

Practical Experience-Based Approaches to Assessing Fitness to Drive in Dementia

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There may be up to 1.5 million persons with dementia who are driving in North America. In many jurisdictions, physicians are mandated to assess and report fitness to drive in such patients. Lack of knowledge of patients' driving status does not protect physicians from lawsuits. There is a paucity of research to aid physicians in the assessment of fitness to drive in persons with dementia. Guidelines recommend the Mini-Mental State Examination, the clock-drawing test, and Trails A and B but lack evidence-based instructions regarding how to interpret such tests. This article provides experience-based approaches to the assessment of fitness to drive in dementia as well as an approach to disclosure of the findings to patients.

Key words: dementia, Alzheimer, driving, family physicians, cognitive testing

Introduction

While the majority of older drivers remain safe drivers, a subset experience the cumulative functional effects of medical conditions (e.g., dementia, strokes, arthritis, Parkinson's disease) and medications (i.e., those with sedating properties) that impact on their fitness to drive.¹

In North America, there are estimat-

ed to be 3.4 million people with dementia; if the published estimated proportion of persons with dementia who are driving² is correct, this suggests that there are more than 1.5 million drivers with dementia. In Canada, there are now an estimated 500,000 people with dementia, with an expected 250,000 new cases to be diagnosed over the next 5 years. As our

population ages, the number of persons with dementia who are driving is also expected to escalate.²

In many jurisdictions front-line physicians are responsible for reporting patients who have medical conditions that may impact on fitness to drive. These legal reporting duties vary by province and territory and can be found in the Canadian Medical Association's driving guidelines (available at www.cma.ca/index.cfm/ci_id/18223/la_id/1.htm).³ What is less clear is how to determine which patients are unsafe to drive during assessments in front-line clinical settings (e.g., physicians' offices).⁴

This is particularly true in the field of dementia. A recent systematic review revealed that no cognitive tests have cut-off scores that are validated to determine fitness to drive status in dementia.⁵ Consequently, the Canadian Institutes of Health Research has funded a 5 year longitudinal prospective cohort study to develop and validate screening tools for fitness to drive that can be employed by physicians in their offices (www.candrive.ca). The study will begin recruiting this year and results can be expected in 5–7 years. When such validated screening tests are available they will still need to be employed within the framework of clinically sensible approaches such as those that will be presented in this article.

Pending the results of such research, we are left to refer to consensus guidelines that, due to a lack of evidence, are largely based on individual expert opinion or the consensus of small groups of experts.^{3,6} Such guidelines tend to recommend tests such as the Mini-Mental State Examination (MMSE),^{7–16} the clock-drawing test, and the Trail Making Test (Trails A and B),^{7,16–19} none of which have well validated cut-off scores predicting fitness to drive in dementia, and some of which have conflicting published data.⁵ Consequently, the guidelines cannot provide evidence-based information regarding how to interpret the cognitive tests recommended (i.e., what would represent fatal errors on these tests or which validated cut-off scores to employ).⁵

This article presents the practical

approaches that we developed for the in-office screening and assessment of medical fitness to drive in persons with dementia.^{4,20–22} The approaches presented in this article are based on a combination of clinical guidelines and clinical acumen and experience. They represent the attempts of seasoned clinicians to incorporate clinical guidelines into approaches that can be employed in busy clinical practices. The approaches have been refined via an ongoing iterative process of discussion and debate among us and our many clinical and research colleagues. The approaches represent our current opinions regarding the best approach to employ in this evidence-based vacuum. Consequently, readers must use their own judgment to decide how to use the approaches described in their own clinical practices.

Assessment of Fitness to Drive in Dementia

When caring for persons with dementia, it is necessary to ask if they drive. A lack of knowledge of patients' driving status does not legally protect physicians should these patients become involved in at-fault motor vehicle crashes. To the contrary, a precedent has been set as physicians have been successfully sued when their patients were involved in crashes due to neurological conditions, even when the physicians were unaware that the patients were active drivers.^{23,24}

Moderate-to-Severe Dementia

When cognitive impairment is so severe or obvious that it is clearly unsafe for the patient to continue driving, in-depth testing is not needed.

Mild-to-Moderate Dementia

The diagnosis of dementia does not, however, automatically mean that a person cannot drive. Some people with mild dementia may still be able to drive safely for a limited period of time, but require individualized assessment and periodic follow-up.^{3,6} Attempts to mandate that all persons with dementia should be forced to cease driving regardless of whether they are still safe or not, aside

from being legally unsupportable, could inadvertently increase the risk to the general public. Such draconian measures could result in more people with dementia avoiding a diagnostic assessment which might thereby result in more people with undiagnosed dementia continuing to drive (i.e., patients whose unfitness to drive might have been detected during the diagnostic assessment).

For less severe cases, clinicians need to decide if they have enough information to make a clinical decision regarding fitness to drive. The Canadian Medical Association driving guidelines³ and the Canadian Consensus Conference on Dementia guidelines²⁵ indicate that persons with moderate to severe dementia should not drive, and they employ an opinion-based definition of moderate to severe dementia as demonstrating new impairments (relative to the patient's baseline) due to cognition in one or more personal activities of daily living and/or two or more instrumental activities of daily living (see Table 1).

The assessment of fitness to drive in persons with mild dementia is complex and should take into account not only cognitive issues but also other medical and physical reasons indicating that they are unfit to drive. Driving cessation is often more acceptable or palatable to such patients if the decision is also based on physical (i.e., noncognitive) findings. We propose two different methods to organize the complex array of factors impacting on driving (see Tables 2 and 3). The approaches are not as lengthy to apply as they may first appear. Primary care physicians with an in-depth longitudinal knowledge of a patient will be able to answer many of the questions listed in these approaches before meeting with the patient for a more focused examination of fitness to drive. The initial elements of such a focused examination, for example, points 1–5 in Table 3, may answer the question of fitness to drive; in this case, further assessment (e.g., points 6–10, Table 3) may not be necessary. In many instances, the approach suggested in Table 3 may only take 10 minutes to complete.

Table 1: DEATH SHAFT Mnemonics for Personal and Instrumental Activities of Daily Living

The mnemonic DEATH can be used for activities of daily living:

- Dressing
- Eating
- Ambulation
- Toileting/Transfers
- Hygiene

The mnemonic SHAFT can be used for instrumental activities of daily living:

- Shopping
- Housework/Hobbies
- Accounting—banking, bills, taxes
- Food preparation
- Telephone/Tools/Transportation

These approaches are heavily based on history and physical examination. Many clinicians may prefer to start with cognitive tests. When physicians employ cognitive tests such as the MMSE, clock-drawing test and/or Trails A and B, they should keep in mind that none of these tests have well-validated cut-off scores for persons with dementia (and when validated, such cut-off scores will likely be averages and may vary by individual). It is, therefore, recommended that clinicians use their judgment to trichotomize the results of these tests into categories of "clearly safe," "unclear—needs more testing," or "clearly unsafe" by asking themselves if they would get into or allow a loved one in a car that the patient is driving, given the tests results.⁵ As presented in point 8 of Table 3 (Trails B) and Figures 1 and 2, the unclear category may be further evaluated by considering qualitative dynamic information regarding how the test was performed (e.g., observations such as slowness, hesitation, multiple corrections, anxiety, impulsive or perseverative behaviour, lack of focus, forgetting instructions, inability to understand test, etc., may facilitate more precise judgment of this category). Given the lack of research on validated cut-off

Figure 1:
Serial Trichotomization

Many clinicians may prefer to start with cognitive tests. When physicians employ cognitive tests such as the MMSE, Clock Drawing and/or Trails A and B, they should keep in mind that none of these have well validated cut-off scores. In the case of overlapping or unclear cognitive scores, serial trichotomization of test results (e.g., clearly unsafe, uncertain with further testing required, no concerns regarding safety) can facilitate judgment of driving fitness. The unclear category may be further evaluated by considering qualitative dynamic information regarding how the test was performed (e.g., observations such as slowness, hesitation, multiple corrections, anxiety, impulsive or perseverative behaviour, lack of focus, forgetting instructions, inability to understand test, etc.), may help in the interpretation of this category of patients. The trichotomization approach essentially asks, "Which patients are obviously unfit to drive, which are clearly safe, and which require further evaluation?"

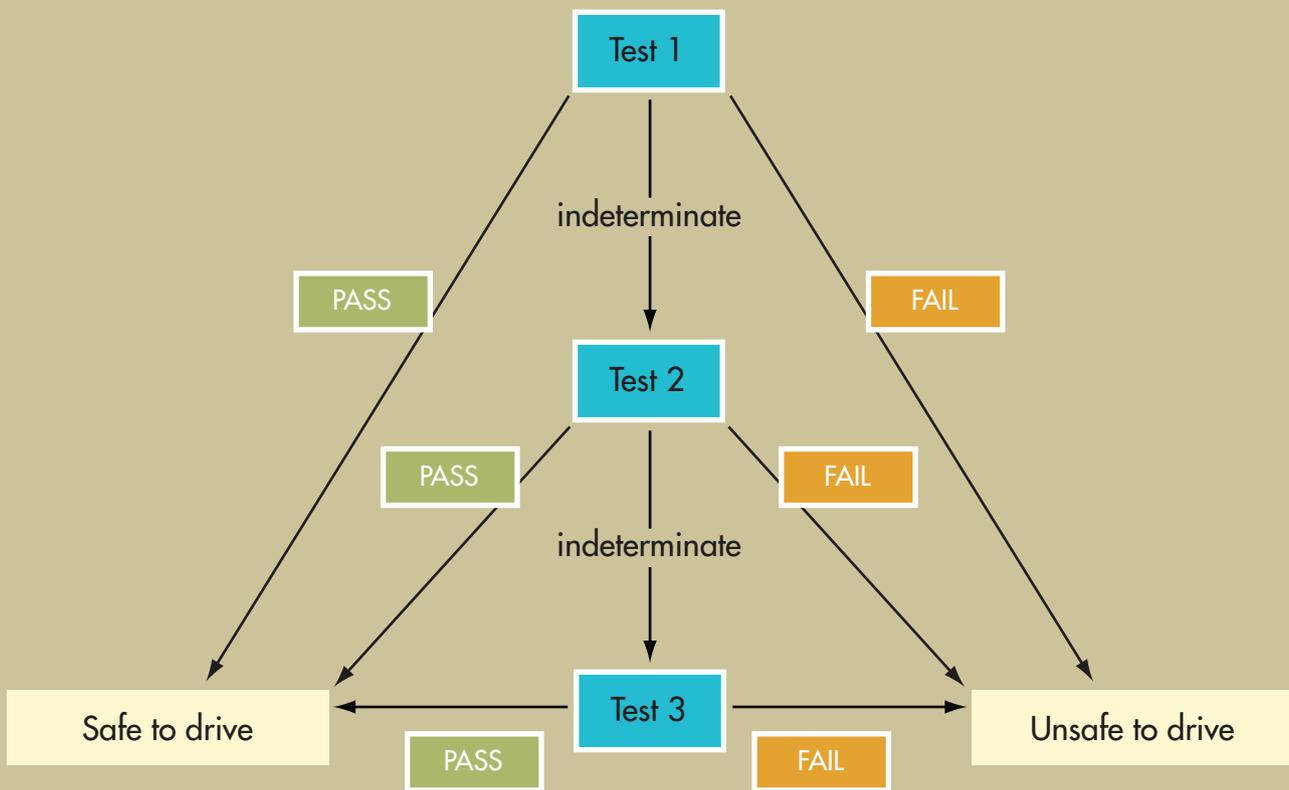


Table 2: The CanDRIVE Fitness to Drive Assessment Mnemonic

C	OGNITION	Dementia, delirium, depression, executive function, memory, judgment, psychomotor speed, attention, reaction time, visuospatial function
A	CUTE OR FLUCTUATING ILLNESS	Delirium, Parkinson's disease
N	EUROMUSCULOSKELETAL DISEASE OR NEUROLOGICAL EFFECTS	Speed of movement, speed of mentation, level of consciousness, stroke, Parkinson's disease, syncope, hypo/hyperglycemia, arthritis, cervical arthritis, spinal stenosis
D	RUGS	Drugs that effect cognition or speed of mentation such as benzodiazepines, narcotics, anticholinergic medications (e.g., tricyclic antidepressants, antipsychotics, ²⁶ oxybutynin, gravol), antihistamines
R	ECORD	Patient or family report of accidents, or moving violations
I	N-CAR EXPERIENCES	Patient or family description of near accidents, unexplained damage to car, change in driving skills, loss of confidence or self-restriction, becoming lost while driving, others refusing to be driven by patient, need for assistance of a copilot (particularly concerning the need for cues to avoid dangerous situations that could result in a crash), other drivers having to drive defensively to accommodate changes in the patient's driving skills
V	ISION	Acuity, visual field defects, glare, contrast sensitivity, comfort driving at night
E	THANOL USE	Physician's opinion regarding whether ethanol use is excessive and whether alcohol is imbibed prior to driving

Source: Molnar FJ et al., 2005.⁴ Reprinted with permission from Canadian Family Physician.

scores, and on trichotomization in general, where to set the cut-off scores remains dependent on physician judgement pending further research.⁵ The trichotomization approach essentially asks, "Which patients are obviously unfit to drive, which are clearly safe, and which require further evaluation?"

What to Do if Fitness to Drive Remains Unclear

If fitness to drive remains unclear after performing assessments such as those described in Tables 2–3 and Figures 1–2, then physicians should refer for further evaluation. Referral to a centre specializing in the diagnosis and treatment of dementia should be considered if there are dementia-related issues other than driving to also consider (i.e., there are insufficient resources in dementia clinics to handle large numbers of referrals purely for assessment of fitness to drive). If fitness to drive is the only issue to be addressed then referral to a centre providing specialized on-road testing would

be more appropriate (in regions where such centres exist).

This recommendation comes with a caveat. In some provinces the ministry of transportation will not accept their own on-road tests as being sufficient to assess persons with cognitive impairment. Rather, the ministry of transportation requires that a more comprehensive on-road evaluation be performed at specialized ministry certified centers that are often run by occupational therapists. The high costs of these specialized comprehensive on-road tests (\$500–800 to be paid by the patient in some provinces) create a barrier to the assessment and reporting of fitness to drive as they place physicians in the position of presenting patients with an ultimatum; pay for such expensive on-road tests or stop driving. This type of interaction is destructive to the physician-patient relationship and is unfair to patients of limited financial means. Systems in which patients have to pay for on-road testing discourage physicians from assessing and reporting

fitness to drive and may thereby unintentionally create a risk to public safety. Some provinces such as British Columbia have addressed this by funding comprehensive on-road testing for patients with dementia if the physician recommends such on-road testing to the ministry of transportation and the ministry agrees with this recommendation. In Quebec on-road testing only costs patients \$80. Ideally all provincial and territorial ministries of transportation should fund comprehensive on-road testing for persons with dementia in the way British Columbia and Quebec do. Regrettably, most ministries of transportation are not themselves adequately funded by their province to undertake this responsibility. If we, as a society, want to have safer roads then we must ask our provincial governments to better fund our ministries of transportation so they, in turn, can fund comprehensive on-road testing.

Another approach would be to consider which organizations would benefit financially from better funded compre-

Table 4: Disclosure of Unfitness to Drive

STEP 1: Preparatory meeting with family

Meet with family alone only if you anticipate a negative reaction from the patient or family including anger and refusal to comply with recommendations due to lack of insight or understanding. In such instances, the patient will need the support of the family, and the family will need to know the basic information to prepare themselves to provide such support. If such a negative reaction is not expected, then proceed to Step 2.

A. Set ground rules

- Explain concern for safety of patient and others in a concrete and empathic fashion.
- Describe findings (including results of the physical examination and cognitive tests) that make it clear that the patient is not able to drive safely.
- Explain that the laws in your jurisdiction require you to report the patient to the Ministry of Transportation (if true in your jurisdiction)—that you have no choice—and that to not report would be breaking the law.
- Indicate that you are certain that they understand that the goal of the assessment is to prevent an accident that could injure or kill the patient or others; therefore, it is not an option to wait for an accident to occur, and that many older adults do not survive or recover from crashes. If others were injured, the patient and family members would have to live with the responsibility and guilt.
- Explain that since they are now aware of the risk, they (the family) also carry some responsibility and that this discussion will be noted in the chart.

B. Put the family in a supportive role

- Thank the family for helping you with this difficult task. Indicate that while it is your legal responsibility to tell their relative that he or she should not drive, they (family members) can be the supportive party that helps their relative emotionally through a difficult time and helps the person find transportation alternatives—the good cop/bad cop approach.
- Verify that the family will fulfill this role/adopt this approach.

C. If the family continues to express doubts regarding your findings

- Re-explain the guidelines and laws.
- Explain the tests used.
- Discuss the findings (show them the test results).
- If they still express reservations regarding the findings, have them witness repeat performance on the most revealing test(s).

STEP 2: Meet with the patient and family

A. Set the ground rules

- Ensure that the family will assume the supportive (the good cop) role and let you (the bad cop) first disclose.
- Have family join patient before you enter the room (to avoid appearance of collusion).

B. Give the patient a positive role

- Recognize that the patient has been a responsible driver and likely has a good driving record, but that part of being a responsible driver is to hang up the keys before a crash.
- Acknowledge that you know the patient would never want to hurt others.
- Explain that due to the clinical findings, the law mandates that the patient must cease driving and that, while you dislike doing so and are sorry that that you have to do so, you are given no choice but to report the patient's findings to the Ministry of Transportation. You cannot override or disobey the law by not reporting.
- Acknowledge that it is normal to be unhappy or even angry regarding this information.
- Highlight the positives: (i) taking taxis is cheaper than maintaining a car if one drives <4000 km/yr (distance varies with gas prices, but is generally on this scale); (ii) they took care of their children, and now this is their children's chance to pay them back—it is important for their children to feel they are helping in a time of need.

Table 4 continued: Disclosure of Unfitness to Drive**C. If patient continues to argue**

- Remain firm in instructions not to drive. Do not argue—the patient may have limited insight or judgment.
- Indicate that the chart is a legal document that can be subpoenaed. It indicates that the patient and family have been notified of the crash risk and that the patient has been advised to stop driving. If the patient is involved in a crash, he or she may be legally liable and held financially responsible.

STEP 3: Post disclosure

- Ask the patient and family to comment (after outlining lack of choice due to laws in your jurisdiction and their respective positive roles).
- Once again, acknowledge that it is normal to feel bad about this development.
- Provide written letter (or write “you are no longer allowed to drive and should not drive” on a prescription) to remind the patient that he or she has been informed that it is unsafe to drive. Give family copies in case the patient loses the letter (see Figure 3) or throws it away.
- Explore other transportation options: (i) taxi—can get private cell number of driver(s) that is particularly helpful and reliable, and plan a day ahead by calling the driver of choice; (ii) volunteer drivers; and (iii) ParaTranspo.
- Family should share responsibility between several members. Family should ensure patient gets out of the house for enjoyable activities and not only for medical appointments (i.e., transportation to activities that contribute to quality of life should be made a priority).

STEP 4: Dealing with difficult situations

- If the patient or family threatens a lawsuit, notify your medical college and malpractice insurer (e.g., Canadian Medical Protective Association), so they can advise and open files. Document these phone calls and names of persons contacted in the patient’s chart.
- If the patient is refusing to comply, then meet with family:
 - i. Encourage family to remove opportunity to drive if noncompliant (disable car, remove keys or car). Best to remove the car, as it is a constant reminder.
 - ii. If the patient is an imminent danger to others, call Ministry of Transportation physician line indicating need to remove license as soon as possible, and fax in medical form.
 - iii. If the patient is an imminent danger to others, call police, explain situation, and ask for officer’s name or badge number so that you can document it in chart.
 - iv. Document conversations with Ministry of Transportation and police in chart (date, names and details).

hensive on-road testing. When people are involved in car crashes (as drivers, passengers, pedestrians, or drivers and passengers of other cars), it is the ministries of health and the insurance industry that pay the extremely high immediate and long-term costs of care and disability. The health care system and the insurance industry could potentially save tax payers and investors millions of dollars by funding comprehensive on-road testing or by sharing the costs with the ministries of transportation (i.e., a tripartite payer system including the insurance industry, ministries of health, and ministries of transportation). Such forward thinking could save both lives and money.

After the Assessment: Approaching a Person with Mild Dementia who Is Still Temporarily Safe to Drive

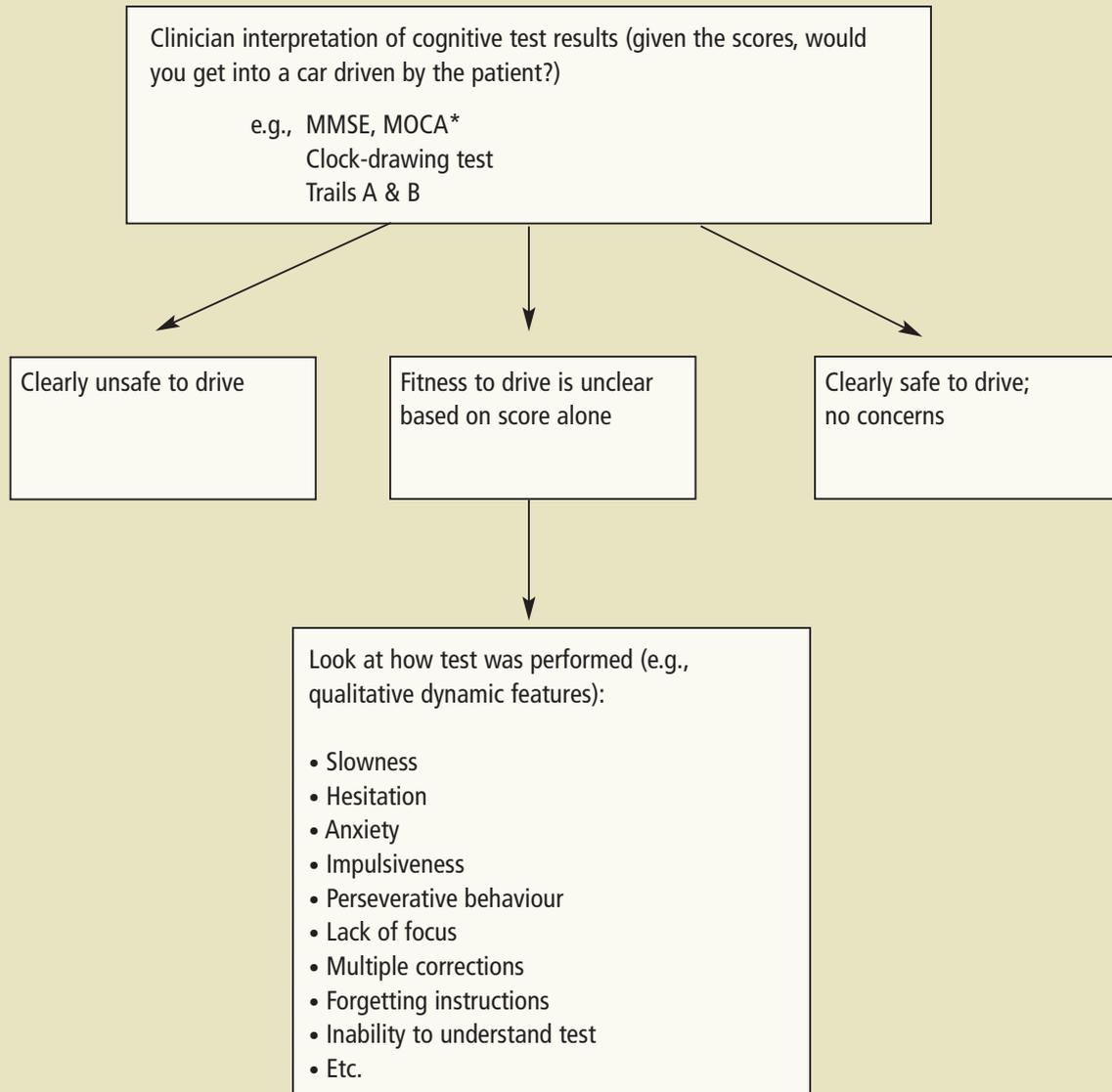
If a person with mild dementia is found to be able to continue to drive safely, physicians should still broach the subject of eventual driving cessation when the dementia progresses (as it inevitably will). Fitness to drive must then be re-evaluated every 6–12 months.^{3,29} If the clinician is concerned that the patient may not return for re-evaluation, then it would be prudent to report the patient to the ministry of transportation as “having mild dementia, but being deemed still safe to drive with re-evaluation required in 6–12 months (period for re-evaluation

dependent on physician judgment).” The physician also has the option of specifying the type of follow-up required (e.g., in the physician’s office, by a specialist, or via comprehensive on-road assessment) when completing this form.

After the Assessment: Disclosing That a Person Is Unsafe to Drive

Once fitness to drive has been assessed, if the findings suggest an unacceptable risk, they must be acted on. Many clinicians find the disclosure of unfitness to drive to be a difficult, if not painful, task that fundamentally alters the physician-patient relationship. They understandably

Figure 2: Trichotomization Approach to Interpretation of Cognitive Test Results With Respect to Fitness to Drive



MMSE = Mini-Mental State Examination, MOCA = Montreal Cognitive Assessment.

express a desire to avoid this potentially confrontational situation as they fear it will emotionally harm patients and may result in these patients, and their families, leaving their practice.^{27,28} As outlined in the Canadian Medical Association guidelines, physicians in most provinces are legally required to assess and report persons with dementia who are unsafe to drive.³ Even in jurisdictions where reporting is not mandated, it is still possible for physicians to be sued if their patient with dementia injures others in a car crash. Disclosure becomes unavoidable. However,

as in many areas of medicine, the manner in which bad news is disclosed can moderate the negative impact on patients and families. Table 4 presents an approach that has been employed clinically by one of authors (F.M.) and that has formed the basis for presentations given on behalf of the Ontario Alzheimer Knowledge Exchange (accessible on the Exchange's dementia and driving resource webpage at www.drivinganddementia.org). Once a physician has disclosed a finding of unfitness to drive, it is generally prudent to also provide the finding in writing to

the patient and family as the patient may forget the conversation. A sample letter is provided in Figure 3. For legal reasons, the disclosure meeting (including the date and participants' names) should be documented in the patient's chart.

Conclusion

By employing approaches such as those presented in Tables 2 and 3, clinicians with baseline knowledge of a patient can assess fitness to drive in a relatively short period of time and can appropriately select only those patients who truly need

Figure 3: Notification Regarding Driving Safety

Name: _____

Date: _____

Address: _____

You have undergone assessment for memory/cognitive problems. It has been found by comprehensive assessment that you have _____ dementia. The severity is _____

Even with mild dementia, compared with people your age, you have an 8 times risk of a car accident in the next year. Even with mild dementia, the risk of a serious car accident is 50% within 2 years of diagnosis.

Additional factors in your health assessment raising concerns about driving safety include:

As your doctor, I have a legal responsibility to report potentially unsafe drivers to the Ministry of Transportation. Even with a previous safe driving record, your risk of a car accident is too great to continue driving. Your safety and the safety of others are too important.

I therefore recommend that you stop driving for medical reasons.

_____ M.D.
 _____ Witness

referral for further in-depth assessment of fitness to drive. By not referring patients whose fitness to drive can be

determined in the primary physician’s office, our system will be able to better adapt to the rapidly growing numbers of

older drivers who truly require specialized assessment of fitness to drive. To preserve public safety, provinces must better fund their ministries of transportation to allow these ministries to, in turn, fund comprehensive on-road testing for the escalating number of persons with mild dementia whose fitness to drive cannot be determined without an on-road test. To do otherwise will perpetuate the disincentives to physician assessment and reporting of fitness to

Key Points

- If a person is diagnosed with dementia, you must ask if he or she drives.
- A lack of knowledge regarding whether your patient with dementia is an active driver will not legally protect you if this person is involved in a car crash.
- Some persons with mild dementia may still be able to drive safely for a limited period of time, but require individualized assessment and periodic re-evaluation every 6–12 months.
- While guidelines recommend tests such as the Mini-Mental State Examination, the clock-drawing test, and Trails A and B for such an individualized assessment of persons with mild dementia, there is little research regarding cut-off scores and how to interpret the findings of such tests.
- Notwithstanding the lack of research, practical experience-based approaches to assessing fitness to drive in persons with dementia that can be performed in as little as 10 minutes have been developed.

Clinical Pearls

- Trichotomize the results of cognitive tests into “clearly safe,” “unclear—needs more testing,” or “clearly unsafe.”
- Get family members on side and allow the patient to save face when disclosing a finding of unfitness to drive to a patient.

drive described above and will place the general public at unnecessary risk.

For those interested in learning more regarding the evaluation of fitness to drive in dementia, we recommend the Ontario Alzheimer Knowledge Exchange dementia and driving resources available at www.drivinganddementia.org, and the Dementia and Driving Toolkit, available on the Regional Geriatric Program of Eastern Ontario website at www.rgpeo.com. 

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