

# Barriers to Assessing Fitness to Drive in Dementia in Nova Scotia: Informing Strategies for Knowledge Translation



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## ABSTRACT

### Background and Purpose

Over half a million Canadians have a diagnosis of dementia, approximately 25–30% of whom continue to drive. Individuals with dementia have a risk of motor vehicle collision up to eight times that of drivers without dementia. In Nova Scotia, the responsibility of reporting unsafe drivers is discretionary, but national survey data indicate that many physicians do not feel comfortable assessing driving safety. We report on barriers to addressing driving safety as identified by Nova Scotian primary care physicians (PCPs).

### Methods

We conducted a cross-sectional study of surveys completed by 134 English-speaking, Nova Scotian PCPs (mean years of practice 17.9±11; 53% female; 58% urban). Statistical analysis included descriptive statistics and multivariate linear and logistic regression (controlling for sex, urban/rural, and years of practice).

### Results

Most PCPs (96%) routinely address driving safety in dementia, but physicians at all levels of experience find these discussions uncomfortable and sometimes avoid them. PCPs experience multiple barriers to assessing driving in dementia and desire further education and resources.

### Conclusions

In Nova Scotia, driving assessment is considered part of routine care in dementia, but general lack of comfort in administering these assessments is a risk. To improve physician comfort further education and resources are required.

**Key words:** dementia, driving assessment, primary care

## INTRODUCTION

Alzheimer's disease (AD) and related dementias cause impairment in functional abilities, including ability to drive.<sup>(1–3)</sup> Over half a million individuals in Canada have a diagnosis of AD,<sup>(4)</sup> and in Nova Scotia, approximately 5,400 individuals with a diagnosis of AD continue to drive.<sup>(4–5)</sup> Following a diagnosis of AD, almost 50% of individuals will be involved in a motor vehicle collision (MVC) within five years.<sup>(6)</sup>

AD affects driving by reducing reaction time<sup>(1)</sup> and the ability to shift visual attention from one stimulus to another<sup>(2)</sup>—for example, from a car in front of the vehicle to a pedestrian crossing the street. Early loss of insight<sup>(7)</sup> may prevent individuals with AD from accurately appraising their driving abilities and foster optimistic bias, the idea that bad things (MVCs) only happen to other people.<sup>(3)</sup> Thus, individuals with AD rarely relinquish their driving privileges voluntarily<sup>(8)</sup> and often cease driving only after being involved in an MVC.<sup>(9)</sup>

Caregivers frequently do not plan for driving cessation, and there is often a lag between the recognition of cognitive deficits on the part of the caregiver and the initiation of the driving cessation process.<sup>(10)</sup> This lag may be due to the caregivers' lack of knowledge about dementia and its impact on driving or fear over increased burden of care if the affected individual can no longer drive.<sup>(11)</sup> Therefore, physicians are routinely responsible for initiating the driving cessation process by contacting the appropriate authorities. In Canada, reporting guidelines concerning fitness to drive vary by province and territory. All but three Canadian provinces mandate that physicians report potentially unsafe drivers to provincial licensing authorities,<sup>(12)</sup> however, national survey data indicate that many physicians, regardless of mandatory reporting, do not feel comfortable in assessing driving safety.<sup>(13–15)</sup> The Canadian Medical Association (CMA) guidelines for the assessment of driving in dementia are designed to provide a unified physician approach to the assessment of dementia patients;<sup>(12)</sup> however, these guidelines does not offer conclusive answers for case-by-case usage, and there is no

failsafe test to predict which individuals with dementia are at significant risk of MVC.<sup>(16)</sup>

In Nova Scotia, reporting of unsafe drivers is at the discretion of the physician. Physicians must therefore consider not only the underlying disease, but also the interest of the patient and family (many of whom reside in rural areas and are highly dependent on personal vehicles for transportation), the welfare of the community, medical ethics, and their own personal comfort and confidence in assessing fitness to drive.

This study sought to assess perceived barriers to addressing driving safety in dementia among Nova Scotian primary care physicians (PCPs) and to determine whether these barriers differ between urban and rural physicians or according to years of practice. Results will inform resource development and awareness campaigns promoting appropriately timed driving cessation.

## METHODS

### Study Design, Population, and Instrument

This cross-sectional study targeted Nova Scotian PCPs. For study inclusion, physicians surveyed were required to be English speaking with a practice in Nova Scotia that included patients with dementia.

Drawing upon published literature<sup>(13)</sup> an anonymous 33-item survey was developed with questions evaluating PCP demographics and general practice ( $n = 7$  questions), practices in evaluating fitness to drive ( $n = 13$ ), opinions regarding the assessment and reporting of fitness to drive ( $n = 8$ ), and resource use ( $n = 6$ ). The survey was reviewed by four geriatricians who provided feedback on content validity and readability prior to survey circulation.

Surveys ( $n = 134$ ) were distributed to PCPs attending a Canadian medical education refresher held in Halifax, Nova Scotia in 2008. An electronic version of the questionnaire (hosted on Dalhousie University's Opinio Web server; Opinio version 5, Object Planet, Inc, Oslo, Norway) was distributed via email to a registry of approximately 700 PCPs practicing in Nova Scotia. As an incentive survey participants were asked to email their name and address to a generic email account for entry into a draw for a \$100 gift card to a Nova Scotian gas station.

The institutional Research Ethics Board of the Capital District Health Authority in Halifax approved the study protocol. Implied consent was obtained; PCPs reviewed a cover letter describing the research and decided whether to complete and submit the survey.

Survey response data were examined using descriptive statistics and multivariate linear and logistic regression controlling for sex, community of practice, and years of practice. A cut-off value of  $p < .05$  was used. All descriptive statistics reported are based on the number of responses obtained for each question.

## RESULTS

Of the 159 surveys completed (79 paper, 80 electronically), 134 met the inclusion criteria and were included for analysis. Surveys excluded were completed by physicians who did not practice in Nova Scotia ( $n = 19$ ) or did not treat patients with dementia ( $n = 6$ ). Physicians were primarily female (71, 53%), practicing in an urban community (77, 58%) with a mean  $\pm$  SD of  $17.9 \pm 11$  years' experience as a PCP.

Driving evaluations for patients with a diagnosis of dementia were typically considered to be a part of routine practice (95, 71%), with assessments most often being done on diagnosis (73, 55%) or by mild stage (42, 31%) and taking less than 30 minutes (124, 93%). Physicians reported referring patients for on-road assessment (94, 70%) and to other health care professionals (88, 66%), usually a geriatrician (66/88, 75%). Number of years of practice was associated with more lengthy discussions about driving cessation ( $p = .03$ ), and was positively associated with the probability both of having a routine discussion about driving and dementia ( $p = .03$ ) and of referring for an on-road assessment ( $p = .02$ ).

Some ( $n = 17$ ) physicians reported feeling comfortable in assessing driving safety (10, 59% male, 10, 59% rural). However, more than half of those surveyed (93, 69%) said they at least sometimes avoid discussions about driving cessation. Neither comfort in assessing driving safety nor avoidance of discussions was associated with type or years of practice. Table 1 lists which items physicians perceived to be a barrier to assessment. Concern about personal or corporate liability was most common, as indicated by 78% ( $n = 105$ ) of respondents.

Table 2 lists assessment tools used by the PCPs. Physicians were instructed to select all of the tools they used to assess fitness to drive for patients with dementia and were given the opportunity to include items not listed. Almost all PCPs reported using the Mini-Mental State Examination<sup>(17)</sup> (MMSE) when assessing driving ability (124, 92%). Choice of assessment tool did not vary according to type or years of practice.

TABLE 1.  
Primary care physicians' perceived barriers to assessment of fitness to drive for patients with dementia

Barrier	n	%
Lack of comfort in decision making	54	40
Lack of support from the family/caregiver	36	27
Lack of available resources to offer	55	41
Lack of familiarity with standards and guidelines	49	37
Concern about negative impact on physician-patient relationship	58	43
Concern about personal/corporate liability	105	78

TABLE 2.

Tools used by primary care physicians to assess fitness to drive for patients with dementia

<i>Assessment Tool</i>	<i>n</i>	<i>%</i>
Mini-Mental State Examination <sup>(17)</sup>	124	92
Montreal Cognitive Assessment <sup>(26)</sup>	18	13
Trail Making Test B <sup>(32)</sup>	15	11
Clock Drawing Test <sup>(33)</sup>	77	58
Other	7	5

Of those surveyed, 84% ( $n = 112$ ) were aware of the CMA guidelines for determining medical fitness to operate a motor vehicle. While 60% ( $n = 80$ ) reported using the guidelines in practice, only half of respondents rated it as useful (63, 47%). No association was found between use of the national guidelines and years of practice, sex, or type of practice. Few physicians (32, 24%) indicated that they used other resources regarding driving cessation in dementia (such as information from the Nova Scotia Registry of Motor Vehicles and the Alzheimer Society of Canada). When asked specifically, 97% ( $n = 130$ ) of respondents indicated their interest in accessing more education tools and resources such as a website regarding driving cessation in dementia.

## DISCUSSION

Most respondents considered discussions about driving safety to be a part of the routine assessment of patients with dementia and recognized their role in reporting elderly drivers. The results of a recent American study examining physician attitudes and practice regarding fitness to drive for individuals with dementia are comparable with our findings that physicians with more years experience are more likely to routinely address driving issues.<sup>(18)</sup> Many of our respondents reported lack of familiarity with current guidelines as a barrier to assessing driving safety in dementia. Respondents also reported concerns about legal responsibility and the potential for jeopardizing relationships. Although concern about negative effects on patient–physician relationships was a common barrier to driving assessment in a national survey,<sup>(13)</sup> regardless of discretionary or mandatory reporting policies, our result may be in part related to Nova Scotia's provincial discretionary reporting policy, whereby physicians are not obligated to report concerns about unsafe drivers to the Registry of Motor Vehicles. Interestingly, national data indicate that physicians in provinces with mandatory reporting are less likely to assess fitness to drive than those practicing under a discretionary reporting system, but are more likely to report unsafe drivers.<sup>(13)</sup>

Ultimately, until there is a reliable and validated office tool, PCPs will continue to face challenges in assessing fitness to drive in dementia. Our data indicate that PCPs in Nova

Scotia rely most frequently on MMSE scores. Although it has been proposed that fitness to drive is not maintained once MMSE scores fall to  $\leq 24$ ,<sup>(19–21)</sup> a recent meta-analysis found that MMSE scores are no more reliable than a simple driving knowledge test in predicting on-road driving performance (e.g., recognizing traffic signs) during driving assessments.<sup>(22)</sup> The clock draw test, less often used by Nova Scotian PCPs, has been shown to predict poor performance on driving simulators (overall prediction 90%).<sup>(23)</sup> However, these results have yet to be replicated and confirmed with on-road performance. Furthermore, while the American Academy of Neurology recently recommended using the Clinical Dementia Rating (CDR) Scale<sup>(24)</sup> combined with caregiver input, driving history, changes in driving behavior, an MMSE score  $\leq 24$ , and aggressive behavior as useful for identifying patients at increased risk for unsafe driving,<sup>(20)</sup> the CDR is not often used by PCPs.<sup>(25)</sup>

Few respondents listed the Montreal Cognitive Assessment (MoCA)<sup>(26)</sup> as a tool they use to inform driving assessment. While screening tools for mild cognitive impairment (MCI) such as the MoCA are gaining popularity among general practitioners, there is no evidence supporting the use of the MoCA as an indicator of fitness to drive in MCI or dementia. In particular, the implications of a diagnosis of MCI for driving safety are not addressed by national guidelines. Further, the MoCA has variable specificity for the diagnosis of MCI and dementia,<sup>(26–28)</sup> and research indicates that individuals with mild dementia may still drive safely.

Given the discomfort associated with addressing driving safety for patients with dementia, and the lack of a validated in-office assessment tool, it is not surprising that many physicians refer their patients either for additional assessment by another health care professional or for on-road assessment. The recently released Screen for the Identification of Cognitively Impaired Medically At-Risk Drivers, a Modification of the DemTec (SIMARD MD) tool<sup>(29)</sup>—a pen-and-paper test that evaluates memory, attention, judgment, and decision making—is being pilot tested in British Columbia. Unfortunately, at least one-half of patients tested will still need on-road evaluation due to an indeterminate result.

Our results must be interpreted with caution. Our sample size was small and response was voluntary. We do not have data regarding the practices of PCPs who did not complete the survey. However, our sample did include a variety of practice profiles in terms of urban compared with rural practice, practitioner's sex, and number of years of practice, and our results are consistent with those of other studies of physician's attitudes toward assessing fitness to drive for dementia, as well as the elderly in general.<sup>(13–15,18,30,31)</sup>

## CONCLUSION

Nova Scotian PCPs continue to report discomfort with assessing fitness to drive in dementia and are eager to access information and resources. In response to this identified gap

in knowledge transfer, we partnered with the Canadian Dementia Knowledge Translation Network ([www.lifeandminds.ca](http://www.lifeandminds.ca)) to create an online educational resource for Nova Scotian physicians and caregivers of individuals with dementia ([www.notifbutwhen.ca](http://www.notifbutwhen.ca)). The resource contains educational materials, assessment information, and tools for both physicians and caregivers to promote healthy driving cessation. Further study, following release and promotion of a provincially relevant online resource, will help clarify the impact of the resource on practice habits.

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## CONFLICT OF INTEREST DISCLOSURES

The authors have no conflicts of interest to declare.

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