falls. If an antipsy-
chotic medication is needed, use of a very-low-potency atypical, such as quetiapine,
is a reasonable approach. Doses should be started low and titrated slowly. Patients
and caregivers should be educated about the potential risks for worsening motor
and behavioral symptoms and an increased risk of death with the use of antipsychotic
agents in this population. Sleep disorders may improve with melatonin as a first trial,
followed by low-dose clonazepam if necessary.46 Consultation or comanagement with
a neurologist or geriatric psychiatrist is usually indicated for these patients.

Vascular Dementia

Vascular dementia (VaD) represents an important cause for cognitive impairment in
older adults, but the construct remains problematic.47 Pure VaD is likely much less
common than a mixed type, whereby cerebrovascular disease overlaps with other pa-
thologies (particularly AD). In clinical practice, VaD is best conceptualized as dementia
with an onset or dramatic worsening in the setting of a stroke or when evidence of sig-
nificant cerebrovascular burden is found on imaging. Because the location and extent
of vascular injury is highly variable, the clinical presentation of VaD can vary widely,
from presentations similar to AD with primarily marked memory impairment to present-
tations with greater impairment in executive function and attention.

Treatment of VaD is focused on targeting risk factors for further cerebrovascular
disease progression, including hypertension, diabetes, smoking, obesity, high

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Table 4
Cognitive enhancers

<table>
<thead>
<tr>
<th>Medication</th>
<th>Mechanism</th>
<th>Starting Dosage and Titration</th>
<th>Target Dosage</th>
<th>Take with Food</th>
<th>Major Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donepezil pill or orally disintegrating tablet</td>
<td>AChEI</td>
<td>5 mg daily at bedtime Increase 5 mg in 4-6 wk</td>
<td>10 mg daily</td>
<td>No</td>
<td>Nausea, diarrhea, insomnia</td>
</tr>
<tr>
<td>Galantamine immediate-release tablet or solution</td>
<td>AChEI</td>
<td>4 mg BID increase 4 mg BID every 4-6 wk</td>
<td>12 mg BID</td>
<td>Yes</td>
<td>Nausea, vomiting, diarrhea</td>
</tr>
<tr>
<td>Galantamine extended-release tablet</td>
<td>AChEI</td>
<td>8 mg daily Increase 8 mg every 4-6 wk</td>
<td>24 mg daily</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Rivastigmine pill or solution</td>
<td>AChEI</td>
<td>1.5 mg BID Increase 1.5 mg BID every 2-4 wk</td>
<td>6 mg BID</td>
<td>Yes</td>
<td>Dizziness, headache, nausea, diarrhea</td>
</tr>
<tr>
<td>Rivastigmine patch</td>
<td></td>
<td>4.6 mg/24 h Increase after 4 wk</td>
<td>9.5–13.3 mg/24 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memantine</td>
<td>NMDA antagonist</td>
<td>5 mg daily Increase 5 mg every week in divided doses</td>
<td>10 mg BID</td>
<td>No</td>
<td>Dizziness, headache, confusion</td>
</tr>
<tr>
<td>Memantine extended-release tablet</td>
<td></td>
<td>7 mg daily Increase 7 mg daily every week</td>
<td>28 mg daily</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
cholesterol, high homocysteine, and atrial fibrillation. The AChEIs and memantine are not currently approved for use in VaD but have some utility in clinical practice likely because there is so often overlap with AD.

**Frontotemporal Dementia**

Frontotemporal dementia (FTD; also called behavioral variant of frontotemporal lobar degeneration) is distinguished from the other dementias by a young age of onset and prominent changes in personality and behavior. Because it is most likely to present in younger individuals, FTD is often mistaken or misdiagnosed for a substance abuse, bipolar, or personality disorder. Neuroimaging can be helpful in the diagnosis of FTD, as a characteristic pattern of degeneration of the frontal and/or temporal lobes can be seen.

Treatment of FTD is largely symptomatic. AChEIs or memantine have not shown a clear symptomatic benefit in open-label studies and may even make behavioral disturbances worse. Selective serotonin reuptake inhibitors (SSRIs) and trazodone may be useful for targeting impulsivity, sexually inappropriate behavior, and compulsive behaviors in some patients; but evidence is still preliminary. Although antipsychotic medications are often used to treat behavioral symptoms in FTD, there have been no randomized controlled trials to examine this practice. As with patients with DLB, consultation with a specialist is helpful.

**Neuropsychiatric Complications of Dementia**

Although many different neurodegenerative diseases and medical conditions lead to dementia, the later stages of cognitive deterioration tend to look quite similar. Although depression and anxiety may emerge in earlier stages, significant behavioral problems, such as agitation, aggression, wandering, and resistance to care, tend to appear later in the course of disease. Behavioral and environmental interventions are sometimes effective, but PCPs are often called on to prescribe medications to treat problem behaviors in their patients with dementia. The Clinical Antipsychotic Trials of Intervention Effectiveness–Alzheimer Disease study found that symptoms of anger, aggression, and paranoia did improve with active treatment with antipsychotics. Caution needs to be used when prescribing these agents because of the risk of significant adverse effects, including orthostatic hypotension, sedation, falls, and an increase in cerebrovascular events and death. Sink and colleagues published a useful algorithm for evaluating and treating problematic behaviors in patients with dementia (summarized in Box 6).

**DEPRESSION**

Older adults receive most of their mental health treatment in the primary care setting because of the stigma and lack of access to mental health specialty services. Depression continues to be undertreated even when recognized, especially in older men and several minority groups. Older adults often present to their PCP with somatic complaints rather than with mood concerns, which can make identifying depression more challenging without a high index of suspicion and an awareness of the prevalence of this disorder (Box 7). Many older adults have symptoms that fall short of meeting the criteria for major depression; but symptoms of minor depression, sometimes termed depression not otherwise specified, are associated with similar functional impairment, morbidity, mortality, and suffering. Clues to identifying depression include a lack of engagement with the provider (such as poor eye contact), failed appointments, providing vague or nonspecific concerns during an appointment, or...
somatic symptoms out of proportion to a patient’s presenting concern. For example, Mr Q might be confused about his medications because he is apathetic about his medical care because of a new depression. Men may be more likely to present with substance abuse, irritability, anger, or social withdrawal and less likely to endorse sadness or psychological distress. Please see Box 8 for risk factors for depression.

The use of standardized scales can be helpful in identifying those who need a more in-depth interview to assess for depression. Such scales can be self-administered or administered by medical assistants or nurses and the results provided to the PCP. Some of the most commonly used depression instruments are outlined in Table 5.

<table>
<thead>
<tr>
<th>Box 6</th>
<th>Approach to the treatment of behavioral disturbances in patients with dementia</th>
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</thead>
<tbody>
<tr>
<td>Evaluate for occult medical problems and pain, and treat if present.</td>
<td></td>
</tr>
<tr>
<td>Simplify the patients’ medication list if possible, reducing or stopping medications that may be deliriogenic.</td>
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<tr>
<td>Use nonpharmacologic behavioral and environmental strategies, including caregiver education.</td>
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<tr>
<td>Consider a trial of a cholinesterase inhibitor if patients are not already taking one.</td>
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<tr>
<td>Consider a trial of antidepressant if patients show signs of depression or anxiety.</td>
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<tr>
<td>Consider a trial of antipsychotics only if no other options remain, there is concern for patient or caregiver safety, or patients seem to be experiencing considerable distress from delusions and agitation.</td>
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<tr>
<td>Have a risk-benefit discussion with the patients’ surrogate discussing the possible increased risk of stroke or death before starting antipsychotics.</td>
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<tr>
<td>Check a baseline electrocardiogram for prolonged QT interval.</td>
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<tr>
<td>Reevaluate at least monthly for efficacy and side effects, and consider weaning and discontinuation every 6 months.</td>
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<table>
<thead>
<tr>
<th>Box 7</th>
<th>Why it can be difficult to diagnose depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication side effects can mimic depressive symptoms.</td>
<td></td>
</tr>
<tr>
<td>The symptoms of concurrent medical illness overlap with symptoms of depression.</td>
<td></td>
</tr>
<tr>
<td>There are clinician time pressures.</td>
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<tr>
<td>The communication style of patients can lead to a difficulty in diagnosis.</td>
<td></td>
</tr>
<tr>
<td>Multiple somatic concerns lead to a focus on medical causes.</td>
<td></td>
</tr>
<tr>
<td>Clinician’s, patients’, or family’s erroneous belief that</td>
<td></td>
</tr>
<tr>
<td>Depression is a normal consequence of aging.</td>
<td></td>
</tr>
<tr>
<td>Depression cannot or should not be treated.</td>
<td></td>
</tr>
<tr>
<td>Depression cannot improve with treatment.</td>
<td></td>
</tr>
</tbody>
</table>

somatic symptoms out of proportion to a patient’s presenting concern. For example, Mr Q might be confused about his medications because he is apathetic about his medical care because of a new depression. Men may be more likely to present with substance abuse, irritability, anger, or social withdrawal and less likely to endorse sadness or psychological distress. Please see Box 8 for risk factors for depression. The use of standardized scales can be helpful in identifying those who need a more in-depth interview to assess for depression. Such scales can be self-administered or administered by medical assistants or nurses and the results provided to the PCP. Some of the most commonly used depression instruments are outlined in Table 5.
Comorbidity

Depression is often embedded in a group of other symptoms; can be associated with medications or untreated medical issues, such as thyroid disease or diabetes; and can result in medical complications. **Box 9** lists some areas of clinical focus in patients identified as having depression. Looking at the full picture of patients’ medical situation is warranted in order to identify medical issues that may contribute to depression or complicate treatment.

Depression often co-occurs with other mental health conditions, including anxiety disorders, somatization, cognitive impairment, personality disorders, and substance abuse or dependence involving alcohol, illicit drugs, pain medications, or sedative-hypnotic agents.70–72 It is important to recognize these overlapping mental health syndromes, as older adults will sometimes receive medications for the other symptoms without recognition that they are related to the larger syndrome of depression. This practice can lead to polypharmacy and poor response to treatment and contribute to falls, accidents, and an increased risk of suicide.

Suicide

In the United States, older white men aged 85 years and older are the demographic group at the highest risk for completed suicide (Box 10). Older adults presenting with insomnia, psychotic symptoms, and agitation in combination with hopelessness, depression, unremitting pain, or active alcohol use are at a particularly high risk for

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Depression screening instruments</th>
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<tbody>
<tr>
<td>Instrument</td>
<td>Sensitivity (%)</td>
</tr>
<tr>
<td>2-item screen</td>
<td>97</td>
</tr>
<tr>
<td>Geriatric depression scale</td>
<td>94</td>
</tr>
<tr>
<td>Patient Health Questionnaire-9</td>
<td>88</td>
</tr>
<tr>
<td>Cornell Scale for Depression in Dementia</td>
<td>90</td>
</tr>
<tr>
<td>Patient Health Questionnaire-2</td>
<td>100</td>
</tr>
</tbody>
</table>

Adapted from Refs.63–69
In the United States, older adults attempt suicide less often but use more lethal means, such as firearms. Because of their often-debilitated medical status and social isolation, they are less likely to be discovered or to recover from an attempt.

**Treatment**

Once medical professionals identify depression, they should recognize the need to start conservative doses of medications for depression because of the physiologic changes in the geriatric population and their inability to tolerate standard starting adult doses. Starting one-half of a usual adult starting dose of medication is recommended. Unfortunately, failing to titrate the dose medication to the usual adult starting dose and then failing to further increase the dose to target ongoing symptoms commonly contributes to lack of relief from symptoms, ongoing suffering, and poor outcomes. It is important to monitor depression as an independent medical problem with a need for focused follow-up. Patients must be educated that these medications are to be taken every day and that response to and relief from symptoms often takes from 4 to 6 weeks and up to 12 to 14 weeks for full response because of the tendency for older adults to respond less rapidly to medications.

### Box 9
**Areas of clinical focus in older adults with depression**

- Review for medications with depressive side effects.
- Evaluate for contributing medical issues.
- Evaluate for complications and consequences of depression (eg, dehydration, malnutrition).
- Evaluate and adequately treat pain.
- Evaluate suicidality (plan, intent, lethality, and access to means).
- Ask about psychosis (may need additional medication or hospitalization).
- Screen for substance abuse, dependence, or withdrawal.
- Screen for cognitive impairment.
- Ask about prior treatment and success for patients and family members.

### Box 10
**Risk factors for suicide in older adults**

- Social isolation
- Widowhood
- Chronic and inadequately treated pain
- Terminal or worsening physical illness
- Personality disorder
- Prior attempt
- Family history of suicide
- Substance abuse or dependence
- Access to lethal means, particularly firearms
Box 11
Tailoring antidepressant treatment

- Symptom profile (insomnia vs hypersomnia, poor appetite, pain)
- Cost of medication
- Drug interactions
- Medical comorbidities
- Safety
- Prior response of patient
- Prior or current response of family

Common variables to consider when choosing an antidepressant medication are shown in Box 11. Because in clinical trials antidepressants have shown relatively similar efficacy between classes, choosing an agent should be informed by patients’ presentation, comorbid medical conditions, cost, safety, and prior treatment if any. Choosing a medication that a family member has had success with is a useful approach.75 Table 6 lists medications and other treatment modalities and potential reasons for use.

Although medications are often the primary focus of treatment of depression, older adults often despair at the idea of yet another medication to be added to their often already-complicated regimen or do not like the idea of taking a medication for depression.76 Although educating patients that antidepressants can be very helpful and discussing depression as a medical problem can help with patients considering treatment with medication, respecting their decision not to take one is important. Identifying social issues that may benefit from the attention of social work, problem-solving therapy, and having information on available community resources for counseling that can be provided to patients are crucial.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Useful for Patients with (Notes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSRIs (eg, citalopram)</td>
<td>Comorbid anxiety (safe, well tolerated, cost-effective)</td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>Insomnia, poor appetite, weight loss, comorbid nausea</td>
</tr>
<tr>
<td>Serotonin norepinephrine reuptake inhibitors</td>
<td>Comorbid neuropathic pain</td>
</tr>
<tr>
<td>inhibitors (eg, venlafaxine)</td>
<td></td>
</tr>
<tr>
<td>Bupropion</td>
<td>Overweight, smoker, low energy</td>
</tr>
<tr>
<td>Tricyclic antidepressants (eg, nortriptyline)</td>
<td>Treatment resistance, need for/desire for blood level (third line; consider specialty referral)</td>
</tr>
<tr>
<td>Monoamine oxidase inhibitors (eg, tranylcypromine)</td>
<td>Treatment resistance (third line; consider specialty referral)</td>
</tr>
<tr>
<td>Electroconvulsive therapy</td>
<td>Inability to tolerate medications, rapid response needed, psychosis; prior response</td>
</tr>
<tr>
<td>Psychotherapy</td>
<td>Patient preference/adjunct</td>
</tr>
</tbody>
</table>
Behavioral activation is another important component of depression care and has been shown to be particularly beneficial for older adults.\textsuperscript{77,78} Behavioral activation may include recommendations to increase social contacts, increase community connections, increase pleasurable activities identified by patients, and exercise. Problem-solving therapy is another approach and can help patients set goals and follow through on behavioral activation strategies toward solving problems they identify by making small incremental changes over time.\textsuperscript{79}

Successful treatment of depression in primary care with collaborative care models has been shown repeatedly. Treatment involves care managers with the role of following up with depressed patients to identify side effects, investigate compliance, educate patients about depression and the course of treatment response, and to recommend a need for titration or change in the antidepressant regimen.\textsuperscript{80–82} Collaborative care models have shown improved response to and remission of depressive symptoms and a decrease in suicidal ideation over usual care. PCPs and their staff can emulate collaborative care models by providing education to patients and their families about depression, medication side effects, response timeline, and the need to alert PCPs about side effects or a lack of response rather than stopping medication. A focused contact with patients either by phone or in the office 2 weeks after initiating medication to discuss side effects, assess the need for medication titration, discuss compliance issues, and to evaluate for clinical worsening or need for an increased level of care or specialty referral are particularly important. This practice is crucial for those who may be expressing hopelessness, passive death wishes, or suicidal ideation.

Treatment of depression can be successful if it is properly identified, treated with adequate doses of antidepressants with an important focus on response and remission of symptoms, and when follow-up for depression as an independent medical issue is provided. Failure to treat depression may lead to needless suffering, increased medical resource use, increased medical mortality, and suicide.

### ALCOHOL AND SUBSTANCE MISUSE

Persons older than 65 years misuse alcohol and drugs less often than younger people, but the prevalence is increasing and is expected to continue to increase.\textsuperscript{83} In a recent study of more than 10,000 older adults, 21\% reported at-risk drinking (more than 2 drinks on average per day) and 17\% binge drinking (more than 5 drinks per day at least once a month).\textsuperscript{84} Although there are instruments to aid in screening for alcohol use disorders (such as the CAGE questionnaire for dependence and the Alcohol Use Disorders Identification Test for harmful drinking), simply asking patients about their specific pattern of alcohol use is probably the best first step.\textsuperscript{85–87} It may also be necessary to query accompanying family members. Advice to older patients about their alcohol use needs to find a balance between recognition that low amounts of alcohol have been shown in several studies to have neuroprotective effects in some patients, whereas larger amounts and drinking in a binge pattern are clearly damaging to the brain.\textsuperscript{88–90}

The drugs most commonly abused by older patients are prescription narcotics and benzodiazepines.\textsuperscript{91} Less than 1\% of illicit drug use is by persons older than 65 years, but this proportion too has been increasing in recent years. Box 12 outlines risk factors for alcohol and substance misuse among the elderly. Mr Q should be asked about alcohol, any use of prescription narcotics and benzodiazepines, and illicit drugs as a cause for his confusion. Older patients with addiction problems should be referred for evaluation and treatment to a specialty clinic or addiction psychiatrist if possible.
CAREGIVERS

Many studies over the last decade have highlighted the increased morbidity and mortality associated with being a caregiver to an older adult, with and without dementia.92–96 Screens have been developed to identify depression and strain among caregivers, but their utility in the primary care setting may be limited by time factors.97,98 Asking the caregivers of older adults about their level of stress can reveal important problems not only affecting the caregivers but also the quality of the care they are providing and the well-being of the patients.99 Once caregivers with high levels of strain or depression are identified, they can be referred for help to social workers or to outside resources or their own PCP can be alerted, with their permission. Mr Q’s wife of many years should be asked about her own coping in the setting of his possibly diminished level of independent functioning.

CASE SUMMARY

The cause of Mr Q’s confusion about his medications could be delirium, a sign of early dementia, apathy from depression, or caused by intoxication or withdrawal from alcohol or another substance of misuse. The initial approach to distinguishing these entities can be managed in the primary care setting, with referral to specialists in certain cases. Mr Q’s wife should also be asked about her own coping (Box 13).

Box 13
What to do with Mr Q?

1. Screen for delirium
2. Screen for cognitive impairment
3. Screen for depression
4. Screen for alcohol or drug misuse
5. Assess his wife’s coping

Box 12
Warning signs and risk factors for alcohol or drug misuse

- Single
- Male
- Low income
- History of alcohol or substance misuse
- Few or no social connections
- Chronic pain
- Comorbid depression or anxiety
- Involvement in crime

SUMMARY

The management of possible psychiatric issues in older adult patients will increasingly be done by PCPs. This overview summarizes an initial approach to delirium, dementia, depression, alcohol and substance misuse, and caregiver stress.

REFERENCES