



CVD Learning

Needs and the Primary-Care Physician



By Vernon Curran, PhD; Tanya Noseworthy, BSc; Fran D. Kirby, MEd;
and Lydia B. Hatcher, MD, CCFP

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Dr. Curran is assistant professor,
faculty of medicine, Memorial
University of Newfoundland,
St. John's, Newfoundland.



Dr. Hatcher is director of CME, fac-
ulty of medicine, Memorial
University of Newfoundland,
St. John's, Newfoundland.

Cardiovascular disease (CVD) is the leading
cause of death and morbidity in most Western
societies.¹ In 1995, CVD-related mortality
accounted for 37% of all deaths in Canada. The
direct costs of CVD comprise a large proportion of
the total health-care expenditures in Canada and
accounted for \$7.3 billion, or 17%, of the total
direct costs of illness in 1995.²

Ms. Noseworthy is management analyst,
Newfoundland and Labrador Health Care Boards
Association, and Ms. Kirby is manager, office of
professional development, faculty of medicine
Memorial University of Newfoundland,
St. John's, Newfoundland.

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The onset and incidence of CVD has been linked to a number of physiologic and lifestyle risk factors, including high blood pressure (BP), elevated serum cholesterol and smoking. A number of studies have shown these factors can be managed to influence the etiology of CVD and associated morbidity and mortality rates.³⁻⁹

There is consensus in the literature about the primary-care setting as an appropriate point for screening, detecting, monitoring and treating CVD risk factors.⁹⁻¹¹ The concern is that many of the preventive activities that could influence CVD-related

health outcomes are challenging for physicians to apply successfully in primary-care practice.

Many physicians do not feel they are appropriately trained in translating knowledge into practical dietary advice. They also do not feel confident in their ability to provide effective lifestyle counselling and behavior modification services to their patients.¹²⁻¹⁴ One study survey reported a majority of physicians felt lifestyle counselling was difficult and that their influence on patients' behavior was limited.¹⁵ MacDonald and Daub revealed that physicians in Alberta demonstrated deficiencies in

Summary

CVD Learning Needs and the Primary-Care Physician

This study's purpose was to survey the perceived cardiovascular disease (CVD) continuing medical education (CME) needs and learning preferences of a randomized sample of Canadian primary-care physicians. The findings indicated that Atlantic Canadian, rural, older and male physicians reported seeing the highest number of CVD patients in their practices. The greatest self-reported knowledge gaps existed in the areas of arrhythmia, peripheral vascular disease and treating women with CVD. Patient management areas that presented the greatest perceived problems involved compliance with lifestyle and medication. The findings have important implications for the design of CVD-related CME programs.

- **Background.** CME planning receives important information from formal needs assessment techniques, which identify the learning needs of a particular physician population. The questionnaire-type survey is a common technique for assessing the needs of the adult learner.
- **Objectives.** The purpose of this study was to conduct a questionnaire survey of the perceived CVD CME needs and learning preferences of Canadian primary-care physicians.
- **Methods.** Between October 1999 and January 2000, a questionnaire-survey was distributed to a randomized sample of Canadian physicians. The survey was designed to gather information on the practice profiles of respondents, perceived CVD learning needs and instructional format preferences. Of the 4,105 surveys distributed, 1,503 were returned for a response rate of 36.6%.
- **Results.** Atlantic Canadian, rural (population less than 10,000), male and more experienced physicians reported seeing more than 50 CVD patients on a monthly basis, as compared to other physician groups. Topics relating to arrhythmia were identified most often as perceived areas for CME, while the greatest perceived CVD management problems included patients' compliance with lifestyle and medication, and patients who do not follow up. The Small Group Learning workshop format was the instructional format preferred by a majority of respondents.
- **Conclusions.** The findings from this study provide a good basis for the design of CME programming and for identifying that segment of the Canadian primary-care physician population for whom CVD-related CME could have the greatest benefit.

their knowledge of CVD and, as a result, were not identifying major CVD risk factors in their patients.⁵ Another investigation by Grant, *et al* found Quebec physicians were aware of important CVD risk factors, but some were unsure of the efficacy of treatment.¹⁶

A further problem related to CVD preventive activities is the minimal influence clinical practice guidelines have on physicians' practises. Despite the dissemination of several sets of national guidelines on CVD management over the past two decades, researchers have found variations in the way physicians treat CVD patients continue to persist.¹⁷⁻²⁰ Only a small number of Canadian primary-care physicians appear to have adopted or applied clinical practice guidelines appropriately in their management of cardiovascular-related diseases.²¹⁻²³

Kluger, *et al* and Straand and Rokstad have reported that physicians believe they would be more effective in patient lifestyle modification if they were given support through continuing medical education (CME) programs.^{11,13} Helman also reported that general practitioners expressed a high interest in learning more about the nutritional aspects of CVD management, yet found there was minimal teaching on the subject available specifically for primary-care physicians.²⁴

A number of studies have demonstrated the effectiveness of CME in enhancing CVD management practises.²⁵⁻²⁸ In one study, a CME program addressing the office management of hypertension was found to promote positive clinical change, which was maintained during a 12-month post-education period.²⁹ Ockene, *et al* also revealed a direct effect of CME on changes in physicians' performance with regard to nutrition counselling.²⁶ Jennett, *et al* found a CME program on the management of hypertension was effective in improving clinical behavior.³⁰

The need for the continuous review of clinical practice in CVD was reported by Steptoe, *et al*,

who concluded the attitudes of health-care professionals were crucial to the implementation of effective cardiovascular prevention strategies.¹⁵ Needs assessments serve an important role in gathering information on physicians' learning needs, attitudes toward models of care and knowl-

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edge of clinical practice guidelines, and in ascertaining preferences for CME participation.

The purpose of the authors' study was to conduct a national survey of the CME needs of Canadian primary-care physicians in the area of CVD management. Results from this survey provide important information, which may assist CME program providers in designing effective instructional activities. Such activities can, and should, address the learning needs of physicians and enhance their CVD management practises.

Methods

A questionnaire was used to collect information on the perceived CVD learning needs of primary-care physicians in Canada. A total of 4,105 surveys were distributed randomly to a proportional sample of physicians from each province. Of the distributed surveys, 1,503 were returned for a response rate of 36.6%. A review of similar survey studies revealed comparable response rates between 29% and 56%.^{5,7,31,32} The random sample was selected from lists of registered physicians supplied by provincial and territorial

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medical societies, and by the College of Family Physicians of Canada (CFPC).

The questionnaire was designed to collect information on physicians' perceived CVD continuing education needs, interests and preferences. It was comprised of closed-ended and open-ended questions, which were divided into three sections: background information (demographic data), therapeutic information and preferred educational format. The results were coded and analyzed using the Statistical Package for the Social Sciences (SPSS 9.0). Descriptive statistics were used to present the basic frequency of responses across categories. Cross-tabulation was used to compare responses on the basis of province of practice location, size of community, gender, age, year of graduation from medical school and physician type. Open-ended qualitative responses were coded and analyzed using the Ethnograph 5.0 software. The Wilcoxon Signed-Rank test was used for testing the difference between the perceived current and desired levels of CVD knowledge reported by the respondents.

Results

The demographic section of the survey collected information on the respondents' province of practice, the size of community where their practice was located, gender, age, year of graduation from medical school and physician type. A majority of physicians who responded indicated they practised in either Ontario (35.9%) or Quebec (22.8%).

Twenty-five per cent of the respondents practised in a community with a population of less than 10,000 people; 22.8% practised in a community with a population between 10,001 and 50,000 people; 15.3% practised in a community with a population between 50,001 and 150,000 people; and 36.8% practised in a community with a population greater than 150,000.

A majority (66.8%) of survey respondents were male, while 33.2% were female physicians. A Chi-square test revealed no significant difference ($P = 0.733$) between the gender distribution of the respondent sample and the actual physician population in Canada, as reported by data from the Canadian Medical Association.³³

In terms of age, the largest proportion of respondents was between the ages of 25 and 44 years (49.9%). Those aged 45 to 54 represented 33.5% of the sample, while respondents aged 54 to 64 comprised 12.2% and physicians who were 65 or older represented 4.4%. These results also suggest the survey respondents were representative of the Canadian primary-care physician population on the basis of age.³³ The respondents were either College of Family Physicians of Canada (CCFP) certified family physicians (47.5%) or non-CCFP certified family physicians (48.6%).

Overall, 38.5% of physicians reported they saw 50 or more CVD patients per month. A majority of Atlantic Canadian physicians reported seeing 50 or more CVD patients per month, with New Brunswick physicians seeing 52.6%, Nova Scotia 54.5%, Newfoundland 50% and Prince Edward Island physicians 60%. These results are supported by data from Health Canada, which illustrates regional variations in cardiovascular mortality rates.² The Health Canada data show an east-west gradient, with Atlantic Canada showing consistently higher rates of CVD mortality than other areas of the country.

Newfoundland men and women have the highest rates of CVD mortality at 317 and 294 per 100,000 people, while British Columbia has the lowest rates at 226 for males and 219 for females per 100,000.² The provincial rates of smoking, high BP and obesity parallel the CVD gradient and the authors of the report conclude the differences in CVD mortality rates may be partially explained by differences in the prevalence of risk factors.

The results of the number of CVD patients respondents reported seeing on a monthly basis are arranged on the basis of community size, gender, age, year of medical school graduation and physician type. A Chi-square test revealed a significant difference between the size of community in which a physician practised and the number of CVD patients he/she saw on a monthly basis ($P = 0.004$). A larger proportion of physicians practising in communities with a population of less than 10,000 people reported seeing more than 50 CVD patients on a monthly basis, as compared to physicians who practised in communities with larger populations. This is consistent with another study that found Canadian communities with a population of less than 10,000 people had approximately 1,175 people for every doctor,³⁴ whereas communities with a population larger than 100,000 had 389 people for every physician. The larger the patient population, therefore, the greater the chance a physician would encounter a larger number of illnesses in a given disease area.

In terms of gender, a larger proportion of male physicians (47.5%) reported seeing more than 50 CVD patients on a monthly basis, as compared to their female colleagues (19.9%). Younger physicians also reported seeing a smaller number of CVD patients, as compared to older physicians. A Chi-square test revealed a significant difference ($P = 0.001$) between year of graduation and the number of CVD patients seen by a physician. Over 44.2% of physicians who graduated between 1970-79 were seeing more than 50 CVD patients per month, as compared to only 29.9% of physicians who graduated since 1990.

The second section of the survey gathered information on the respondents' perceived CVD learning needs, as well as the perceived problems they experienced when managing CVD patients. Two Likert-type scales ranging from 1 to 5 (1 = little and 5 = extensive) were provided for both

current knowledge level (CKL) and desired knowledge level (DKL). Physicians were asked to rate their CKL *versus* DKL for 11 CVD conditions. The difference between the two scores provided an indication of the self-reported knowledge gaps among the respondent population.

In terms of gender, a larger proportion of male physicians (47.5%) reported seeing more than 50 CVD patients on a monthly basis, as compared to their female colleagues (19.9%).

The results of physicians' reports of perceived CKL *versus* perceived DKL and Wilcoxin tests revealed significant gaps in all the areas. Arrhythmia showed the greatest perceived gap between CKL and DKL ($Z = -31.11$).

The respondents were also asked to specify other knowledge or skill areas in which they would like to enhance their CVD management competencies. A number of common categories emerged from the respondents' comments, including congenital and valvular heart disease, medications for treatment and prevention, prevention, acute diagnosis and treatment, aortic aneurysm and peripheral vascular disease, stroke, and psychiatry and social effects of CVD.

In particular, topics relating to arrhythmia were identified most often and included general information on the condition, information pertaining to atrial fibrillation (AF), office treatment and management of arrhythmia, pharmaceutical therapies, treatment and management of AF, pharmaceutical therapies for AF, diagnostic testing and test interpretation, and arrhythmia and post-myocardial infarction.

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Table 1

Respondents' Report of Problems Experienced in Managing Patients with CVD

Problem	Rank	Frequency (%)
Compliance with lifestyle	1	1,282 (85.3%)
Compliance with medications	2	585 (38.9%)
Do not follow up with you	3	270 (18.0%)
Decline medications	4	257 (17.1%)
Do not attend referral appointments	5	107 (7.1%)
Do not adhere to tests that are ordered	6	100 (6.7%)

Another item in this section asked physicians to use a nominal checklist scale to identify the patient-centered problems they encountered most often when managing CVD (Table 1). The patient's "compliance with lifestyle" (85.3%), "compliance with medication" (38.9%) and patients who "do not follow up with you" (18.0%) were the three problem areas reported most often by survey respondents. All of the problem areas were related to the patient's compliance behavior and not to the performance or behaviors of the physicians themselves.

In a follow-up question, the respondents were asked to provide suggestions for addressing the problems they experienced in managing CVD patients. The suggestions that were made included the provision of relevant patient education materials, increased counselling time and some form of compensation for this time, closer follow-up, persistence and patience, increase in familial support and improved medication regimens (Table 2).

The final section of the survey targeted physicians' preferences for CME format, time and day for participation in CME, and opinions of the factors contributing to successful CME. The small group learning workshop format was the instructional format preferred by a majority of respondents. Over 35% of the respondents indicated Wednesday was the day of the week they most preferred for participating in CME, while Fridays (28.7%) and Thursdays (25.7%) also were selected by a large proportion of physicians (Table 3). In terms of time of day and weekend participation, a large proportion of physicians indicated a preference for participating in CME if it were held in the evening after 5 p.m. and/or if it occurred during Saturday (half-day).

An open-ended question asked physicians to identify the three things they believed contributed to a successful CME event. A large number of physicians commented on content relevancy, speaker qualities and learning format (Table 4). Content relevancy emerged as a sig-

Table 2

Respondents' Suggestions/Solutions to Problems in the Management of CVD

Description of Category	Frequency
• Public/patient education programs.	279
• Increased counselling time for patients and some form of compensation for this time.	91
• Closer follow-up with patients.	61
• Be persistent and patient, keep trying, use slow steps.	48
• Increased patient support from family, friends, community, doctors.	46
• Improved medication (simplify regimen [once per day], decrease cost, increase insurance coverage, decrease side effects, better knowledge of drug interactions).	44
• Increase patient responsibility for own health (fee payer system as a means for increased compliance).	27
• Promotion of community and individual exercise programs, as well as lifestyle management programs.	27
• Use of motivation and encouragement to promote compliance and lifestyle change in patient.	27
• Improve counselling skills of physicians.	24
• Use of positive reinforcement to promote compliance and lifestyle change.	23
• Reinforce primary prevention in school systems.	23
• Increased funding and availability of registered dietitians, home-care nurses, fitness instructors, <i>etc.</i>	22
• Use of a multidisciplinary approach to lifestyle change and treatment compliance (<i>i.e.</i> , supervision by medical team of doctors, specialists, nurses, <i>etc.</i> ; and the use of a variety of treatment strategies, such as traditional medications, herbal medications, exercise programs, alternative medicine, <i>etc.</i>).	19
• Increase smoking cessation by increasing cost of cigarettes, increasing anti-smoking lobbying, <i>etc.</i>	15
• Provide relevant, personalized patient result handouts to each patient, including recognition of any progress.	13
• Improve doctor-patient relationships, fostering improved communication and honesty.	13
• Increase access to specialists and timely investigations.	13

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Table 3

Respondents' Report of Preferred Weekday for CME

Day	Rank	Frequency (% of survey sample)
Wednesday	1	540 (35.9%)
Friday	2	432 (28.7%)
Thursday	3	386 (25.7%)
Tuesday	4	283 (18.8%)
Monday	5	178 (11.8%)

Table 4

Respondents' Report of Factors Contributing to Successful CME

- Content relevancy
- Speaker qualities
- Learning format
- Supplemental learning resources
- Location, time and duration
- Learning atmosphere
- Food and refreshments
- Social activities/family
- Cost
- Accreditation
- Sponsorship
- Follow-up

nificant category, referring to the nature of the information provided, its comprehensiveness, timeliness, extent to which it was evidence-based and relevance to primary-care providers. The category “speaker qualities” referred to the expertise and presentation abilities of the speaker. Quality also referred to process expertise,

such as the ability to organize and present information in an interactive manner responsive to the learning and practice needs of the audience. The category of “learning format” also emerged, referring to the type of learning methods used to facilitate learning.

Discussion

A basic needs assessment is an important methodology, which organizers of adult and continuing education use for informing the design, development, planning and evaluation of instructional programming. Rossett defines needs assessment as “a process for the systematic gathering of information related to learning, training or performance needs, issues and concerns.”³⁵

The need for the continuous review of clinical practice in the management of CVD has been reported by Steptoe, *et al.*¹⁵ These authors conclude the attitudes of health professionals are crucial to the implementation of effective cardiovascular prevention strategies and that these attitudes require regular review. The needs assessment survey conducted in this study is one way of helping primary-care providers recognize what it takes to provide appropriate CVD management.

The main limitation of the results from this study relates to the randomized, volunteer sample of physicians who responded to the survey. The greatest criticism of a volunteer sample is that it may not be representative of the true responses of the actual population from which opinions and perceptions are gathered.

In this study, the demographic characteristics of the respondent sample did not differ significantly from the general characteristics of the Canadian primary-care physician population. The problem of nonrespondents is always vexing and, unfortunately, the survey method may not always represent the attitudes and perceptions of nonrespondents accurately. Therefore, other methods, such as focus groups and interviews, are suggested as further techniques for exploring issues surrounding CVD management.

The factors appearing to have the greatest influence on the number of CVD patients primary-care physicians see on a monthly basis include:

- Practising in Atlantic Canada;
- Practising in a small community with a population of less than 10,000;
- Being an experienced physician; and
- Being male.

These findings have important implications in terms of the segment of physicians who might benefit the most from CVD-focused CME (*i.e.*, rural, male, older primary-care providers and practitioners in Atlantic Canada). The respondents also reported the largest knowledge gaps, in terms of current *versus* desired knowledge, existed in the areas of arrhythmia, peripheral vascular disease, women with CVD and congestive heart failure. Patient management areas with the greatest perceived problems included:

- Compliance with lifestyle;
- Compliance with medication; and
- Patients who do not follow up.

A large number of respondents suggested the following solutions to these problems:

- Organizing and delivering relevant public and/or patient education campaigns; and
- Increasing counselling time and some form of compensation for this time.

The findings from this study provide a good basis for understanding the perceived learning needs of the Canadian primary-care physician as it pertains to CVD management. The results also have important implications for the provision of CME to segments of the primary-care population where the greatest needs exist. CME programs meant to enhance CVD management practises of primary-care physicians should consider the findings from this survey in the planning, design and delivery of educational interventions. CME

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