The Intermountain Cognitive Care Development Team developed this care process model (CPM) to improve the diagnosis and treatment of patients with cognitive impairment across the staging continuum from mild impairment to advanced dementia. It is primarily intended as a tool to assist primary care teams in making the diagnosis of dementia and in providing optimal treatment and support to patients and their loved ones. This CPM is based on existing guidelines where available and expert opinion.

Why Focus ON DIAGNOSIS AND MANAGEMENT OF DEMENTIA?

- Prevalence, trend, and morbidity. In 2016, one in nine people age 65 and older (11%) has Alzheimer’s, the most common dementia. By 2050, that number may nearly triple, and Utah is expected to experience one of the greatest increases of any state in the nation. One in three seniors dies with a diagnosis of some form of dementia. The emotional stress of dementia caregiving is rated as high or very high by nearly 60% of caregivers, about 40 percent of whom suffer from depression.

- Costs and burdens of care. In 2016, total payments for health care, long-term care, and hospice were estimated to be $236 billion for people with Alzheimer’s and other dementias. Just under half of those costs were borne by Medicare. The emotional stress of dementia caregiving is rated as high or very high by nearly 60% of caregivers, about 40 percent of whom suffer from depression.

- Physician support needs. Dementia is detected in only 50% of Intermountain patients. A majority of internal medicine physicians identified support for cognitively impaired patients as a top practice need (based on an Intermountain internal needs assessment). For primary care physicians, 88% felt that a care process model addressing cognitive impairment would be helpful.

- Importance of identification and treatment. While there is no cure for dementia, treatment (both pharmacologic and non-pharmacologic) has been shown to improve quality of care, quality of life for patients, caregiver assistance, and caregiver mental health as well as to delay nursing home placement and decrease costs to health care systems.

- In addition, dementia patients have voiced a need for more timely diagnosis, better education about dementia management, and better support and follow-up for patients and caregivers from healthcare providers (Alzheimer’s Association focus group).

INTERMOUNTAIN BEST PRACTICE RECOMMENDATION

All Medicare annual wellness visits (AWVs) should include a brief (2- to 3-minute) cognitive screening with the Mini-Cog™ cognitive screening tool (training links and forms are included in this CPM (see page 2). Intermountain will begin measuring rates of AWV Mini-Cog™ screening in 2017.

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MEASUREMENT & GOALS

- Complete a Mini-Cog™ cognitive screening for a minimum of 75% of Annual Wellness Visit (AWV) patients
- Administer a MoCA follow-up cognitive screening for at least 50% of patients whose Mini-Cog™ score showed potential cognitive decline
- Increase the rate of diagnosis of dementia by 5% system wide

Indicates an Intermountain measure
MILD COGNITIVE IMPAIRMENT AND DEMENTIA SCREENING AND DIAGNOSIS

KEY RECOMMENDATIONS

• Screen patients to determine if they meet criteria for mild cognitive impairment or dementia using validated screening tools (Mini-Cog™ and MoCA).
• Complete Mini-Cog™ and MoCA training prior to first use, and be sure to administer the screenings the same way every time.
• Conduct the Mini-Cog™ screening at every Medicare annual wellness visit (AWV).
• Understand the overlap between depression and dementia.
• Interview a knowledgeable informant about the patient’s functional status BEFORE making a diagnosis.

DEPRESSION AND DEMENTIA OVERLAP

Depression and dementia are the two, most-diagnosed neuropsychiatric disorders in adults over age 65. Highly comorbid, either disorder may appear first. Depression symptoms in older adults (and present in up to one-half of Alzheimer’s disease cases) are often overlooked and untreated because they coincide with other problems encountered by older adults (e.g., low energy, somatic symptoms, and cognitive complaints).

A history of depression is associated with increased risk of dementia. It can be difficult to determine whether cognitive impairment is due to depression or if dementia and depression are both present. In cognitive impairment that is due to depression, it is more common for depressed individuals to display lower motivation, be more concerned about their functioning, and to have greater self-complaints of difficulty with concentration and attention than those with dementia. When symptoms of depression are present in a patient with cognitive impairment, the recommended approach is to treat for depression and reevaluate cognition.

Consultation with neuropsychology can be particularly helpful.

Mild cognitive impairment (MCI) and dementia are both clinical syndromes with multiple causes that affect memory and other cognitive functions. Both are diagnosed clinically, using cognitive screening tools to detect and measure possible impairment (see Cognitive screening tools: The Mini-Cog™ and the MoCA on page 3), a history and physical exam to rule out treatable factors that can influence cognition such as depression, infection, nutrition deficiency, and medication side effects (see Algorithm 1 on page 6).

The importance of diagnosis for these syndromes may be overlooked in some healthcare settings because approved medications have shown little benefit for disease modification. However, non-pharmacologic interventions and careful care management are effective in preserving patients’ quality of life and independence and in reducing caregiver burnout.

Patients with MCI may experience some difficulty with daily tasks but still manage to function without assistance, whereas patients with dementia require ever more help from caregivers as they progress through stages of impairment from mild to severe. Patients with MCI have a greater-than-normal risk of developing dementia in the future, but not all MCI cases progress to greater impairment and some even improve. The algorithm on page 4 details the best practices to follow in diagnosing dementia and MCI.

Mild cognitive impairment (MCI)

MCI is a condition marked by mild changes in memory, language, or another mental function. However, patients with MCI can perform all activities of daily living without any caregiving assistance. Cognitive changes are significant enough to be noticed by others and measured by cognitive screening assessments. Typical cognitive problems in MCI may include:

• Greater dependency on reminders and notes
• Greater difficulties with multitasking
• More distractibility
• Less flexibility
• New difficulties with problem-solving and word finding.

MCI is typically a diagnosis of exclusion. If a patient shows measurable but mild impairment on screening tests with no potential causative factors (medication side effects, infection, nutritional deficiencies, depression) and no functional impairment, the patient is diagnosed with MCI rather than mild dementia. See the diagnosis algorithm on page 6.

Dementia

Dementia is defined as a decline in cognitive function from baseline that is not due to another medical or psychiatric cause and that causes impairment in ability to live and function independently. Mild dementia is distinguished from MCI by an impairment in the patient’s ability to perform daily activities. Input from a caregiver or another knowledgeable informant who can give an accurate report of the patient’s functional status is an absolute requirement for a dementia diagnosis. The diagnosis is primarily clinical and relies heavily on the history and physical examination (including reports from a knowledgeable informant). While labs, imaging, and cognitive testing are helpful in making the diagnosis, they are not diagnostic in and
of themselves. If a patient shows cognitive impairment but no functional impairment, the diagnosis is MCI rather than dementia. Once a diagnosis of dementia has been made, the cause and stage of the impairment should be determined (see pages 4 through 5).

**Cognitive screening tools: the Mini-Cog™ and the MoCA**

In diagnosing dementia, it is important to use validated screening tools for assessing each patient’s cognitive function early in the diagnostic process (see the algorithm on page 6). Intermountain recommends two cognitive screening tools: the Mini-Cog™ and the Montreal Cognitive Assessment (MoCA).

**The Mini-Cog™ — for annual wellness visit (AWV) screening**

The Mini-Cog™ is a preliminary 2- to 3-minute screening tool used to detect possible moderate- to severe-stage dementia among well-appearing patients. Scores of 2 or less indicate possible impairment, signalling the need for further screening with the MoCA (this scoring threshold may not identify cases of MCI). A fast, rough tool, the Mini-Cog™ satisfies the minimum requirements for screening cognition at the Medicare AWV and should be administered at every AWV/well checkup for geriatric patients.

Access instructions and scoring criteria for the Mini-Cog™ on page 21 or by clicking on the image at right. (The sidebar at right provides directions for accessing Intermountain’s computer-based Mini-Cog™ and MoCA training.)

For purposes of this CPM, a score of ≤ 2 is abnormal and requires further evaluation.

**The MoCA — for patients showing possible impairment**

The Montreal Cognitive Assessment (MoCA), a 10-minute screening tool, helps primary care and intensive medicine providers detect and distinguish among levels of cognitive impairment. The MoCA assesses different cognitive domains and has good psychometric properties (e.g., test-retest reliability, internal consistency). The MoCA should be administered to all patients who score 2 or less on the Mini-Cog™ or who show impairment (or express concerns about impairment). If it has been 6 months or less since most recent MoCA administration, then an alternate version of the MoCA should be used. While the MoCA cannot be used on its own to diagnose MCI or dementia, it has demonstrated specificity in distinguishing among those with MCI, typical cognitive aging (87% specificity), and mild-stage probable Alzheimer’s dementia (87% specificity).

For purposes of this CPM, scores of ≤ 25 are considered abnormal.

**MINI-COG™ AND MOCA COMPUTER-BASED TRAINING**

Access the computer-based training via the My Learning Portal at https://m.intermountain.net/mylearning/Pages/home.aspx. The training takes about 12 minutes not including videos of screening delivery.

1. Log into TalentLink.
2. Click “Add” at the bottom of the My Learning and Development Activities window.
3. Choose “Learning and Development Activities from a Catalog.”
4. Type in “MiniCog” or “MOCA.” As you type, the course name will appear.
5. Click on the course name.
6. Click on the course’s lightning symbol under “Actions.”
7. Select “Register and Launch” (Or just “Register” if the learner wants to add the course now but complete it later).

**ADMINISTERING THE MOCA**

The MoCA is available in multiple languages and in versions for sensory impairment. In addition, providers may use alternate versions to minimize rehearsal/learning effects among retested patients.

Forms and scoring instructions can be found on page xx or by clicking the MoCA form image at left.

NOTE: Reliable administration and scoring of the instrument is crucial in detecting a true change over time. Standardized staff training and ongoing mentoring for quality assurance is strongly recommended.
Etiology

After a diagnosis of the dementia syndrome is made, it is important to determine the etiology because this has implications for treatment. The most common etiology is Alzheimer’s disease, followed by vascular and mixed dementias.5,16 These types of dementia may be managed very effectively in a primary care setting. Dementia due to Parkinson’s disease, Lewy body dementia, frontotemporal dementia, and normal pressure hydrocephalus are less common, and neurology consultation is often helpful in diagnosis and management. Criteria for the most common types of dementia are listed below in table 1.

<table>
<thead>
<tr>
<th>Etiology</th>
<th>ICD 10 Code</th>
<th>Etiology Criteria</th>
</tr>
</thead>
</table>
| Alzheimer’s disease             | G30.1 and F02.80 or F02.81                                                  | • Gradual onset of symptoms over months to years  
• Most prominent feature is memory  
• Impaired learning and recall of recently learned information |
| Vascular dementia               | F01.50 or F01.51                                                            | • Stepwise decline  
• History of clinically apparent stroke that is temporally related to cognitive decline |
| Mixed dementia                  | Code predominant etiology first                                             | Criteria for multiple dementia syndrome etiologies are met. Most common is mixed vascular and Alzheimer’s. |
| Dementia with Lewy bodies       | G31.83 and F02.80 or F02.81                                                  | 2 of 3 required  
• Fluctuating cognition  
• Recurrent visual hallucinations  
• Parkinsonism (bradykinesia, muscular rigidity, tremor, postural instability) |
| Frontotemporal dementia         | G31.09 and F02.80 or F02.81, consider Z55-65 or 91                         | 3 of 6 required  
• Disinhibition  
• Apathy  
• Loss of empathy  
• Compulsive behaviors  
• Hyperorality  
• Impaired executive function/decision making |
Cognitive impairment staging

Once a diagnosis has been made, it’s important to determine the patient’s functional status and corresponding stage of impairment. The impairment stage will determine the appropriate interventions to help preserve the patient’s quality of life for as long as possible and mitigate excessive burdens on caregivers.

Cognitive impairment staging is done based on the results of two assessments — the Functional Activities Questionnaire (FAQ) on page 26 and the Stress Thermometer on page 27 — as completed by a knowledgeable informant (family member, caregiver, or someone else who knows and sees the patient regularly). It is important that an informant complete these forms because patients with dementia usually cannot provide an accurate report of their functional status. Staging guidance is found in table 2 below.

The earliest stage of cognitive impairment is MCI in which patients show no functional impairment (see page 2). MCI may be a clinical precursor to dementia, but it may never progress and may even improve. In mild dementia, patients require help with (but can participate in) higher-order daily tasks, known as the instrumental activities of daily living (IADLs). IADLs include such activities as paying bills, taking medications, scheduling appointments, and shopping alone. In moderate dementia, patients are dependent on caregivers to perform IADLs and require assistance with (but can participate in) more rudimentary tasks, known as the basic activities of daily living (ADLs). ADLs include such activities as bathing, dressing, and toileting. In severe dementia, patients are totally dependent on others for all IADLs and ADLs.

<table>
<thead>
<tr>
<th>IADL or ADL*</th>
<th>Mild Cognitive Impairment</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
</tr>
<tr>
<td>Able to pay bills, balance checkbook independently</td>
<td>Yes with some difficulty</td>
<td>Requires assistance</td>
</tr>
<tr>
<td>Able to shop for groceries or clothes alone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Able to bathe, dress self</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Instrumental activity of daily living (IADL) or activity of daily living (ADL), taken from Intermountain’s Health Risk Assessment for the Medicare annual wellness visit.

**TABLE 2. Stages of cognitive impairment based on functional status**

**DIAGNOSTIC BEST-PRACTICE FORMS**

The forms that support Intermountain’s best-practice process for dementia diagnosis (see algorithm 1 on page 6) include:

- **For cognitive screening, use:** Mini-Cog™ and MoCA
- **For caregiver or informant reports, use:**
  - Functional Assessment Questionnaire (FAQ)
  - Behav5
  - Stress Thermometer

**In the sidebar at right,** you will find images and links for these forms (which are included at the end of this CPM). You can click on the images to directly access full-sized copies.
ALGORITHM 1: Diagnosing Dementia and Mild Cognitive Impairment (MCI)

**COGNITIVE CONCERN OR SCORE \( \leq 2 \) ON MINI-COG™* AT ANNUAL WELLNESS VISIT (AWV)**

(if cognitive concern, add to problem list: Code R41.9)

*NOTE: Diagnostic forms and tools appear on pages xx–xx.

Delirium present? See DSM-5 criteria (a)

no

MAKE appointment with patient AND caregiver to address cognition (b)

yes

FIND and TREAT cause of delirium. (Add to problem list: Code R41.0)

PRE-APPOINTMENT — Performed by medical assistant (MA) or care manager (CM)

- ADMINISTER MoCA* to patient. HAVE Informant do surveys outside room: Functional Assessment Questionnaire (FAQ)* and Stress Thermometer*
- SCORE MoCA, FAQ, and Stress Thermometer, and GIVE to PCP for appointment

MoCA score < 26? OR red flags? (c)

no

If behavioral disturbance, ASSESS/TREAT by Behavioral Disturbance Algorithm (Page X); CONSIDER MHI referral (d)

yes

RULE-OUT non-dementia causes of impairment

CONDUCT history and physical (e), REVIEW/ORDER labs (f), and RECONCILE medication list (g) with Pharm D consult (if available)

ADDRESS any findings

If depression
If uncontrolled illness/deficiency
If medication side effects or reactions

CONSIDER MHI referral (d)

if: Depression ≥ moderate

TREAT and RE-EVALUATE by phone in 1–2 weeks; then, FOLLOW-UP monthly x 3 months

Cognitive impairment remaining?

no

DISCUSS brain health with patient

yes

Red flags remaining? (c)

no

TREAT/MANAGE care per guidance on page xx

yes

Determine functional status (based on FAQ result):

<table>
<thead>
<tr>
<th>Functional status unclear</th>
<th>Function impaired</th>
<th>Function not impaired (Add to problem list: Code G31.84)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSIDER referral to neuropsychology (j) OR RE-EVALUATE in 3–6 months</td>
<td>ORDER brain imaging (h)</td>
<td>DIAGNOSE mild cognitive impairment (MCI), educate on brain health, and re-evaluate annually</td>
</tr>
</tbody>
</table>

PCP Visit 1–3

PCP Visit 2–4

DIAGNOSE dementia (k)

- Without behavioral disturbance (Add to problem list: Code F03.90)
- With behavioral disturbance (Add to problem list: Code F03.91)

ASSESS stage using table 1
(a) **DELIRIUM**

Criteria (adapted from information in DSM-5)
- Changes in awareness and attention control. Onset is usually fast (hours to days) and may change over each day.
- Additional cognitive changes are present and not caused by another neurocognitive problem or coma.
- Workup: CBC, CMP, UTI + culture, reconcile med list, evaluate for alcohol/drug use.
- Watch for somnolence, agitation, inability to follow conversation.

(b) **BEFORE COGNITION APPOINTMENT**

- Identify caregiver. Document caregiver and contact information. Make sure signed release of information is on file.
- Contact caregiver. Stress importance of caregiver presence at cognition appt. Ask caregiver to bring all pill bottles, including OTCs and supplements. Discuss what visit will entail:
  - Patient should arrive 30 minutes before scheduled appt. MA administers MoCA while caregiver completes FAQ and stress thermometer in separate room. Results are given to the PCP before appt.

(c) **RED FLAGS**

- Age <65
- Family reports rapid progression or significant decline from baseline
- Upper motor neuron signs (upgoing toes, hyperreflexia, myoclonus)
- Parkinsonism
- Focal neurologic deficit
- Significant gait abnormality
- Seizures
- Language dysfunction

(d) **INDICATIONS FOR MHI REFERRAL**

- Behavioral disturbance
- Coexisting substance dependence (benzodiazepines, alcohol, narcotics)
- Late onset psychosis
- Preexisting psychiatric diagnosis that has been exacerbated by cognitive impairment
- Moderate to severe depression
- Depression refractory to treatment

(e) **HISTORY AND PHYSICAL**

<table>
<thead>
<tr>
<th>Look for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality changes</td>
</tr>
<tr>
<td>Weight changes</td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td>Hearing/vision</td>
</tr>
<tr>
<td>Dysphagia/dysarthria</td>
</tr>
<tr>
<td>Parkinsonism</td>
</tr>
</tbody>
</table>

(f) **LABS (IF NOT DONE IN LAST 12 MONTHS)**

- B12, TSH, CBC, CMP
- If Indicated:
  - HIV, RPR, ESR, CRP

(g) **RECONCILE MED LIST**

- Ask patient/caregiver to bring all medications including OTC and herbal supplements in their original bottles
- Identify whether anyone is helping patient manage medications
- Ask whether a pill box is being used (PRNs should not go in pill box)
- Assess medication adherence
- Evaluate medications
  - Drug-drug interactions?
  - Appropriate dose for age and renal function?
  - Medications with adverse cognitive effects? (See table 6 on page 17.)

(h) **BRAIN IMAGING**

- Structural brain imaging recommended for the evaluation of dementia
- Non-contrast MRI preferred. Indicate “IHC Dementia Protocol.”
- If MRI contraindicated, order non contrast CT
- Do not reimage for typical cases if MRI has been done within previous 3 years

(i) **NEUROLOGY CONSULT (INCLUDE MRI)**

Indications for referral (AFTER delirium rule out/treated)
- Atypical presentation or rapid progression
- Neurologic deficits or findings
- Patient or family request for neurology consult or specialized testing or imaging.
- Behavioral manifestations that are suspicious for frontotemporal dementia
- Dementia in setting of another neurologic disorder such as Parkinson’s disease
- Parkinsonism (tremor, slow movement, impaired speech, stiffness, orthostatic hypotension)
- Indicate reason (dementia), any red flags, whether urgent consult is needed
- Findings on brain image(s)

(j) **REFERRAL TO NEUROPSYCHOLOGY**

- Assist with differential diagnosis
- Identify cognitive/emotional strengths and limitations
- Address patient/family adjustment/intervention/education for patients with MCI and dementia
- Assess capacity/safety (including driving)/supervision/assisted-living needs
- Manage psychiatric and behavioral symptoms related to cognitive impairment
- Differentiate between dementia and pseudodementia
- If pseudodementia: Evaluate to what extent psychiatric symptoms are contributing to cognitive deficit

(k) **DEMENTIA (MAJOR NEUROCOGNITIVE DISORDER)**

Criteria (based on information from DSM-5)
- Test-verified reduction in cognitive capacity (MoCA ≤ 25) is not caused by delirium or another mental disorder.
- The cognitive reduction inhibits performance of daily life activities (such as paying bills or managing medications).

Specify:
- Without behavioral disturbance
- With behavioral disturbance (specify disturbance): (e.g., psychotic symptoms, mood disturbance, agitation, apathy, or other behavioral symptoms)

Specify current stage:
- Mild: Difficulties with IADLs (e.g., housework, managing money), FAQ ≥ 9
- Moderate: Difficulties with basic ADLs (e.g., feeding, dressing)
- Severe: Fully dependent
MILD COGNITIVE IMPAIRMENT (MCI) TREATMENT AND CARE MANAGEMENT

MCI may be classified as amnestic (primarily affects memory) or nonamnestic (primarily affects decision-making, judgment, or visual perception). Patients at this stage of cognitive impairment typically do not require daily caregiving and can still perform the same daily activities; although, they may require more time to complete tasks. Recommended treatment includes:

- Evaluating and treating any cerebrovascular risk factors (cholesterol, obesity, etc.)
- Discussing with patient brain health and lifestyle modifications
- Recommending coping strategies (see [http://www.alz.org/i-have-alz/tips-for-daily-life.asp](http://www.alz.org/i-have-alz/tips-for-daily-life.asp))
- Possible off-label use of a cholinesterase inhibitor based on provider-patient discussion (see medication tables on page 15 – 16).

Brain health and lifestyle modifications

Most major scientific organizations encourage some form of the Mediterranean diet for prevention of major chronic diseases including Alzheimer’s disease and other dementias. A Mediterranean diet is rich in fruits, vegetables, nuts, whole grains, legumes, olive oil, and lean proteins with limited sugar, red meat, and unhealthy fat (for more information, access Intermountain’s fact sheet: The Mediterranean Diet). This type of diet has been associated with slower cognitive decline in adults. However, it is still unknown whether the Mediterranean diet can prevent progression of mild cognitive impairment and dementia.

Regular social interaction and exercise have been shown to reduce the risk of cognitive decline in healthy seniors and may improve or delay the progression of existing impairment. For example, research indicates that people with regular social ties are significantly less likely to demonstrate cognitive decline compared to those who are lonely or isolated.

A meta-analysis of randomized controlled trials shows evidence of improved cognition in cognitively impaired adults who exercise. Cross-sectional studies demonstrate significantly larger hippocampal and gray matter volume among physically fit seniors who maintain a program of 30 minutes of aerobic activity 3 times a week compared to those who were more sedentary. In addition to providing a neuroprotective effect, aerobic/cardiovascular exercise may also attenuate cognitive decline by mitigating cerebrovascular risks.

Overall studies suggest that people with high levels of aerobic physical activity are less likely to develop dementia. It is unclear if beginning exercise in later life can prevent dementia. A trial of exercise in normal seniors did not find any improvement in cognitive function.

KEY RECOMMENDATIONS

- Evaluate and treat any cerebrovascular risk factors:
  - Hypertension (refer to Management of High Blood Pressure CPM)
  - Obesity
  - Hyperlipidemia (refer to Assessing and Managing Cardiovascular Risk and Cholesterol CPM)
- Counsel on brain health and lifestyle modifications such as following The Mediterranean Diet fact sheet, exercising, and maintaining social interaction.

“BRAIN GAMES”

There is minimal evidence to suggest that commercially marketed brain games prevent or delay progression of dementia. However, cognitive activity based on the patient’s interests and abilities should be encouraged.

WEIGH BENEFITS VS. STRESS OF LIFESTYLE CHANGES

The stress of lifestyle change (starting an exercise program or new diet) may outweigh any benefit to a patient with cognitive impairment. The greater the level of impairment, the greater the stress of life changes.

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Currently, non-pharmacologic interventions are shown to have a greater effect than medications on the quality of life of dementia patients and their caregivers. For this reason, first-line treatment should focus on comprehensive care planning and management.\textsuperscript{AGS1, APA2}\textsuperscript{RAB1} Medications can be helpful and should be offered to all patients; however, effect sizes are small and differ among patients.\textsuperscript{RAB1}

### Comprehensive Care Planning

Essential components of care planning for dementia patients (see table 3) include providing education, caregiver support, and non-pharmacologic interventions. As dementia progresses, caregiver stress increases and can impact caregiver health. Early care planning to identify and mobilize resources has been shown to preserve caregiver health, which, in turn, helps caregivers maintain a predictable home environment where the patient will function the best for the longest period of time.\textsuperscript{MIT1, VIC} The care plan is thus a critical part of dementia treatment and primary care providers should discuss how best to work with care managers to provide care planning in a way that makes the best use of individual practice resources.

### Table 3. Guideline for non-pharmacological treatment of dementia\textsuperscript{CAL, ODE, FEI}

<table>
<thead>
<tr>
<th>Care Plan Area</th>
<th>Care Action (as appropriate for individual patient symptoms and needs)</th>
<th>Physician</th>
<th>Care Manager*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient/ Caregiver Education</strong></td>
<td>• Provide referral to community resources (area agency on aging, see resource list for others)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Provide Alzheimer’s Association hotline 1-800-272-3900 (include in resources)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Provide printed materials (search on iPrint store)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Care Guide</strong></td>
<td>• Assess patient and caregiver goals annually</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Refer to care manager for care plan</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Provide nutrition (diet) counseling, or refer to a registered dietician nutritionist (RDN)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Exercise: Silver Sneakers\textsuperscript{®}, LiveFit, MoveFit (for earlier stages)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Prescribe medications if indicated (see pages 10 – 11, 14 – 18)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• (If homebound) Refer to Home Health (see coordination checklist in sidebar on page 10)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>• (If not homebound) Refer to outpatient OT (functional assessment, home safety evaluation)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Evaluate driving (see pages 12 – 13)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Involve family in medication management</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Enroll in Safe Return program if patient wanders</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Identify financial helper/oversight</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Evaluate need for supervision at home</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Evaluate for elder abuse (hygiene, dress, bruises, skin breakdown, malnutrition)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Refer to Stepping On if at high risk for falls (early stage)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Maximize Function</strong></td>
<td>• Evaluate vision and hearing (refer if appropriate)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Refer to speech therapy if indicated</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Caregiver Support</strong></td>
<td>• Assess for caregiver burden at regular intervals (see Stress Thermometer on page 27)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Refer to resources for caregiver support</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Advance Care Planning</strong></td>
<td>• Recommend completing advance directive (early stages/patient has decision-making capacity) and POLST (patient if early stage, family if later stage)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Discuss preferences about living situation</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Evaluate for hospice (late stage)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>At Home</strong></td>
<td>• Assess/advise on social engagement and intellectual stimulation</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Advise on establishing a routine</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Advise on physical activity</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Advise on sleep hygiene</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

*May consult with social worker (as needed) if available/appropriate
Pharmacological Interventions (see algorithm on page 11)

Pharmacologic interventions have been shown to have a modest effect in some patients.

Currently, there is no cure for dementia, and pharmacologic interventions are used to delay disease progression and treat cognitive symptoms. The decision to begin therapy should be based on evaluation of the patient and the risks and benefits associated with medication use. Medication treatments for dementia (detailed on pages 15 – 16) reflect the strength of the evidence derived from literature review, package inserts, and experience from clinical experience.

Medications approved for the treatment of dementia include:

- The cholinesterase inhibitors — **donepezil, rivastigmine, and galantamine**
- The glutamate antagonist — **memantine**

While the effects of the medications are modest, they have been shown to improve or maintain scores on cognitive tests as well as delay nursing home placement in some patients. They may help with agitation and other behavioral disturbances as well. The risks and benefits associated with these medications as well as patient preferences should be taken into account when prescribing, and patients should be monitored for medication effects.

Cholinesterase inhibitors

Studies have shown that these medications modestly delay the worsening of symptoms for 6 – 12 months in about half of the patients who use them. More specifically, on a 70-point scale measuring cognitive function, the mean difference of change from baseline between the cholinesterase inhibitor and placebo groups is less than 4 points. Evidence for benefits on behavioral, quality-of-life, and time-to-institutionalization outcomes is also limited and shows inconsistent results.

If a provider opts to use a cholinesterase inhibitor, they should choose from those detailed in table 4 (on page 15) based on tolerability, adverse effects, ease of use, and cost.

After a patient has received the maximum tolerated medication dose for eight weeks, evaluate a patient’s symptoms, stopping treatment if there has been no improvement in symptoms. Only continue medication if an improvement has been noted.

NMDA Antagonist

Memantine is the only currently available NMDA antagonist.

Similar to the cholinesterase inhibitors, the efficacy of memantine is modest on cognition and activities of daily living. However, it has demonstrated a benefit on behavioral outcomes including aggression, delusions, and irritability.

While it appears to have fewer side effects in comparison to the cholinesterase inhibitors, memantine should be reserved for patients with moderate-to-severe Alzheimer’s dementia or vascular dementia as there is little evidence of benefit for patients with milder forms of Alzheimer’s dementia or other dementias.

There is also some evidence to suggest that memantine may be disease modifying; therefore, it may be continued even if no clinical improvement is seen after taking the medication for a period of time.
Combination Medication
Memantine may also be used in combination with a cholinesterase inhibitor in patients with advanced disease. A recent meta-analysis showed a small benefit in cognition, behavioral disturbances, and activities of daily living when combination therapy was used in moderate-to-severe Alzheimer’s dementia patients.\textsuperscript{MAT}

Medications to Avoid in those with Dementia
The American Geriatrics Society’s Beers criteria identifies medications that may be inappropriate for elderly patients, because of an increased risk of adverse events.\textsuperscript{AGS2}
Many of the medications listed in the Beers criteria cause problems particularly in patients with dementia. For example, anticholinergic and sedative medications are associated with memory impairment, functional decline, hallucinations, and increased risk for falls.\textsuperscript{CAR, FOX} Antipsychotic medications used to manage the behavioral symptoms of dementia are associated with an increase in mortality.\textsuperscript{LEN}
Table 6 on page 17 outlines medications that should be used cautiously in patients with dementia as well as recommended alternatives.

ALGORITHM 2: Dementia Treatment

**DEMENTIA DIAGNOSED**

BEGIN non-pharmacologic treatment (see care plan guideline)
DISCUSS pharmacologic treatment

CONSIDER prescribing medications by dementia type
(See CPM medication tables for dosing and details about specific medications)

<table>
<thead>
<tr>
<th>Alzheimer's disease</th>
<th>Vascular and mixed dementias\textsuperscript{KAV}</th>
<th>Fronto-temporal, Lewy-Body, and Parkinson’s Dementias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate/severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donepezil*</td>
<td>• Donepezil*</td>
<td>• Refer to Neurology</td>
</tr>
<tr>
<td></td>
<td>• Add memantine*</td>
<td>• Avoid antipsychotics in Lewy-body and Parkinson’s dementias (if anti-psy chotic needed, choose seroquel at lowest possible dose (12.5 mg QHS))</td>
</tr>
<tr>
<td></td>
<td>Immediate release: 5 mg once daily, tiritate at 5 mg/ wk (intervals may be longer) to a goal dose of 20 mg/day</td>
<td>• Cholinesterase inhibitors may or may not be helpful in frontotemporal dementia</td>
</tr>
<tr>
<td></td>
<td>• Aspirin (unless contraindicated)</td>
<td>• Memantine is not recommended</td>
</tr>
<tr>
<td></td>
<td>• Treat vascular risk factors as appropriate (hypertension, diabetes, high cholesterol)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Donepezil*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Consider memantine* (moderate to severe stages)</td>
<td></td>
</tr>
</tbody>
</table>

*See medication tables on page x for more detailed dosing and side effects.

ASSESS medication and adjust dosing as necessary at each follow-up appointment

SUPPLEMENTS/OTHER MEDICATIONS
There is not good quality evidence that vitamins, supplements, and non-dementia prescription medications are effective for preventing or treating dementia. However, significant patient interest in these medications warrants a summary of current evidence. Tables 7 and 8 on page 18 provide usual dosing, potential to either prevent or treat dementia, and safety considerations for these medications.

NOTE: When caring for patients with dementia, stopping offending medications is often a far more important/effective intervention than starting a new medication, such as a cholinesterase inhibitor, and should always be considered first.
Evaluation of driving safety (see algorithm on page 13)

Dementia increases the risk of motor vehicle accidents, but some patients with mild dementia can safely drive provided they have an on-road assessment, no history of accidents, and no concerns from family members.

Performing an objective driving evaluation (either with on-road testing at the DMV or through an occupational therapy consultation) is a critical piece of determining whether or not a patient with mild or moderate dementia will drive safely. Driving ability should be revisited at least annually. It is important to assess independent risk factors apart from cognitive impairment such as a history of crashes and traffic violations. Patients with dementia are often told they can drive “if only in the area”; however, it is important to note that driving <60 miles per week is an independent risk factor for crashes. Caregiver report is essential for evaluating driving ability.

Driving cessation is perhaps one of the most challenging areas that the primary care provider faces in the management of a patient with dementia, and this can strain the physician-patient relationship. Preserving this relationship depends on the patient trusting that the provider has their best interest at heart.

When recommending driving cessation, key considerations for the provider include:

- Understand that loss of driving privileges represents a loss of independence for the patient, which can be very difficult to deal with.
- Assess patients’ transportation needs and work with patient and family to come up with reliable alternate forms of transportation that will meet their needs.
- Plan to allow extra time for these discussions as they are very sensitive in nature.
- Stress that the goal is to preserve independence but that safety must come first.

Management of psychological and behavioral problems (see algorithm on page 14)

Behavioral or neuropsychiatric symptoms of dementia can include agitation, delusions, aggression, hallucinations, anxiety, sleep disturbance, apathy, depression, and disinhibition — all of which cause great distress for caregivers and may result in the patient requiring institutionalization. Caregivers should be asked regularly about such behavioral symptoms; the Behav5 questionnaire (see page 28) should be administered; and caregiver stress should be monitored using the Stress Thermometer (see page 27).

For any newly observed behaviors, evaluate illness, pain, nutrition, sleep, constipation, dehydration, and medication side effects as possible contributors, and treat if present.

Initially, treat behavioral disturbances by determining the exact behavior as well as circumstances in which it occurs. Identify any triggers for the behavior such as boredom, lack of supervision, lack of daytime structure, chaotic environment, or inappropriate communication techniques (e.g., arguing). Be sure to:

- Ensure patient safety (see Safe Return Program for patients who are wandering).
- Provide caregiver support and education, and teach caregivers effective communication strategies (this approach has the strongest evidence).
- Modify the environment (see general approaches in the sidebar at left).

Medications are second-line treatment and should be employed only for severe cases.
and/or when non-pharmacologic treatments have been employed. Citalopram can be helpful for treating behavioral disturbance and is well tolerated.\textsuperscript{SEI, POR} Antipsychotics can be considered for severe cases, but benefits must be weighed carefully with significant medication risk. Inform caregivers about possible side effects including FDA black box warnings about sudden cardiac death.\textsuperscript{SEI, SIN2}

Patients who have a behavioral disturbance should be referred to the care manager, and the patient should be followed frequently.\textsuperscript{SEI, COR, GIT2, KAL2}

**ALGORITHM 3: Driving Assessment**

**MILD, MODERATE, OR SEVERE DEMENTIA DIAGNOSED/ASSESSED PATIENT DRIVES OR PLANS TO RESUME DRIVING**

- **Valid drivers license?**
  - **yes**
    - **Patient signs disclosure on Functional Ability Evaluation Medical Report form?**
      - **yes** → **COMPLETE form (a)**
      - **no** → **If severe, ADVISE driving cessation**
    - **no** → **If moderate/mild, ASSESS risk factors (b)**
  - **no** → **REPORT to Utah Driver’s License Division (DLD) (c)**

- **If severe**, **ADVISE driving cessation**
- **If moderate/mild**, **ASSESS risk factors (b)**

**DISCUSS** driving ability and risks

- **High risk?**
  - **yes** → OT consult if available; if no OT, recommend DMV road test
  - **no** → REVIEW driving ability at each 6-month follow-up visit

**ALGORITHM NOTES**

(a) **COMPLETING THE FUNCTIONAL ABILITY EVALUATION MEDICAL REPORT FORM**
- MARK Learning/Memory category at the appropriate level (6–8).
- SPECIFY “driving skills test.”
- MARK all other pertinent categories.
- SIGN form, and FAX it to UT DLD.
- **NOTE:** Driving tests cannot be performed for patients at Level 8.

(b) **RISK FACTORS**
- History of traffic citation(s)
- History of crash(es)
- Caregiver report of unsafe driving
- Self-limited driving (daylight, restricted area, limited mileage)
- Impaired judgment
- Coexisting medical conditions
  - Alcoholism
  - Sedating meds
  - Sleep disorders
  - Motor impairment
  - Neurologic impairment

(c) **REPORTING TO DLD**
- Use form DI 117 (see page 29).
- Refer patient to care management or other resources for UT ID card and alternate transportation sources.

Driving Assessment and Reporting Forms

See pages 29–30 for full-size versions of these driving forms:
- Utah Department of Public Safety Report (DI-117)
- Utah Drivers’ License Division: Functional Ability Evaluation Medical Report
ALGORITHM 4: Management of Behavioral and Psychological Symptoms

ALGORITHM NOTES
(a) Behavioral and psychological symptoms of dementia
Ask if patient has shown:
- Delusions
- Hallucinations
- Agitation
- Aggression
- Depression
- Anxiety
- Apathy
- Elation
- Disinhibition
- Irritability
- Sleep disturbance
- Appetite and eating disturbances

(b) Evaluate the disturbance
Describe the behavior:
- Patient Considerations
  - What was the exact behavior and what was the patient’s perspective?
  - Is the behavior a threat to safety?
- Caregiver Considerations
  - How distressing was the behavior?
  - Why was it distressing?
  - How does the caregiver handle it?
- Environmental Considerations
  - When/where did the behavior occur?
  - Who was present?
  - What happened before and after?

(c) Treat/intervene
- Patient Interventions
  - Discontinue meds with adverse affects
  - Manage pain.
  - Treat infection, dehydration, constipation
  - Improve sleep hygiene
  - Treat impaired vision/hearing
- Caregiver Interventions
  - Provide education on dementia
  - Teach effective communication strategies
- Environmental Interventions
  - Create a predictable daily routine
  - Provide intellectual stimulation and physical activity suitable for dementia stage
  - Simplify/enhance environment as appropriate
- Referrals
  - Care manager
  - Consider neuropsychology consultation

(d) Treatments/interventions by disturbance type
First-line treatment for all disturbance types: Implement non-pharmacological interventions
- Train caregivers in behavioral management strategies (see sidebar on page 12)
- Exercise
  - Music
  - Participation in pleasant events
- Manage caregiver stress: counseling, support groups, local resources (area agency on aging, Alzheimer’s groups, in-home help, adult day care, out of home respite care

Depression/Anxiety
- Cholesterol inhibitor
- Memantine (as appropriate by diagnosis)
- Sertraline or citalopram (start at low dose and titrate slowly)

Agitation/Aggression/Psychosis
- Cholinesterase inhibitor
- Memantine
- SSRI if symptoms mild
- Antipsychotic if severe symptoms or non-response to SSRI (see table 6 on page 17 for cautions)

Sleep Disturbance
- Sleep hygiene:
  - Cut off electronics in evening
  - Discontinue caffeine
  - Minimize daytime napping
  - Provide exercise, stimulation, and exposure to light during day
  - Trazodone: (25-100 mg given 1 hour < bedtime)
  - Melatonin (limited evidence)
### Table 4. Medications used to treat cognitive impairment in dementia (see table 5 for strength of evidence)

<table>
<thead>
<tr>
<th>Class 1,2</th>
<th>Medication (common brands)</th>
<th>Dosage guidelines*</th>
<th>Tier/Cost**</th>
<th>Side effects and other comments</th>
</tr>
</thead>
</table>
| Cholinesterase Inhibitors | donepezil (Aricept) | Initial 5 mg, may increase to 10 mg daily after 4 – 6 weeks.  
May increase to 23 mg daily, after patient has been taking 10 mg daily for at least 3 months. Consider stepwise titration to donepezil 15 mg/day for 1 month, followed by a dose increase to 23 mg/day.  
(Maximum dose of 23 mg daily for mod-severe AD/PDD) | 1 (generic), $3 (brand), $$$ | Dose-related GI side effects (nausea, vomiting, diarrhea) typically occur during first month and usually subside.  
Insomnia, abnormal dreams, vivid dreams, and nightmares can occur. Morning dosing may eliminate these events. |
| Oral | rivastigmine (Exelon) | | 1 (generic oral), $3 (brand oral and patch), $$$ | Dose-related GI side effects (nausea, vomiting, diarrhea) occur mostly during titration and decrease during maintenance.  
GI side effects are also less likely to occur when the patch is used rather than the capsules.  
Closely monitor for increased GI side effects in patients < 50 kg, and consider reducing the dose if these occur.  
Oral formulation must be taken with a meal.  
If dosing is interrupted for more than 3 days, treatment should be restarted at the initial dose and titrated back up.  
Least likely to interact with other medications.  
Consider using patch in patients with dysphagia. |
| Patch | galantamine (Razadyne) | Immediate-release: at 4 mg twice daily with meals.  
Titrated: to 8 mg twice daily after 4 weeks, then may increase to 12 mg daily after at least another 4 weeks.  
Extended-release: at 8 mg daily with meals.  
Titrated: to 16 mg once daily after 4 weeks, then may increase to 24 mg daily once daily after another 4 weeks.  
Moderate renal or hepatic impairment: Give max dose of 16 mg daily.  
Avoid if CrCl < 9 mL/min or Child-Pugh score 5 – 9. | 1 – 2 (generic), $2 (Brand IR), $3 (Brand ER), $$$ | GI side effects (nausea, vomiting, diarrhea, anorexia, weight loss) are most common side effects and may occur more frequently than with donepezil.  
Lucid dreams are possible.  
Medication must be taken with a meal. |
| Immediate-release | memantine (Namenda) | Immediate release: at 5 mg once daily.  
Titrated: to a goal dose of 20 mg/day in 5 mg increments at intervals of at least 1 week. (Use twice daily dosing if more than 5 mg daily.)  
Extended-release | 1 – 2 (generic), $2 (Brand IR), $3 (Brand ER), $$$ | Medication has fewer side effects than cholinergic agents.  
Dizziness is the most common side effect.  
Medication may increase delusions and agitation, especially in patients with LBD. |
| Extended Release | memantine/donepezil (Namzaric) | Use memantine 28 mg/donepezil 10 mg once daily.  
CrCl<30 mL/min: Use memantine 14 mg/donepezil 10 mg daily. | 3 (Brand), $$$ | See information above for memantine and donepezil. |

* Some dosage guidelines are based on usual care experience and may differ from manufacturer’s package data.
** Tier 1 = Generic; Tier 2 = Preferred Brand; Tier 3 = Non-Preferred Brand. Cost is based on 30-day actual cost (not copay), and on generic, when available:  
$=$1–25; $$=$26–75; $$$=$76–150; $$$$$= > $1500
<table>
<thead>
<tr>
<th>Medication</th>
<th>Alzheimer’s Disease</th>
<th>Lewy Body Dementia</th>
<th>Parkinson's Disease Dementia</th>
<th>Vascular Dementia</th>
<th>Mixed Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>donepezil (Aricept)</td>
<td>Mild to severe — A</td>
<td>B\textsuperscript{MAL}</td>
<td>B\textsuperscript{DUR2}</td>
<td>B\textsuperscript{MAL}</td>
<td>No evidence</td>
</tr>
<tr>
<td></td>
<td>RDG, COU2, FAR, DOO2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rivastigmine (Exelon)</td>
<td>Mild to moderate — A\textsuperscript{BR2}</td>
<td>B\textsuperscript{MCK3}</td>
<td>B\textsuperscript{EMR}</td>
<td>No evidence</td>
<td>No evidence</td>
</tr>
<tr>
<td>galantamine (Razadyne)</td>
<td>Mild to moderate — A\textsuperscript{DL, WIL1}</td>
<td>No evidence</td>
<td>No evidence</td>
<td>B\textsuperscript{ERK}</td>
<td>B\textsuperscript{ERK, AUC}</td>
</tr>
<tr>
<td></td>
<td>Severe — B\textsuperscript{GAL}</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>memantine (Namenda)</td>
<td>Mild to severe — A\textsuperscript{REI}</td>
<td>No evidence</td>
<td>No evidence</td>
<td>C\textsuperscript{KAV}</td>
<td>No evidence</td>
</tr>
<tr>
<td>memantine/donepezil (Namzaric)</td>
<td>Moderate to severe — A\textsuperscript{HOW}</td>
<td>No evidence</td>
<td>No evidence</td>
<td>No evidence</td>
<td>No evidence</td>
</tr>
</tbody>
</table>

* Strength of evidence key: (A) = Based on data from large controlled trials; (B) = Based on data from smaller controlled trials; (C) = Based on expert opinion, open-label data, or usual-care experience; (D) = No acute efficacy
<table>
<thead>
<tr>
<th>Medication Class/Examples</th>
<th>Adverse Effects</th>
<th>Therapeutic Alternatives</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antihistamines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Diphenhydramine (Benadryl)</td>
<td>• Constipation</td>
<td>• cetirizine 5 – 10 mg daily</td>
<td></td>
</tr>
<tr>
<td>• Hydroxyzine (Atarax)</td>
<td>• Delirium</td>
<td>• fexofenadine 60 mg twice daily</td>
<td></td>
</tr>
<tr>
<td>• Doxylamine (Unisom)</td>
<td>• Dry mouth</td>
<td>• loratadine 10 mg daily</td>
<td></td>
</tr>
<tr>
<td>• Chlorpheniramine (Chlorphen)</td>
<td>• Sedation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Loxoridine (Clorphen)</td>
<td>• Urine retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benzodiazepines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Alprazolam (Xanax)</td>
<td>• Falls</td>
<td>• Buspirone titrated to 15 mg twice daily&lt;sup&gt;COO&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>• Clonazepam (Klonopin)</td>
<td>• Delirium</td>
<td>• SSRIs (dosis?)</td>
<td></td>
</tr>
<tr>
<td>• Diazepam (Valium)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antiemetics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dimenhydrinate (Dramamine)</td>
<td>• Constipation</td>
<td>• Ondansetron</td>
<td></td>
</tr>
<tr>
<td>• Meclizine (Antivert)</td>
<td>• Delirium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Promethazine (Phenergan)</td>
<td>• Dry mouth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Metoclopramide (Reglan)</td>
<td>• Sedation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ondansetron</td>
<td>• Urine retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antipsychotics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Aripiprazole (Abilify)</td>
<td>• QTc prolongation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Clozapine (Clozaril)</td>
<td>• Increased mortality when used to treat dementia-related behavioral issues in the elderly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Haldol (Haloperidol)</td>
<td>• Risperidone 0.5 – 1 mg daily&lt;sup&gt;KA&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Olanzapine (Zyprexa)</td>
<td>• Quetiapine 12.5 mg daily&lt;sup&gt;KA&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Velpirine 5 mg daily</td>
<td>• Sertraline 50 – 200 mg daily&lt;sup&gt;FN&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Citalopram 10 – 20 mg daily&lt;sup&gt;FN&lt;/sup&gt;</td>
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<tr>
<td><strong>Muscle relaxants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Carisoprodol (Soma)</td>
<td>• Cognitive impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cyclobenzaprine (Flexeril)</td>
<td>• Sedation</td>
<td>• Physical therapy</td>
<td></td>
</tr>
<tr>
<td>• Metaxalone (Skelaxin)</td>
<td>• Urinary retention</td>
<td>• Baclofen 5 mg TID PRN</td>
<td></td>
</tr>
<tr>
<td>• Methocarbamol (Robaxin)</td>
<td></td>
<td>• Tizanidine (Zanaflex) 2 mg every 5 – 6 hours as needed</td>
<td></td>
</tr>
<tr>
<td>• Orphenadrine (Norflex)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tricyclic Antidepressants (TCA)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Amitriptyline (Elavil)</td>
<td>• Constipation</td>
<td>• SSRIs for depression</td>
<td></td>
</tr>
<tr>
<td>• Clomipramine (Anafranil)</td>
<td>• Delirium</td>
<td>• Trazodone 50 – 100 mg at bedtime for insomnia</td>
<td></td>
</tr>
<tr>
<td>• Imipramine (Tofranil)</td>
<td>• Dry mouth</td>
<td>• Lidocaine or capsicin for neuropathic pain</td>
<td></td>
</tr>
<tr>
<td>• Desipramine 25 mg daily OR *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nortriptyline 25 mg daily OR *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antispasmodics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Oxybutynin (Ditropan)</td>
<td>• Constipation</td>
<td>• Darifenacin 7.5 mg daily</td>
<td></td>
</tr>
<tr>
<td>• Tolterodine (Detrol)</td>
<td>• Delirium</td>
<td>OR *</td>
<td></td>
</tr>
<tr>
<td>• Dicyclomine (Bentyl)</td>
<td>• Dry mouth</td>
<td>• Mirabegron 25 mg daily</td>
<td></td>
</tr>
<tr>
<td>• Hyoscymine (Levsin)</td>
<td>• Sedation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Darifenacin 7.5 mg daily</td>
<td>• Urine retention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Loperamide (Imodium) 4 mg followed by 2 mg after each loose stool (up to a maximum of 16 mg/day)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Baritutates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Butalbital</td>
<td>• Voltaren gel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tramadol (ultram) 50 mg every 4 – 6 hours as needed, not to exceed 300 mg/24 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Acetaminophen 500 mg/Caffeine 65 mg every 6 hours as needed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nonbenzodiazepam hypnnotics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Eszopiclone (Lunesta),</td>
<td>• Trazodone (Desyrel) 50 – 100 mg every night at bedtime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Zolpidem (Ambien)</td>
<td>• Melatonin (limited evidence) 3 – 5 mg every night at bedtime</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 7. Supplements

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Usual Dosing</th>
<th>Potential to: Prevent Dementia</th>
<th>Safety When Used as Directed</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Vitamin E** (alpha-tocopherol) | 800 – 2000 IU daily  | Possibly Evidence: Limited     | Possibly Evidence: Limited    | • Some risks  
• Risk of side effects, such as bleeding, increase as higher doses (> 1,000IU) are used.  
Maintaining healthy levels of vitamin E in the diet may be more advantageous than supplementation. A meta-analysis showed increasing dietary intake of vitamins E and C may reduce the risk of developing Alzheimer’s disease by around 20%. |
| **Ginkgo biloba** | 120 – 240 mg daily  | Unlikely Evidence: Strong      | Likely Evidence: Limited      | Very likely safe  
DHA may improve symptoms of dementia in patients with dementia due to thrombotic cerebrovascular diseases. |
| **Long chain omega-3 fatty acids, DHA and EPA** | 200 – 3000 mg daily | Likely Evidence: Strong        | Unlikely Evidence: Limited    | Very likely safe when dose is < 3 g/day |
| **Curcumin** (found in turmeric) | 400 mg – 4 g daily | Possibly Evidence: Limited     | Possibly Evidence: Limited    | Very likely safe |
| **Cinnamon** | 120 – 6000 mg extract daily | Possibly Evidence: Limited     | Possibly Evidence: Limited    | Very likely safe |
| **Vitamin B12** | 500 mcg/day1         | Unlikely Evidence: Limited     | Unlikely Evidence: Limited    | Probably safe |
| **Vitamin B6** | 20 mg/day            | Unlikely Evidence: Limited     | Unlikely Evidence: Limited    | Probably safe |
| **Vitamin B9** | 1 mg/day             | Controversial Evidence: Limited | Controversial Evidence: Limited | Probably safe |
| **Resveratrol** | 500 – 2000 mg daily  | Possibly Evidence: Limited     | Possibly Evidence: Limited    | Probably safe  
Patients taking anticoagulants and antiplatelets should avoid resveratrol due to increased bleeding risk. |

### Table 8. Other Pharmacologic Agents

<table>
<thead>
<tr>
<th>Other Pharmacologic Agents</th>
<th>Usual Dosing</th>
<th>Potential to Prevent Dementia</th>
<th>Safety When Used as Directed</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Selegiline** | 10 mg/day    | • No evidence  
• Evidence: N/A | • Controversial  
• Evidence: Limited | Some risks  
Carries a black-box warning for suicidal thoughts and behavior |
| **Statins** | Varies based on statin | • Possibly  
• Evidence: Limited | • Unlikely  
• Evidence: Limited | Likely safe |
| **Estrogen Replacement** | 0.5 – 2 mg/day | • Controversial  
• Evidence: Moderate | • No evidence  
• Evidence: Limited | Some risks |
| **Anti-Inflammatory Drugs** | Varies based on medication | • Controversial  
• Evidence: Moderate | • No evidence  
• Evidence: Limited | Some risks |
RESOURCES

CPM Access

• Viewing online: Open the appropriate topic pages via the Neurosciences Clinical Program pages on either intermountain.net or intermountainphysician.org.

• Ordering: Order from Intermountain’s Online Library and Print Store at iprintstore.org. Click the link at right; then, search by key terms, or use the topic menu to browse.

Recommended Patient and Caregiver Education Materials

The Alzheimer’s Association Resources for:

• Patients Newly Diagnosed: http://www.alz.org/i-have-alz/just-diagnosed.asp
• Taking Care of Yourself: http://www.alz.org/i-have-alz/taking-care-of-yourself.asp
• Tips for Daily Life: http://www.alz.org/i-have-alz/tips-for-daily-life.asp
• Taking Action Workbook: http://www.alz.org/i-have-alz/downloads/lwa_pwd_taking_action_workbook.pdf
• Healthy Caregiving: http://www.alz.org/care/alzheimers-dementia-healthy-caregiver.asp
• Tips for Communicating: http://www.alz.org/care/dementia-communication-tips.asp
• Caregiving for Early-Stage Dementia: http://www.alz.org/care/alzheimers-early-mild-stage-caregiving.asp
• Caregiving for Moderate-Stage Dementia: http://www.alz.org/care/alzheimers-mid-moderate-stage-caregiving.asp
• Caregiving for Late-Stage Dementia: http://www.alz.org/care/alzheimers-late-end-stage-caregiving.asp

National Institute on Aging Resources

• Coping with Agitation and Agression: https://www.nia.nih.gov/alzheimers/publication/coping-agitation-and-aggression

Dementia-related fact sheets and other tools

Fact sheets help educate patients and families about mild cognitive impairment and dementia symptoms, staging, treatments, and caregiver support.

• Mild Cognitive Impairment (MCI) — Covers how MCI is diagnosed as well as “brain health” and driving safety.
• Understanding Dementia: First Steps after Diagnosis — Covers what the patient needs to know when first diagnosed, how to cope with the diagnosis, and initial supportive messages for caregivers
• Dementia Self-Care Plan — Covers self-care strategies including diet, exercise, sleep, maximizing function, and being safe
• Alzheimer’s Resources: Utah and Southern Idaho — Lists area agencies on aging and support groups

Patients and their families can find all of these materials, and links to other reliable dementia resources in the Health Library at Intermountain’s public website (intermountainhealthcare.org/dementia).

WHAT DEMENTIA PATIENTS WANT TO KNOW FROM THEIR CAREGIVERS (FROM FOCUS GROUPS)

• Take me and my family seriously if we report a concern about memory.
• Do an objective evaluation of memory.
• Give me a diagnosis.
• Explain how you made the diagnosis.
• Give me information about my diagnosis but don’t just throw it at me. Schedule a follow up in 2 – 3 months to review it with me after I have had time to process the information.
• Tell me and my family what to expect and help us plan for the future.
• Tell me what I and my caregiver can do to help my situation.
• If you aren’t sure how to make the diagnosis or how to treat it, refer me for specialty consultation.
• If you do refer me to a specialist, please coordinate with them and follow up on their recommendations.
• Give me and my family the number for the Alzheimer’s Association, and encourage us to get involved.
• Set up a time for me and my family to meet with your care manager.
OTHER ONLINE RESOURCES/SUPPORT GROUPS

Alzheimer’s Disease
- Alzheimer’s Association — www.alz.org
- National Institute on Aging Alzheimer’s Disease Education and Referral Center (ADEAR) — https://www.nia.nih.gov/alzheimers
- Community Resource Finder — http://www.communityresourcefinder.org/
- Alzheimer’s Navigator — https://www.alzheimersnavigator.org/
- Alzheimer’s Disease Education and Resource Center — https://www.nia.nih.gov/alzheimers
- Music and Memory — http://musicandmemory.org/
- Research:
  - University of Utah Center for Alzheimer’s Care, Imaging, and Research (CACIR) — Memory Study Line 801.587.7888
  - Alzheimer’s Association Trial Match http://www.alz.org/research/clinical_trials/find_clinical_trials_trialmatch.asp
- Find a local support group in Utah: Alzheimer’s Association in Utah
  - General information: Call 801.265.1944 (Salt Lake County office) or 435.669.3664 (Washington County office)
  - For information on support groups, visit: http://www.alz.org/utah/in_my_community_support.asp
  - 24/7 Helpline: 800.272.3900
- Find a local support group in Idaho: Alzheimer’s Association Greater Idaho Chapter
  - General Information: Call 208.206.0041 or visit www.alz.org/Idaho
  - For information on support groups, visit: http://www.alz.org/Idaho/in_my_community_support.asp
  - 24/7 Helpline: 800.272.3900

Dementia with Lewy Bodies
- Dementia with Lewy Bodies — http://www.lbda.org/
- Lewy Body Dementia Association, Inc. — 912 Killian Hill Road S.W., Lilburn, GA 30047
  - LBD Caregiver Link: 800.539.9767
  - National Office (Atlanta, GA): 404.935.6444
  - National Office Fax: 480.422.5434
- Salt Lake Valley LBD Support Group, Raquel Asay
  801.533.0972, rachelar39@gmail.com

Driving Safety

Frontotemporal Dementia
- The Association for Frontotemporal Degeneration (AFTD) http://www.thefaultd.org/
  Radnor Station Building 2, Suite 320, 290 King of Prussia Road, Radnor, PA 19087, 267.514.7221 OR 866.507.7222 (toll free & HelpLine)
- Southwest Region of the AFTD (California, Arizona, Utah, New Mexico, Colorado, Hawaii) — Kathy Urban: kurban.aftd@gmail.com
- FTD and Related Dementias Support Groups
  - Sandy Senior Center, 9310 S 1300 E, Sandy, UT
    Meets the 2nd Wednesday from 10:00 to 11:30 am
    Contact: Bonnie Shepherd, 801.231.3442; bbsherpherd@comcast.net
  - Bingham Creek Library, 4834 W 9000 S, West Jordan, UT
    Meets the 2nd Wednesday from 6:00 to 7:30 pm
    Contact: Jamie Gordon, 801.550.3563; jjgordon3@juno.com
  - National phone-based support group for adult children affected by FTD.
    Scheduled the 3rd Thursday of the month from 5:00 to 6:30 pm.
    Led and organized by University of California, San Francisco:
    Contact for access number: Jamie C. Fong, M.S., CGC, 415.476.8613; jfong@memory.ucsf.edu

Parkinson’s Disease Dementia
National Parkinson Foundation — http://www.parkinson.org/
200 SE 1st Street, Suite 800, Miami, Florida 33131
Toll-free Helpline: 800.4PD.INFO (473-4636)
Fax: 305.537.9901
E-mail inquiries: contact@parkinson.org

Intermountain’s fact sheet — Alzheimer’s Resources: Utah and Southern Idaho — offers detailed information on Utah and Southern Idaho Alzheimers Association Support Groups and Area Agencies on Aging.

Cognitive screening and staging forms: Pages 20-29 feature full-size copies of the Mini-Cog, MoCA (with administration and scoring instructions), caregiver assessment/staging, and driving assessment and reporting forms.
Mini-Cog™ Instructions for Administration & Scoring

ID: __________ Date: ______________

Step 1: Three Word Registration

Look directly at person and say, “Please listen carefully. I am going to say three words that I want you to repeat back to me now and try to remember. The words are [select a list of words from the versions below]. Please say them for me now.” If the person is unable to repeat the words after three attempts, move on to Step 2 (clock drawing).

The following and other word lists have been used in one or more clinical studies. For repeated administrations, use of an alternative word list is recommended.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
<td>Leader</td>
<td>Village</td>
<td>River</td>
<td>Captain</td>
<td>Daughter</td>
</tr>
<tr>
<td>Sunrise</td>
<td>Season</td>
<td>Kitchen</td>
<td>Nation</td>
<td>Garden</td>
<td>Heaven</td>
</tr>
<tr>
<td>Chair</td>
<td>Table</td>
<td>Baby</td>
<td>Finger</td>
<td>Picture</td>
<td>Mountain</td>
</tr>
</tbody>
</table>

Step 2: Clock Drawing

Say: “Next, I want you to draw a clock for me. First, put in all of the numbers where they go.” When that is completed, say: “Now, set the hands to 10 past 11.”

Use preprinted circle (see next page) for this exercise. Repeat instructions as needed as this is not a memory test. Move to Step 3 if the clock is not complete within three minutes.

Step 3: Three Word Recall

Ask the person to recall the three words you stated in Step 1. Say: “What were the three words I asked you to remember?” Record the word list version number and the person’s answers below.

Word List Version: _____ Person’s Answers: ___________________ ___________________ ___________________

Scoring

<table>
<thead>
<tr>
<th>Word Recall: _____ (0-3 points)</th>
<th>1 point for each word spontaneously recalled without cueing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clock Draw: _____ (0 or 2 points)</td>
<td>Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored. Inability or refusal to draw a clock (abnormal) = 0 points.</td>
</tr>
<tr>
<td>Total Score: _____ (0-5 points)</td>
<td>Total score = Word Recall score + Clock Draw score. A cut point of &lt;3 on the Mini-Cog™ has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of &lt;4 is recommended as it may indicate a need for further evaluation of cognitive status.</td>
</tr>
</tbody>
</table>

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References

# MONTREAL COGNITIVE ASSESSMENT (MOCA)

**VISUOSPATIAL / EXECUTIVE**
- Copy cube
- Draw CLOCK (Ten past eleven) (3 points)

<table>
<thead>
<tr>
<th>Copy</th>
<th>Draw CLOCK</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>/5</td>
</tr>
</tbody>
</table>

**NAMING**

<table>
<thead>
<tr>
<th>Rhino</th>
<th>Elephant</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>/3</td>
</tr>
</tbody>
</table>

**MEMORY**
- Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

<table>
<thead>
<tr>
<th>FACE</th>
<th>VELVET</th>
<th>CHURCH</th>
<th>DAISY</th>
<th>RED</th>
<th>1st trial</th>
<th>2nd trial</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No points</td>
</tr>
</tbody>
</table>

**ATTENTION**
- Read list of digits (1 digit/sec.). Subject has to repeat them in the forward order.
- Subject has to repeat them in the backward order.
- Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors.

| FBACMNAAJKLFBAFKDEAAAJAMOFAAB | 2 1 8 5 4 | 7 4 2 | /2 |

**MEMORY (exercise 2)**
- Serial 7 subtraction starting at 100

| 93 | 86 | 79 | 72 | 65 | 4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt | /3 |

**LANGUAGE**
- Repeat: I only know that John is the one to help today. The cat always hid under the couch when dogs were in the room.

|       |       |       |       |       |       | /2 |

**ABSTRACTION**
- Similarity between e.g. banana - orange = fruit

| FACE | VELVET | CHURCH | DAISY | RED | /2 |

**DELAYED RECALL**
- Has to recall words with no cue

| Category cue | Multiple choice cue | /5 |

**ORIENTATION**
- Date, Month, Year, Day, Place, City

| Points for UNCUED recall only | /6 |

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**www.mocatest.org**

Administered by: __________________________

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### MoCA Administration

**PREPARATION:** Fold form (on preceding page) so that the memory word list is NOT shown to the patient. Avoid clocks in the patient’s visual field, if convenient. Give the patient each prompt exactly as scripted below. If the patient asks you to repeat, clarify, or give more time, say: “I’m sorry, but I’m not allowed to tell you/do that.” Record correct responses with ✓ and incorrect responses with X. Additional forms and instruction for special situations, including previous MoCA, visual impairment, non-English, low education, are available at http://www.mocatest.org (login required).

<table>
<thead>
<tr>
<th>Question</th>
<th>Script</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alternate Trail Making</td>
<td>Say: “Please draw a line, going from a number to a letter in ascending order. Begin here [point to 1] and draw a line from 1 then to A then to 2 and so on. End here [point to (E)].”</td>
</tr>
<tr>
<td>2. Visuoconstructional skills (cube)</td>
<td>Point and say: “Copy this drawing as accurately as you can, in the space below.”</td>
</tr>
<tr>
<td>3. Visuoconstructional skills (clock)</td>
<td>Point and say: “Draw a clock. Put in all the numbers and set the time to 10 past 11.”</td>
</tr>
<tr>
<td>4. Naming</td>
<td>Point and say: “Tell me the name of this animal.” [pause, record].</td>
</tr>
<tr>
<td>5. Memory</td>
<td>Say: “This is a memory test. I am going to read a list of words that you will have to remember now and later on. Listen carefully. When I am through, tell me as many words as you can remember. It doesn’t matter in what order you say them.” Read: five words at a rate of one per second. [pause, record]. Say: “I am going to read the same list for a second time. Try to remember and tell me as many words as you can, including words you said the first time.” [pause, record].</td>
</tr>
<tr>
<td>6. Attention</td>
<td>Forward/ backward digit span</td>
</tr>
<tr>
<td>7. Sentence repetition</td>
<td>Say: “I am going to read you a sentence. Repeat it after me, exactly as I say it [pause]: I only know that John is the one to help today.” Following the response, say: “Now I am going to read you another sentence. Repeat it after me, exactly as I say it [pause]: The cat always hid under the couch when dogs were in the room.”</td>
</tr>
<tr>
<td>8. Verbal fluency</td>
<td>Say: “Tell me as many words as you can think of that begin with a certain letter of the alphabet that I will tell you in a moment. You can say any kind of word you want, except for proper nouns (like Bob or Boston), numbers, or words that begin with the same sound but have a different suffix, for example, love, lover, loving. I will tell you to stop after one minute. Are you ready? [Pause] Now, tell me as many words as you can think of that begin with the letter F. [time for 60 sec]. Stop.”</td>
</tr>
<tr>
<td>9. Abstraction</td>
<td>Say: “Tell me how an orange and a banana are alike.” If the subject answers in a concrete manner, then say only one additional time: “Tell me another way in which those items are alike.” If the subject does not give the appropriate response (fruit), say, “Yes, and they are also both fruit.” Do not give any additional instructions or clarification. After the practice trial, say: “Now, tell me how a train and a bicycle are alike” Following the response, administer the second trial, saying: “Now tell me how a ruler and a watch are alike.” Do not give any additional instructions or prompts.</td>
</tr>
<tr>
<td>10. Delayed recall</td>
<td>Say: “I read some words to you earlier, which I asked you to remember. Tell me as many of those words as you can remember.” Make a check mark (✓) for each of the words correctly recalled spontaneously without any cues.</td>
</tr>
<tr>
<td>11. Orientation</td>
<td>Say: “Tell me the date today.” If the subject does not give a complete answer, then prompt accordingly by saying: “Tell me the [year, month, exact date, and day of the week].” Then say: “Now, tell me the name of this place, and which city it is in.”</td>
</tr>
</tbody>
</table>
# MoCA Scoring

<table>
<thead>
<tr>
<th>Question Area</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL SCORE</strong></td>
<td>Sum all subscores (see instructions below) listed on the right-hand side. Add one point for an individual who has 12 years or fewer of formal education, for a possible maximum of 30 points. A final total score of 26 and above is considered normal.</td>
</tr>
<tr>
<td><strong>SUBSCORES</strong></td>
<td></td>
</tr>
<tr>
<td>1. Alternate trail making</td>
<td>Allocate one point if the subject successfully draws the following pattern: 1 −A− 2− B− 3− C− 4− D− 5− E, without drawing any lines that cross. Any error that is not immediately self-corrected earns a score of 0.</td>
</tr>
</tbody>
</table>
| 2. Visuoconstructional skills (cube) | One point is allocated for a correctly executed drawing.  
- Drawing must be three-dimensional  
- All lines are drawn  
- No line is added  
- Lines are relatively parallel and their length is similar (rectangular prisms are accepted)  
A point is not assigned if any of the above criteria are not met. |
| 3. Visuoconstructional skills (clock) | One point is allocated for each of the following three criteria:  
1. Contour (1 pt.): the clock face must be a circle with only minor distortion acceptable (e.g., slight imperfection on closing the circle);  
2. Numbers (1 pt.): all clock numbers must be present with no additional numbers; numbers must be in the correct order and placed in the approximate quadrants on the clock face; Roman numerals are acceptable; numbers can be placed outside the circle contour;  
3. Hands (1 pt.): there must be two hands jointly indicating the correct time; the hour hand must be clearly shorter than the minute hand; hands must be centred within the clock face with their junction close to the clock centre.  
A point is not assigned for a given element if any of the above criteria are not met. |
| 4. Naming                     | One point each is given for the following responses: (1) lion (2) rhinoceros or rhino (3) camel or dromedary.                                                                                                                     |
| 5. Memory                     | No points are given for Trials One and Two                                                                                                                                                                                   |
| 6. Attention                  |                                                                                                                                                                                                                               |
| Forward/backward digit span   | Give one point if there is zero to one errors (an error is a tap on a wrong letter or a failure to tap on letter A).                                                                                                               |
| Vigilance                     | Give one point if there is zero to one errors (an error is a tap on a wrong letter or a failure to tap on letter A).                                                                                                               |
| Serial 7s                     | This item is scored out of 3 points. Give no (0) points for no correct subtractions, 1 point for one correction subtraction, 2 points for two-to-three correct subtractions, and 3 points if the participant successfully makes four or five correct subtractions. Count each correct subtraction of 7 beginning at 100. Each subtraction is evaluated independently; that is, if the participant responds with an incorrect number but continues to correctly subtract 7 from it, give a point for each correct subtraction. For example, a participant may respond “92 – 85 – 78 – 71 – 64” where the “92” is incorrect, but all subsequent numbers are subtracted correctly. This is one error and the item would be given a score of 3. |
| 7. Sentence repetition        | Allocate 1 point for each sentence correctly repeated. Repetition must be exact. Be alert for errors that are omissions (e.g., omitting “only”, “always”) and substitutions/additions (e.g., “John is the one who helped today;” substituting “hides” for “hid”, altering plurals, etc.). |
| 8. Verbal fluency             | Allocate one point if the subject generates 11 words or more in 60 sec. Record the subject’s response in the bottom or side margins.                                                                                             |
| 9. Abstraction                | Only the last two item pairs are scored. Give 1 point to each item pair correctly answered. The following responses are acceptable: Train-bicycle = means of transportation, means of travelling, you take trips in both; Ruler-watch = measuring instruments, used to measure. The following responses are not acceptable: Train-bicycle = they have wheels; ruler-watch = they have numbers. |
| 10. Delayed recall            | Allocate 1 point for each word recalled freely **without any cues.**                                                                                                                                                           |
| 11. Orientation               | Give one point for each item correctly answered. The subject must tell the exact date and the exact place (name of hospital, clinic, office). No points are allocated if subject makes an error of one day for the day and date.                     |
**FUNCTIONAL ACTIVITIES QUESTIONNAIRE (FAQ) FOR INFORMANTS**

 PROVIDER INSTRUCTIONS: Give questionnaire to an informant (caregiver, family member, or friend of the patient)

<table>
<thead>
<tr>
<th>How well does the patient:</th>
<th>Depends on others to do</th>
<th>Needs help to do</th>
<th>Has difficulty but does by self</th>
<th>Normal</th>
<th>Never did but could do now</th>
<th>Never did and would have difficulty now</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Write checks, pay bills, and balance the checkbook?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. Assemble tax records, business affairs, or papers?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. Shop alone for clothes, household necessities, or groceries?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. Play a game of skill or work on a hobby?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. Heat water, make a cup of coffee, and turn off the stove?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. Prepare a balanced meal?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. Keep track of current events?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8. Pay attention to, understand, and discuss TV, a book, or a magazine?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. Remember appointments, family occasions, holidays, and medications?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10. Travel out of the neighborhood by driving or arranging to take buses?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL**

**PROVIDER EVALUATION:** Sum the ratings across the 10 items. Scores ≥ 9 indicated significant functional impairment.
My Stress Thermometer
Caregiver Name: ____________________
Patient Name: _____________________ Patient DOB: _______ Date:____

STRESS: Feeling tense, nervous, anxious, restless, or unable to sleep because your mind is troubled all the time. 

Please CIRCLE the line that represents your current stress level

Extremely stressed

Very stressed

Moderately stressed

A little stressed

Not stressed at all

ID:_____________ Date:_____________

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Please check yes for the behaviors that you have observed in your care recipient in the past month.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. AGITATION/AGGRESSION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your care recipient get angry or hostile?</td>
<td></td>
<td></td>
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<tr>
<td>Resist care from others?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. HALLUCINATIONS</strong></td>
<td></td>
<td></td>
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<tr>
<td>Does your care recipient see and/or hear things that no one else can see or hear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. IRRITABILITY/ FREQUENTLY CHANGING MOOD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your care recipient act impatient and cranky? Does his or her mood frequently change for no apparent reason?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. SUSPICIOUSNESS/PARANOIA</strong></td>
<td></td>
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<tr>
<td>Does your care recipient act suspicious without good reason (example: believes that others are stealing from him or her, or planning to harm him or her in some way)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. INDIFFERENCE/SOCIAL WITHDRAWAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your care recipient seem less interested in his or her usual activities and in the activities and plans of others?</td>
<td></td>
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</tbody>
</table>

BEHAV5

V1.0  9.2.16

Participant ID: _______________________

Date: _______________________

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### DRIVING ASSESSMENT FORMS

**DEPARTMENT OF PUBLIC SAFETY**  
**DRIVER LICENSE DIVISION**  
4501 SOUTH 2700 WEST  
P O BOX 144501  
SALT LAKE CITY UT 84114-4501  
Fax Number: (801) 965-4336

**THIS FORM IS USED BY THE UTAH DRIVER LICENSE DIVISION FOR THE PURPOSE OF REPORTING DRIVERS WHO MAY BE UNSAFE TO DRIVE. ANY PERSON, WHO IN GOOD FAITH, REPORTS A DRIVER WHO APPEARS TO PRESENT AN IMMINENT THREAT TO DRIVING SAFETY SHALL HAVE IMMUNITY FROM ANY DAMAGES CLAIMED AS A RESULT OF DOING SO. Utah Code Annotated (UCA) 53-3-303.**

The notification provided under this section relating to a physical, mental, or emotional impairment is classified as a protected record under Title 63G, Chapter 2, Government Records Access and Management Act, and the identity of the person notifying the Division shall not be disclosed by the Division.

**NAME OF SUBJECT ________________________________DATE OF BIRTH____________________**  
(Print)  
**UTAH LICENSE NUMBER or RELATIONSHIP (IF ANY) ____________________**  
**DRIVING PRIVILEGE CARD # _______________**

**SUMMARY:** Describe actions or known impairments that you have observed which caused you to submit this report (be specific)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

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________________________________________________________________________

THE ABOVE STATEMENT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT IT MAY BE PUNISHABLE AS A MISDEMEANOR TO KNOWINGLY GIVE A WRITTEN FALSE STATEMENT (UCA 76-8-504). I understand that if I have made a notification with the intent to annoy, intimidate, or harass the person that is the subject of the notification I may be charged with a class C misdemeanor (53-3-305(5)).

**REQUESTER INFORMATION:**

| NAME: ___________________________ |
| ADDRESS: _________________________ |
| PHONE: __________________________ |
| SIGNATURE: ______________________ |

**NOTARIAL CERTIFICATE:**

| STATE OF _________________________ |
| COUNTY OF ________________________ |
| Acknowledged before me this ________ day of ________________________ 20______. |

Notary Public

| S E A L |

DI 117  
Rev. 8-12
# FUNCTIONAL ABILITY EVALUATION MEDICAL REPORT

**TOP PORTION MUST BE COMPLETED AND SIGNED BY APPLICANT**

By signing this form, I authorize my healthcare professional(s) to disclose specific health information regarding my physical, mental and emotional condition relevant to my ability to safely operate a motor vehicle, to the Utah Driver License Division. I understand that if I fail to sign this authorization my driving privilege may be affected. I understand that this information will be classified as a private record in accordance with GRAMA (UCA 63G-2-202). Individuals who are entitled to have a "private" record disclosed to them are limited to the subject of the record, a parent or legal guardian of an unemancipated minor or legally incapacitated individual, an individual with power of attorney or a notarized release signed by the subject of the record, or an individual with a court or legislative subpoena.

**APPLICANT’S SIGNATURE:**

**Form will not be processed without signature**

**BOTTOM PORTION TO BE COMPLETED AND SIGNED BY HEALTH CARE PROFESSIONAL**

The following **safety assessment level** is for use in determining driving privileges. It is consistent with the current edition of **Functional Ability in Driving: Guidelines and Standards for Health Care Professionals**. Please indicate level below with a check mark and your initials.

<table>
<thead>
<tr>
<th>Safety Assessment Level</th>
<th>A Diabetes &amp; Metabolic Condition On Insulin</th>
<th>B Cardio-Vascular &amp; High Blood Pressure</th>
<th>C Pulmonary</th>
<th>D Neurologic</th>
<th>E Seizures or Episodic Conditions</th>
<th>F Learning Memory</th>
<th>G Psychiatric or Emotional Condition</th>
<th>H Alcohol &amp; Other Drugs</th>
<th>J Musculoskeletal Chronic Debility</th>
<th>K Alertness or Sleep Disorders</th>
<th>L Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>5</td>
<td>N/A</td>
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<tr>
<td>6</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>7</td>
<td>N/A</td>
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<td>8</td>
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</table>

Please indicate if any of the following apply to this medical review:

- [ ] Non-standard review time frame
- [ ] Safety Assessment categories not marked are relevant and should be completed by another health care professional. Please list categories which are of concern:

- [ ] I recommend this driver complete a driving skills test in an appropriate vehicle. **(Drive test is not available for level 8)**

<table>
<thead>
<tr>
<th>Date form is completed</th>
<th>Printed Name of Health Care Professional and Degree</th>
<th>Signature &amp; initials</th>
<th>State License Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Must be submitted to Driver License within 6 months)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Doctor’s Comments**

- [ ] There are special considerations I would like to discuss with a representative of the Division.

<table>
<thead>
<tr>
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<th>Signature &amp; initials</th>
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**For more information regarding the medical program or to view current medical guidelines, please visit:**

www.driverlicense.utah.gov

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This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Meg Skibitsky, MD, MPH, Intermountain Healthcare, Medical Director Neurosciences Clinical Program, Cognitive Care Development Team (Meg.Skibitsky@imail.org).