

**TOOLS AND EDUCATIONAL INTERVENTIONS FOR FAMILY PHYSICIANS
IN DEMENTIA ASSESSMENT AND DIAGNOSIS**

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INTRODUCTION

About 8% of Canadians aged 65 or older have dementia, with over half living in the community (Canadian Study of Health and Aging Working Group, 1994). The majority of people with dementia in Canada receive medical care from family physicians (Patterson et al. 1999a). They may play a central role in “coordinating assessments of patient function, cognition, comorbid medical conditions, disorders of mood and emotion, and caregiver status” (Cummings, et al., 2002). By 2031, Pimlott et al. (2006) estimate that the average Canadian family physician will have between 20 and 40 patients with dementia in her or his practice, with between 4 and 8 patients developing dementia each year.

Arguably most important is the role that family physicians play in either making or facilitating the process of diagnosing dementia. Obtaining a diagnosis is often essential for patients and family caregivers to access health and community services that may help to ease psychological burden in response to the potentially distressing symptoms and behaviors associated with dementia, as well as therapies that may slow the initial progression of certain types of dementia, such as Alzheimer’s disease (e.g., cholinesterase inhibitor medications) (Iliffe, Manthorpe & Eden, 2003; Iliffe, 1997; Santacruz & Swagerty, 2001).

However, diagnosing dementia is a complex and often challenging process. First, there are several possible causes of dementia, including central nervous system conditions, such as Parkinson’s disease or Huntington’s disease, systemic conditions such as HIV infections, and long-term effects of a substance such as alcohol. Alzheimer’s disease is the most common cause, and other types may include vascular dementia or

Lewy body dementia. There may be other causes of memory impairment, such as a delirium caused by an infection, which must be ruled out (American Psychiatric Association, 2000). Mild cognitive impairment, where very mild symptoms of memory impairment become apparent, may or may not develop into a form of dementia, such as Alzheimer's disease, or vascular or Lewy body dementia (Visser et al., 2006). Further, there is no clear test or "biological marker" for clearly establishing a diagnosis of Alzheimer's disease, the most common cause of dementia (Whitehouse, 2004). "Its uncertain etiology and pathophysiology, high variability in symptoms and signs, and the absence of validated diagnostic tests or monitoring measures" all contribute to this ambiguity (Illife, Manthorpe & Eden, 2003). The process may require several assessments, and may also be complicated by the presence of multiple comorbidities (Illife, Manthorpe, & Eden, 2003). The symptoms may be even more difficult to identify and distinguish at the early stages (Maeck et al., 2006). As a result, as many as half of dementia cases may be undiagnosed (Boise, et al., 1999).

A second set of challenges arises out of psychosocial factors related to patient and caregiver perceptions of the illness and diagnosis. Both patients and caregivers may feel that, at least in the initial stages, the symptoms represent normal aging-related memory problems. Patients may also try to conceal the problems, and may be hesitant about reporting memory problems to a physician. Memory problems are not usually the focus of routine visits to a family physician, so it is unlikely that the physician will have the opportunity, at least in the early stages where symptoms are less apparent, to witness the patient having memory difficulty. The memory problems themselves can also be a limitation in seeking help from a family physician. Further, caregivers are hesitant to

approach the physician about memory problems, because they may first connect the memory problems to normal aging or another life event (such as depression), or they may also be fearful of a dementia diagnosis (Connell et al., 2004; De Lepeleire, Heyman & Buntinx, 1998; Iliffe et al., 2005).

Third, physicians may also feel hesitant to disclose a diagnosis of dementia to both the patients and their caregivers. The uncertainty of the diagnosis, as well as concern about creating anxiety and fear for the patient and caregiver unnecessarily if the diagnosis is incorrect or it is too soon to distinguish from age-related memory loss, makes disclosing a diagnosis of Alzheimer's disease very difficult for family physicians. They are often aware of the stigma that may be associated with the label, and very concerned about its impact on patients and family. They may also feel embarrassed about conducting a cognitive assessment and delivering news of the diagnosis to patients and family members. Boise et al. (1999) also found that physicians felt that there was very little point to establishing an early diagnosis when they perceive few options for treatment.

Fourth, the current nature of family practice in Canada may further impede the ability of family physicians to thoroughly assess more complex patients. In Canada, which is facing a significant shortage of primary care physicians, family doctors are feeling the pressure to reduce the time devoted to each patient in order to see as many as possible. The shortage, combined with a fee-for-service payment system that pays physicians by number of patient visits, may discourage family physicians from spending as much time as they might wish with complex cases (Martin, 2003).

Finally, family physicians may not receive sufficient training to manage dementia. Two surveys of family physicians in the United Kingdom found that they felt generally unprepared to manage dementia concerns for both patients and their families (Downs, et al., 2000; Renshaw et al., 2001). Boise et al. (1999) also found that physicians felt that there was very little point to establishing an early diagnosis when they perceive few options for treatment. Combined with time constraints faced in practice, they may have little time to read educational materials or to attend workshops (Thomas et al, 2006).

While there is debate around whether an early diagnosis is beneficial, in most literature there appears to be a consensus that early diagnosis is best for patients and caregivers, given the benefits of being able to access services earlier. Interviews with patients themselves have indicated that they prefer to learn about the diagnosis as soon as possible, in spite of the difficulty of receiving the news (Post, 2004). Further, Post (2004), an ethicist, argues that early diagnosis is ethically the most sound option, simply because it enables patients and family caregivers to empower themselves to understand the situation and take steps to manage it as soon as possible. The Alzheimer Society of Canada (2005) advocates for “sensitive communication of the diagnosis” as soon as possible, unless the patient has specifically requested not to know the cause of the symptoms. Overall, then, while it is a complex debate, most evidence appears to support early diagnosis. Milne et al. (2005), in a survey of family physicians in the United Kingdom, between two comparison samples taken in 1997 and 2001, found that attitudes toward early diagnosis had improved in light of the existence of new treatments. A study of physician attitudes toward early diagnosis of dementia by general practitioners in the United Kingdom found that 40% of the GPs they surveyed saw early diagnosis as

positive, while 20% saw it as negative (Milne et al., 2000). Unsurprisingly, the three major factors identified as influencing attitudes toward diagnosis included a perception of potential benefit to the patient, a perception of negative outcomes for the patient, and access to local support services.

Overall, then, given the challenges faced by family physicians in diagnosing dementia, there is a need to identify tools that can help them to assess and diagnose dementia as efficiently as possible, and for educational opportunities to help them learn about dementia and the tools available to them. This paper provides a survey of instruments and educational opportunities for Canadian family physicians.

REVIEW METHODS

Three approaches were used in conducting the review: a review of academic literature, web search, and information gathering from key informants. First, a review of the literature related to instruments for dementia assessment was undertaken. Data bases searched included MedLine, PubMed, AARP Ageline, and PsychINFO. In order to identify literature related to assessment tools for dementia, the following terms were searched in varying combinations: family physician, general practioner, dementia, Alzheimer's disease, assessment, diagnosis, tools, and instruments. A second search was undertaken to identify literature examining educational interventions for primary care physicians and dementia. The same databases were searched using the following terms: primary care family physician, general practioner, dementia, Alzheimer's disease, assessment, diagnosis, education interventions, continuing medical education.

Second, a web search was undertaken, examining advocacy organizations such as the Alzheimer's Society, academic institutes and departments, physician organizations, and pharmaceutical companies, among others.

Third, key informants were surveyed for their insights into available tools and educational information. Informants include physicians (both family physicians and specialists), nurses, social workers, and continuing medical education experts. A "snowball" approach was taken, where the intern asks each person if they know of other people to talk with. This portion of the review focused on tools and programs developed and available in Canada. The results of the three approaches are included in this report.

ASSESSMENT & DIAGNOSIS

De Lepeleire, Heyman and Buntix (1998: 431) describe the diagnosis of dementia as being a mainly "hypothetico-deductive" process: "something in the patient's clinical appearance, story or clinical picture rings a bell[;] a hypothesis is generated." In most cases, there will be a considerable time lapse between the detection of the first signs and reaching a diagnosis. The major elements identified include difficulties at work, ADL disturbances, problems with short-term memory, difficulties with social interaction and conversation, and behavioural disturbances. While memory problems are the symptoms most commonly associated with dementia, there are other important signs, such as loss of function, word-finding difficulties, and depression or anxiety.

Two Canadian Consensus Conferences on Dementia (CCCD) have been held (in 1989 and 1998) to develop consensus statements to guide primary care physicians in managing dementia care (Patterson et al., 1999a & 1999b; Clarfield, 1991). Another

conference was held this past year (2006) to further update these guidelines (Dr. H. Bergman, personal communication, October 10, 2006); however, the results have not yet been published. Cummings et al. (2002) have also published guidelines for family physicians for assessment of Alzheimer's disease in the United States, while Eccles et al., 1998, have developed evidence-based guidelines in England that are very similar.

The key steps required for a diagnosis of dementia, identified in both sets of guidelines, include:

1. Detailed history and physical examination (including identification of comorbidities).
2. Assessment of cognitive functioning.
3. Assessment of functional abilities.

Other aspects may require screening as well. Both guidelines note the high incidence of depression among people with dementia. Cummings et al. (2002) recommends the Geriatric Depression Scale (Yesavage et al., 1982-83) as a screen. Further laboratory testing may be indicated if there is evidence in the history and physical exam of another cause to the symptoms presented, such as delirium caused by an infection. Neuroimaging (e.g., a cranial CT scan) is recommended by Patterson et al. (1999) only in specific situations, such as with people aged less than 60 years or where cognitive function has declined very rapidly (Patterson et al., 1999a). Multiple assessments may be required over a period of time to arrive at and verify the diagnosis (Patterson et al, 1999a; Clarfield, 1991).

Guidelines have also been developed in British Columbia and Alberta. The Cognitive Impairment in the Elderly Working Group has developed guidelines for British

Columbia, which are currently under review and have not yet been published (Dr. M. Donnelly, personal communication, November 5, 2006). The draft guidelines outline recommendations related to recognition, diagnosis, and management. The information related to assessment and diagnosis is very similar to the Dementia Assessment Toolkit and to the three guidelines described.

The Alberta Medical Association (AMA) helps to coordinate a website called topalbertadoctors.org that provides clinical practice guidelines for several topics, including dementia. The top portion of the URL is an acronym for Toward Optimized Practice (TOP) program. The site includes a “decision tree” to help physicians navigate the steps of a dementia assessment by summarizing the steps, as well as in-depth clinical guidelines (TOP Program, 2005a & 2005b). The program is administered by the AMA, the Alberta College of Physicians and Surgeons, Alberta Health and Wellness, and Alberta’s health regions.

Pimlott et al. (2006), in a study of Canadian family physician compliance with the CCCD guidelines, evaluated 160 patient charts from academic family practices in Calgary, Toronto, and Ottawa. Overall, the study found fair to good adherence to the guidelines. About 80% of patients were assessed with an MMSE. However, a significantly higher proportion of patients were referred for neuroimaging than recommended by the guidelines, while referral of caregivers to support services and assessment of driving capacity was insufficient. The study did not assess rate of diagnosis.

Assessment of Cognitive Functioning

There is a wide range of instruments available to test cognitive function in dementia.

MMSE

Both guidelines identify the Mini-Mental State Examination as a commonly-used and recommended tool for assessing cognitive status (MMSE; Folstein, Folstein, & McHugh, 1975). It is the most commonly used tool in assessment of cognitive functioning related to dementia, and is recognized around the world (Cummings et al., 2002; Lorentz et al., 2002). Pimlott et al. (2006) found that the vast majority of patients (80.6%) seen by their family physician for dementia assessment (in several Canadian academic family medicine clinics) had at least one MMSE administered. Due to the widespread use of the instrument, an MMSE score is usually well understood across the various disciplines involved in caring for a person with dementia.

The tool includes 30 items spanning six topics: orientation, registration, short-term memory, attention, calculation, visuoconstructional skills, and praxis (Folstein, Folstein, & McHugh, 1975). It usually takes between five and ten minutes to administer (Lorentz et al., 2002). However, the MMSE was not designed specifically to assess dementia, and there are concerns around the reliability and validity of the scale in dementia assessment. It is not particularly sensitive at either end of the spectrum: it can have difficulty detecting the presence of mild dementia, and may also be unable to detect progressive decline in severe dementia (Cummings et al., 2002). Tierney et al. (2000) found that a cut-off score of 24 or less on the MMSE indicated a positive result for dementia. However, they found scoring more than 24 did not necessarily rule out the

presence of AD. Therefore, they do not recommend the MMSE as a screening or diagnostic tool, but see it as useful as a predictive tool in longer-term monitoring. They also proposed a reduced MMSE, utilizing only 2 subtests: Delayed Recall and Orientation to Place, and found that this test was nearly as accurate in predicting these values. Further, van Hout (2001) notes the MMSE may generate a large number of false positive results in a practice setting. MMSE scores are affected by most demographic and socioeconomic variables, including “age, education level, cultural background, social class, literacy, and language” (Lorentz, Scanlan & Borson, 2002: 728).

Other cognitive assessment tools

Lorentz, Scanlan & Borson (2002) reviewed ten dementia screening tools that take under 10 minutes to administer and had been evaluated in clinical settings. The researchers describe their view of an ideal of a dementia screening tool for use in primary care as follows:

A dementia screening tool appropriate for routine use in the primary care setting must be brief; easy to administer; acceptable to older persons; minimally affected by education, sex, age, and other factors unrelated to dementia; and have high sensitivity and specificity (Lorentz, Scanlan & Borson, 2002: 725)

They emphasized the challenge in balancing between short administration time and accuracy. Further, it is best if the screening test focuses directly on dementia (or more specifically on Alzheimer’s disease, the most prevalent form of the illness). Given the importance of administration time for family physicians, the researchers categorized the tools into ‘very short screens,’ (taking 0 to 2 minutes to administer), ‘short screens’ (taking between 2 and 5 minutes), and ‘standard screens’ (taking between 5 and 10

minutes) (Lorentz, Scanlan & Borson, 2002: 725).¹ They selected three tests as the best over all (all ‘short screens’): the Mini-Cog, the Memory Impairment Screen (MIS), and the General Practitioner Assessments of Cognition (GPCOG). Interestingly, Brodaty et al. (2006: 391) conducted a similar review and selected the same three tests as being the most appropriate based on ease and brevity of administration, validation in “community, population, or general practice samples,” and lack of likelihood to be confounded by socioeconomic and demographic characteristics. Overall, these tests all examine short-term memory. The performance of these three tests in detecting dementia have not been directly compared, but Lorentz, Scanlan & Borson (2002: 728) argue that, “[i]n theory, the Mini-Cog and the GPCOG should be more efficient than the MIS, because their recall distracters generate useful information that contributes to dementia detection, whereas the distracter task in the MIS does not.”

Mini-Cog

The Mini-Cog was developed specifically to address concerns around test biases related to educational background, language, and education. Unlike the MMSE, the accuracy of the test has been shown in testing to be uninfluenced by these factors (Borson et al., 2000). The sensitivity was 99% when tested in a language-diverse culture. This instrument is very short and can be administered in about 3.2 minutes. It involves a memory test (word recall) and a clock drawing test (CDT) as a distractor from the word recall exercise.

¹ Very short screens: clock drawing tests, Time and Change Test (Froehlich et al., 1999), WORLD test (Leopold & Borson, 1997). Short screens: Mini-Cog, GPCOG, Short Blessed Test (Katzman, et al., 1983), MIS, Short Test of Mental Status (Kokmen, 1991). “Standard” screens: MMSE, The 7-Minute Screen (Solomon et al., 1998), Short and Sweet Screening Instrument (Belle, et al, 2000), Short Portable Mental Status Questionnaire (Pfeiffer, 1975).

GPCOG

The GPCOG includes both a cognitive testing component and also includes information from key informants (Brodaty et al., 2002). It includes nine items asked to the patient and six to the caregiver or informant. This test requires about 4 to 5 minutes to be completed by both the patient and the key informant. The sensitivity and specificity were both high when tested. However, one item is based on the CAMCOG, which has been shown to be biased by sociodemographic factors.

MIS

This instrument includes four items that can be administered in about four minutes (Bushke, et al., 1999). Sociodemographic factors are found not to significantly affect the results of this test.

Clock Drawing Tests

Other well-known tests include the Clock Drawing Tests (there are several variations, which all ask the patient to draw the face of a clock, but vary in terms of instructions and scoring method. This is a very short screening method (can be finished under one minute), but, according to reviews by Borson et al. (1999) and Storey, should not be used as a sole measure for determining the presence of dementia.

MoCA

The Montreal Cognitive Assessment is a 10-minute assessment tool for the detection of MCI. It has been shown in a validation study to have very good sensitivity in assessing MCI (Nasreddine et al., 2005).

Overall, there are a range of cognitive assessment instruments available, including the well-known MMSE. Other reliable, shorter tools have been developed that are more

focused on measuring dementia, but the MMSE remains popular. The MoCA provides a tool for focused assessment of MCI or very early stage dementia.

Functional assessment

Activities of daily living (ADLs), such as bathing and feeding, and instrumental activities of daily living (IADLs), including tasks such as shopping, cooking, and managing finances, should be assessed. Cummings et al. (2002) recommend the ADL scale (Katz, et al., 1963) and IADL scale (Lawton & Brody, 1969), and Patterson et al. (1999a) recommend the Functional Assessment Questionnaire (FAQ; Pfeifer, Kurosaki, & Harrah, 1982).

EDUCATION OPPORTUNITIES

This section of the report explores existing research, both Canadian and international, examining the effectiveness of different kinds of education tools available for dementia. It also describes programs and tools that are available in Canada. This review indicates that a wide range of dementia education tools have been developed targeting family physicians in Canada. Types of tools identified in the review include continuing medical education (CME) programs, education websites, and interactive DVD or CD-Rom tutorials.

There is also evidence that family physicians are interested in learning more about dementia diagnosis and assessment. In a survey of 758 American interns and family physicians, Robinson et al. (2001) found that about two-thirds were very interested in learning more about dementia care, ranking it the most important topic in a list of 18 geriatric medicine topics.

While there has not been research in Canada explicitly comparing the effectiveness of different kinds of educational tools for helping family physicians improve diagnosis and management of dementia, there has been one study in the United Kingdom, and one in the United States, that undertook this task. The UK team developed their own comprehensive education program including CD-Rom-based tutorial, decision support software, and practice-based workshops, based on a literature review (Downs, 1996; Iliffe, 1997), the aforementioned English guidelines (Eccles et al., 1998), and consultations with a multidisciplinary expert group (Iliffe et al., 2002a, 2002b, 2002c; Wilcock et al., 2003; Turner et al., 2003). The team undertook a randomized control trial to compare effectiveness of the three interventions they developed, which involved 36 practices in Scotland and London (Downs et al., 2006). The practices were randomly assigned to one of the three interventions or to the control group. Two outcomes measures were evaluated: rate of dementia detection represented by comparing the rate of dementia diagnosis at baseline, prior to the intervention, and nine months later, post-interventions and improvement in adherence to dementia care guidelines. Overall, 450 patient records were evaluated. The decision support software and practice based workshops resulted in significantly improved rates of dementia detection compared to the control group between the baseline measurement of rate of dementia diagnosis in each clinic taken prior to the interventions, and nine months later, post-intervention.

The US study investigated the influence of an educational program involving presentation and discussion in a small group format on physician knowledge. This intervention was found to have little influence on family physician knowledge (Chodosh et al, 2006).

Continuing Medical Education Programs

Robinson et al. (2001: 963) comment that “continuing medical education is the current approach to improving performance” when trying to help physicians develop competence in a particular area. However, Davis et al. (1995), in a systematic review of the literature examining the effectiveness of educational interventions for physicians, found that effective traditional interventions such as conferences did not significantly. This meta-analysis included 99 randomized controlled trials looking at the impact on at least one outcome measure: physician performance (as measured by improved rate of diagnosis or improved adherence to clinical guidelines, for example), and health outcomes. Therefore, Robinson et al. (2001) argue that learner-centered models that incorporate needs-assessment, and approach the target groups themselves to determine their specific interests and needs, may be more appropriate. In the case of primary care physicians and care of older adults, Thomas et al. (2006), in a systematic review of knowledge transfer and geriatrics education for primary care physicians argue that CME programs must be made accessible to family physicians within the time and financial constraints they face (as discussed above). They found that providing CME credit can be very strong motivator.

Two CME courses for dementia specifically targeting family physicians were identified as part of this review. Both of these courses are Mainpro® accredited, enabling participants to gain CME credit. Mainpro® (Maintenance of Proficiency) is the College of Family Physicians of Canada’s (CFPC) program that manages continuing medical education requirements for Canadian family physicians (CFPC, 2004).

The first program was developed in the departments of Family Medicine, Geriatric Medicine, and Continuing Medical Education at the University of Calgary. While it is no longer available as a face-to-face CME program, it is available in an online version hosted by Memorial University Medical School in St. John's, Newfoundland (Dr. D. Hogan, personal communication, October 12, 2006; Dr. Bruce Wright, personal communication, October 20, 2006). Memorial led the development of a website, RuralMDcme.ca, in cooperation with several CME departments across the country, as well as several rural physician networks. The site offers several online CME courses for rural physicians. The dementia course is called *Introduction to Assessment and Management of Dementia*. Overall, an evaluation study showed that surveyed participants were satisfied with the course, and the accessibility that it offered for rural users. However, there was evaluation of the effectiveness of the program in improving rates of dementia detection (Curran et al., 2004).

The second was created by a team of geriatricians in Ontario, led by Dr. Bill Dalziel, an Ottawa geriatrician. This program is called the Dementia Toolkit, and is coordinated by the Alzheimer Society of Ottawa and the Champlain Dementia Network. It began about five years ago and includes about nine modules addressing various topics, such as assessment, diagnosis, treatment, MCI, and non-Alzheimer's disease dementias. The program is closely related to the ADEPT (A Dementia Education Physician Teaching) program developed by a national team also led by Dr. Dalziel and funded by Janssen-Ortho. The ADEPT program was also Mainpro® accredited, but is now available only as an interactive DVD training format (described later). The assessment and diagnosis module of the toolkit follows the 1999 Canadian guidelines and includes

information about when to consider screening for dementia, instructions for how to screen (including a short questionnaire for family members), assessment of MCI, assessment of cognition (either with the full MMSE or 4-item mini version), functional assessment depression, and physical examination.

Family physicians are able to request a particular session of interest, and one of six specialists will deliver the session, usually over breakfast or lunch. About 300 to 350 physicians from Ottawa and the Ottawa valley have completed the program so far. The Regional Geriatric Networks in London and Hamilton are planning to introduce this program as well (Dr. B. Dalziel, personal communication, October 17, 2006; Lynn Sage, personal communication, September 27, 2006; Dr. M. Borrie, personal communication, October 4, 2006). Basic evaluation of participant satisfaction has been undertaken by the Champlain Dementia Network, which shows that overall, participants appeared to be very satisfied with the material presented in the program, with the vast majority stating that the content of the dementia toolbox met their needs (Champlain Dementia Network, 2007). However, the evaluation did not explicitly measure changes in practice behaviors and did not investigate outcomes for patients and families.

Related to the Dementia Toolkit is the Peer Presenter Program developed as part of the physician training initiative of Ontario's Strategy for Alzheimer Disease and Related Dementias. Peer Presenters are drawn from among identified Opinion Leaders (described below), and were provided with educational material developed as part of the strategy that was focused toward either interactive, small-group session or didactic sessions such as grand rounds. Thirty-six presenters were identified. Evaluation of the interactive sessions showed that knowledge of dementia was positively impacted, and

that about 80% felt that they would change their practice as a result of what they learned. Similar results were achieved with the didactic sessions, with 85.3% stating that they would change their practice as a result of what they learned.

Ontario Opinion Leader Program

As noted, the Opinion Leader Program is directly linked to the Peer Presenter Program of the Ontario's Strategy for Alzheimer Disease and Related Dementias. This unique program involves the identification of particular family physicians who have interest and expertise in dementia, as well as "the ability to influence practice changes" (McAiney, 2006: 5). They are either nominated by key informants (such as geriatric specialists), or can nominate themselves. They receive specialized training through a 2-day CME-accredited workshop and continued support through expert mentoring groups (geriatricians), and are expected to act informally as "go-to" people for dementia-related information and resources at the community level for other family physicians, including through "hallway consultations," and "modeling best practices" (McAiney, 2006: 5). According to McAiney (2006: 6-7), 86 family physicians were selected from a pool of 401 nominees. On average, they had been in practice for 20.6 years. The 2-day CME session was well evaluated, finding that after taking the workshop, participants felt significantly more comfortable in managing Alzheimer disease and related dementias, and, in particular, significantly more at ease with assessment and diagnosis of dementia. Further, evaluation indicates that the opinion leaders have influenced family physicians in their communities. They were asked to estimate approximately the number of physicians they felt they had directly influenced in their role as an opinion leader. They estimated on average that they had influenced 192 physicians. Further, 110 of these influenced

physicians were identified and asked whether they felt that their understanding of Alzheimer's disease and related dementia was improved—87.5% agreed that it had. Nearly 7-in-10 (67.9%) agreed that their understanding of diagnosis had improved. Interestingly, most interactions with the opinion leaders were informal (71.4%), which the influenced physicians felt was the most effective means (58.9%).

Physician Education Websites

The Ontario College of Family Physicians has developed a dementia education website (dementiaeducation.ca), also a part of the Ontario Alzheimer Disease Strategy, that provides access to a variety of educational tools, including interactive learning modules, clinical practice guidelines, and other education resources (Dr. B. Dalziel, personal communication, October 17, 2006; Dr. M. Borrie, personal communication, October 5, 2006; Dementia Education, 2003). One must register and log in to access most of the content. Evaluation data from the site indicates that by November 8, 2005, there were over 500 registered users (including family physicians, academics, and other professionals). There were about 1,650 visits monthly and 18,000 to 40,000 hits each month from December 2004 through November 2005 (McAiney, 2006: 39).

Another web-based resource, UptoDate® is an educational website designed for physicians and nurse practitioners in multiple specialties, including family medicine and adult primary care. UptoDate® is a tool developed and run by physicians, who conduct a continuous review of over 375 academic publications on a wide range of clinical topics. The reviews are updated with relevant information every four months. There is extensive information available about dementia, including a sections specific to assessment and diagnosis. The website is easy to search, including hyperlinked tables of contents for

each topic area. It is an American tool but is used in more than 100 countries, including Canada. A subscription is required to access the site (UptoDate®, n.d.). All health regions in British Columbia and Alberta have subscribed to the site for their employees to access, and it is widely available in medical libraries and teaching hospitals (Frank MacDonald, personal communication, March 26, 2007; Tricia Woo, personal communication, March 26, 2007).

Interactive CD-ROM/DVD Tutorials

Dr. Harold Karlinsky (2000), a psychiatrist at Riverview Hospital in Vancouver, has developed an interactive tutorial CD-ROM called *The Clinical Diagnosis of Alzheimer's Disease: An Interactive Guide for Family Physicians*. The CD was developed with the support of the Alzheimer Society of BC, Riverview Hospital, and Novartis. The CD covers history-taking, physical examination, cognitive assessment, lab investigations, diagnostic neuroimaging, clinical diagnosis, as well as an interactive case study and self-evaluation questions.

Dr. Bill Dalziel has produced a new interactive DVD based on the ADEPT program (which includes the Dementia Toolkit), that portrays interactions between physicians and sham patients. It has been sponsored by Janssen-Ortho (Dr. Bill Dalziel, personal communication, January 20, 2006).

Other Educational Programs and Resources

There are other educational programs that have been developed for various professionals involved in caring for older people with dementia, but not necessarily specifically for family physicians in a community practice.

PIECES. The PIECES program has been developed in Ontario by a team led by Dr. Ken LeClair at Providence Health in Kingston. The program targets all professionals working with older adults in long-term care who have dementia and mental health conditions (PIECES Resource Guide, 2006). The education sessions and resource guide examine dementia and other mental health concerns such as delirium and depression, medications, assessment tools, and relevant lab values. A program specific to community-based family physicians is currently being developed (Dr. Ken LeClair, personal communication, November 21, 2006; Dr. Sid Feldman, personal communication, January 19, 2006).

UBC Care for Elders Modules – Dementia with Behavioral Challenges. This program, which combines a pre-reading package with small group sessions, is designed for interdisciplinary teams, and is very comprehensive, exploring topics ranging from assessment instruments to issues around driving. Since the program is not designed specifically for family physicians, it is not CME accredited (Carr et al., 2006; Dr. Martha Donnelly, personal communication, November, 2007).

CONCLUSIONS

Clearly, family physicians face many challenges in assessing and diagnosing dementia. Dementia is difficult to diagnose, and is associated with fear and social stigma for the people affected. Further, family physicians in Canada face, for the most part, considerable pressure to conserve time with patients, given a physician shortage and a fee-for-service model. Therefore, as noted above, physicians need efficient tools to help

them during the assessment and diagnostic process. However, they may also need educational resources to help them incorporate these tools into their practice.

There have been a broad range of educational tools and resources developed for education of family physicians in Canada, some of which has been thoroughly evaluated in terms of participant satisfaction and perceived utility of the information for changing practice. However,, aside from the evidence presented by Downs et al. (2006) suggesting that practice-based workshops and decision support software contribute to improving rates of diagnosis of dementia, there is little evidence suggesting which kinds tools may be most effective in assisting family physicians in improving diagnosis of dementia. In particular, there has been no research comparing tools developed in Canada. Each of major kind of educational interventions may offer certain advantages. Further, different kinds of interventions may be more appropriate in different contexts (e.g., urban or rural areas). Further research is required to examine which kinds of tools may be most effective in different contexts.

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