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Perceived Learning Needs of Family Physicians in British Columbia

SUMMARY

To determine family physicians' preferences for time, location, instructional format, and topics, the Division of Continuing Medical Education at the University of British Columbia conducted a survey, in which 1200 questionnaires were mailed to a stratified, proportional random sample of the 3270 general practitioners in the province, the stratifications being urban or rural and decade of graduation. A return rate of 61% yielded 648 usable questionnaires, which exceeds the sample required for analysis with no stratifications. Most popular days for involvement in continuing medical education were Fridays and Saturdays in the months of February, March, October, and November. Common skin disorders and hypertension headed the list of most relevant topics for the whole group and for the urban stratification. Hypertension was superseded by eye emergencies in the rural stratification. (*Can Fam Physician* 1990; 36:262–265.)

RÉSUMÉ

La Division d'éducation médicale continue de l'Université de Colombie-Britannique a mené une enquête auprès des médecins de famille afin de déterminer leurs préférences quant au moment, à l'endroit, au type d'enseignement et aux sujets d'ÉMC privilégiés. A cette fin, 1 200 questionnaires furent postés à autant de praticiens généraux sélectionnés par échantillonnage aléatoire stratifié parmi les 3 270 omnipraticiens de la province, la stratification se voulant représentative du milieu urbain et rural et de la décennie de la promotion. Un taux de réponses de 61% a permis de compiler 648 questionnaires, ce qui excède l'échantillonnage requis pour faire une analyse sans stratification. Les journées jugées le plus populaires sont le vendredi et le samedi, et les mois ayant la préférence sont février, mars, octobre et novembre. Les affections cutanées courantes et l'hypertension viennent en tête de liste des sujets jugés les plus pertinents pour l'ensemble du groupe et pour le groupe urbain. L'hypertension fut supplantée par les urgences occulaires en milieu rural.

Key words: family medicine, medical education

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DETERMINING THE CONTENT of continuing medical education (CME) programs presents a constant challenge if CME providers are to offer their clientele valuable, useful courses. At present the University of British Columbia's Division of Continuing Medical Education selects its program content by polling a representative committee of physicians, from participants' suggestions on course evaluation forms, and from faculty assessment of need. Despite the high quality of the programs offered, there is concern that the learning needs of a large number of physicians in general, and family practitioners in particular, are not being met.

A learning need has been defined in a number of ways but most often as "a gap between current and optimal competence or performance."[1] Needs can be desires, interests, or deficiencies. When needs are identified by the learner, they are called "perceived" needs. Objective assessments of performance, however, can reveal "true" or real learning needs not necessarily perceived by the learner. Thus two types of needs assessment may be performed: perceived and real.

Real needs assessments have been made by practice profiles,[2] audits of medical records,[3] patient care appraisal,[4] simulated patients,[5] and stimulated recall of obstetrical cases.[6] While each of these methods provides objective data, they are expensive, replete with methodological problems, and are limited to a small number of subjects.

Exposure of real gaps between current and optimal performance may or may not motivate physicians to seek CME. Their interests and their own perceptions of learning deficits must also be taken into account if suitable pro-

grams are to be designed. Hence a perceived needs assessment is of equal value to the CME provider.

The perceived needs of physicians have been studied in New Mexico,[7] Iowa,[8] New Zealand,[9] West Virginia,[10] and Maritime Canada.[11] Each of these surveys asked different questions of different populations. The New Mexico survey[7] concentrated on marketing data from all 647 physicians surveyed (response rate 72.4%), such as factors considered important in attending CME events. November was the most popular month, and Fridays and Saturdays were the best days. Cost was a factor for the lower-earning physician groups, such as family physicians. West Virginia's mailing to 3265 physicians (response rate 32%) also elicited marketing data.[10] For their respondents, a Saturday in October was the best time and specialty updates were the most valuable content. Cost was rated low as a factor.

Family physicians comprised the sample in Auckland, New Zealand (n= 474, response rate 90.1%).[9] Respondents were asked to rate 87 topics for importance. The most popular clinical topics were allergies and acute ophthalmology, with manipulation and cardiorespiratory emergencies being the most favoured technical procedures.

Lessner and Driscoll[8] studied the congruence between rank ordering of 30 out of 100 topics by faculty (because CME is routinely planned by faculty) and practising family physicians (n = 140, response rate 22%); 53% of topics were ranked congruently. Differences occurred largely in behavioural medicine topics, such as patient education and compliance, which faculty rated higher.

The Maritime survey[11] was of preferred learning methods and sources of information by 2173 physicians (specialists and family physicians). A response by 62% showed that reading is the most preferred method for learning, and clinical traineeships for upgrading skills.

Although the information provided by these studies was useful, it did not fully answer the questions the Division of Continuing Medical Education had about the perceived needs of family physicians in British Columbia, who are their largest group of clients. Hence a survey of their needs was conducted.

Purpose and Questions

The purpose of this study was to provide data that will inform the policy and program decisions of the Division of Continuing Medical Education, U.B.C. The study sought to answer the following questions.

1. What are the preferred times and location of CME offerings for family physicians?
2. What are the preferred instructional formats for CME?
3. What topics, skills, or competencies do family physicians consider important to their continuing education?
4. Do year of graduation and location of practice influence responses to the above questions?

Method

Subjects

The total population of non-postgraduate general practitioners in British Columbia is 3270. To provide a random sample with a 95% probability that the greatest frequency of response fell within a confidence level of +/-0.04, plus 15% for non-response, 600 subjects were required. To provide a random proportional stratified sample where the stratifications were decade of graduation (before 1970, 1971 to 1980, after 1980) and location of practice (rural or urban), double this number was required. Therefore the sample was 1200.[12]

Questionnaire

A questionnaire was designed to answer the study questions. It included sections on resources used (e.g., journals or other physicians); the effectiveness of learning activities, such as lectures or reading; access to audio-visual equipment or computers; preferred months, days, times, and location of courses; factors considered when contemplating CME (e.g., fee or topic); relevance of clinical topics, technical procedures, counselling, and miscellaneous topics; and demographic data.

The list of 129 topics that were rated for relevance was drawn from:

- a poll of members of the Education Committee of the British Columbia Medical Association;
- a poll of members of the Division of CME Advisory Committee; and
- suggested topics on CME evaluation forms.

The questionnaire was tested on physicians in the Department of Family Medicine, who were asked to evaluate it for:

- time taken to complete it;
- ease in completion;
- ambiguities in question wording; and
- appropriateness and completeness of the topic list.

The final version was printed on optical scan sheets and mailed to 1200 subjects, together with a stamped, addressed envelope and a letter from the Division Director requesting participa-

Table 1
Respondent Characteristics

Characteristics	No.	% of Respondents	% of General Population
Sex			
Men	470	73	78
Women	149	23	22
Practice			
Group	372	57	—
Solo	235	36	—
Location			
Urban	370	57	60
Rural	278	43	40
Decade of Graduation			
Before 1970	279	38	43
1971 to 1980	259	40	38
After 1980	110	22	17
No. of patients seen daily			
0–10	20	3	—
11–20	69	11	—
21–30	263	41	—
31–40	198	31	—
41–50	58	9	—
More than 50	14	2	—

tion. A second mailing to non-respondents was made six weeks after the first.

We evaluated the maxim stressed in standard texts on conducting surveys[13]: that cover letters must have a real signature. For the first mailing, 600 cover letters were signed by hand and 600 by stamp. Because there was no difference in the initial return rate, letters accompanying the second mailing were stamped.

Results

Response Rate

A total of 731 questionnaires was returned, for a return rate of 61%. Because a large number of respondents were no longer practising family medicine for one reason or another (e.g., administration), the number of questionnaires suitable for analysis was 648.

This figure exceeds the sample required from the total population; consequently, results for the total population can be interpreted as if the response rate were greater than 100%. Results from the stratifications of practice location, decade of graduation, and sex must be interpreted with the caution necessary for a response rate of 61%.

Respondent Characteristics

Table 1 displays the sex, type of practice (group or solo), location of practice (urban or rural), decade of graduation, and the number of patients seen daily. Percentages do not add to 100 because some data were missing.

A 5-point scale on the questionnaire indicated low value or low relevance to high value or high relevance. To compress the data, frequencies of the two lowest ratings and the two highest ratings were summed to form, essentially, a three-point scale: low, neutral, high.

Learning Preferences

The most highly valued learning resources are university CME (440, or 70%), professional meetings (421, or 66%), rounds or hospital-based programs (377, or 59%), and other physicians (400, or 63%). High value was placed on drug company CME by 144 people (22%) and on pharmaceutical representatives by 20 people (3%). The most highly valued learning activities are listening to lectures (462, or 72%), informal discussion (416, or 66%), and reading (409, or 64%).

Preferred Times and Location

Preferred months are February (305, or 47%), March (292, or 45%), October (290, or 45%), and November (303, or 47%). Preferred length of course is two days (322, or 50%) on Friday and Saturday. A total of 474 people (73%) want courses held in the lower mainland of Vancouver.

Respondents indicated that the factors they consider before enrolling in a CME course are interest in the topic (616, or 97%), relevance of the topic (604, or 95%), and location (457, or 72%). Loss of practice income is not important, even to younger respondents; 58 who graduated before 1970 (34%), 83 who graduated during the 1970s (16%), and 27 who graduated during the 1980s (20%) marked income as a consideration when contemplating attendance at a CME course. Important reasons for participation are to gain new knowledge (611, or 97%), to review new developments (583, or 92%), and to enjoy mental stimulation (407, or 68%).

Topics

Topics receiving the highest frequencies for high relevance are shown in Table 2. Priorities shift a little when urban and rural respondents are considered separately: the top topics in each group are shown in Table 3. Least popular topics are shown in Table 4.

Decade of Graduation. Topics marked as highly relevant by at least 45% of graduates in at least one of the three decades and which were at least 10% different from other decades are listed below. Topics considered more important by physicians graduating before 1970 than physicians graduating during other decades were:

- cancer screening;
- prescribing drugs for the elderly;
- recognition of depression; and
- management of rheumatoid arthritis and osteoarthritis.

The topic considered more important by 1970s graduates than graduates during other decades was counselling in common behaviour problems.

Topics considered more important by 1980s graduates than graduates during other decades were:

- child sexual abuse;

Table 2
Topics Marked Most Frequently by Respondents

Topic	% Marking High	No.
Common skin disorders	77	495
Management of hypertension	73	471
Eye emergencies	67	433
Back pain	66	424
Management of diabetes	62	402
Obstetric emergencies	60	391
Management of acute myocardial infarction	61	384
Counselling family	59	382
Management of migraine	58	376
Management after myocardial infarction	58	375
Management of acute asthma	58	374
Recognition of arrhythmias	57	372

Table 3
Topics Marked Most Frequently by Urban and Rural Respondents

Topic	% Marking High	No.
Urban		
Common skin disorders	80	288
Hypertension	73	264
Back pain	71	258
Family counselling[a]	64	227
Diabetes	63	225
Eye emergencies	63	225
Migraine[a]	63	223
Stress management	61	220
Smoking counselling[a]	60	216
Sexually transmitted diseases[a]	59	212
Climacteric[a]	58	209
Post–myocardial infarction	58	207
Drugs for elderly[a]	58	206
Rural		
Eye emergencies	75	208
Common skin disorders	75	207
Hypertension	75	207
Obstetric emergencies[a]	74	203
Acute myocardial infarction[a]	69	186
Arrhythmias[a]	66	180
Acute asthma	64	177
Diabetes	64	177
Post–myocardial infarction	61	168
Screening in obstetrics[a]	60	166
Back pain	60	165
Reduction of common fractures[a]	58	161
Emergency radiology[a]	57	158

a. topic is not on the other list.

- infertility;
- eye emergencies;
- common skin disorders;
- screening in obstetrics;
- obstetrical emergencies;
- menstrual irregularities;
- treatment of pediatric poisonings;
- first and second stages of labour;
- management of common sexual problems;
- fetal monitoring;
- reduction of common fractures;
- casting techniques;
- suturing techniques;
- emergency radiology;
- injection techniques;
- mammography;
- counselling in smoking cessation;
- counselling in nutrition; and
- counselling in infant and breast-feeding.

Differences by Sex. Topics that men rated at least 10% higher than women were:

- prescribing drugs for the elderly;
- arrhythmia;
- management after myocardial infarction; and
- management of acute myocardial infarction.

Women rated the following topics at least 10% higher than men:

- dyspareunia and vaginismus;
- infertility;
- sleep disorders;
- menstrual irregularities;
- management of the climacteric;
- management of common sexual problems;
- management of sexually transmitted diseases, including AIDS;
- suturing techniques;
- injection techniques;
- mammography;
- counselling in smoking cessation;
- counselling in family and marital problems;
- counselling in patient requests for treatment or tests;
- counselling in fitness and exercise;
- counselling in stress management;
- counselling in common behaviour problems;
- counselling in infant and breast-feeding; and
- decision making in drug selection.

Table 4
Topics Marked Least Frequently by Respondents

Topic	% Marking Low	No.
Insertion of Swan-Ganz catheters	80	519
Emergency bronchoscopy	79	509
Vasectomy	67	431
Gender identity disturbances	66	429
Acupuncture	64	414
Operating a ventilator	64	413
Treadmill exercise testing	63	408
Conducting a single subject trial	62	403
Paraphilias	61	394

Discussion

Surveys of perceived needs are useful to CME planners who depend on attendance to provide cost-effective programs. This survey has fulfilled its stated purpose by informing the Division of CME of the preferences in times, location, teaching methods, and topics of a representative sample of family physicians. It has the advantage of allowing participant's "input" into the services offered.

Low response rates can bias data from a survey. The response rate greater than 100% for the whole sample in this study allows interpretations to be made with confidence. When planning CME for physicians of different age groups, for physicians of different sexes, or for physicians from rural areas, however, the frequencies may not accurately represent the opinion of those populations.

As a method, a survey of this nature has the disadvantage of quantifying desires, rather than deficiencies that may not be perceived by physicians. Further, because most respondents indicate low relevance for a topic does not mean that CME cannot be provided to a minority, which in some cases can be as many as 128 persons. Even the least popular topics were originally suggested by people who perceived them as learning needs.

While the results reported here are time-specific and are likely to change with medical, political, or social developments, they do provide direction to CME planners, and the survey has assured family physicians in British Columbia that their opinions are valuable. ■

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References

1. Laxdal OE. Needs assessment in continuing medical education: a practical guide. *J Med Educ* 1982; 57:827–34.

2. Curry L, Putnam W. Physician practice profiles for CME: four investigations into sampling methods. *Med Care* 1982; 20:993–1000.

3. Green JS, Walsh P. Needs assessment—patient care audit data and priority setting. *Proceedings of Sixteenth Annual Conference on Research in Medical Education.* 1977.

4. Putnam RW, Curry L. Impact of patient care appraisal on physician behavior in the office. *Can Med Assoc J* 1985; 132:1025–9.

5. Davis D, McConvey G, Neufeld V, Norman G, Woodward C. The use of standardized (simulated) patients as a needs determining tool in continuing medical education. In:Kerby S, compiler. *Proceedings of the Twenty-Fourth Annual Conference on Research in Medical Education 1985.* Washington, DC: Association of American Medical Colleges, 1985:201–6.

6. Parboosingh J. Intrauterine growth retardation—who did not suspect? Read before the Canadian Association of Medical Colleges, Calgary, October 1987.

7. Kantrowitz MP, DiVasto PV, Starks AM, Counsellor A, Orgel L. Assessing continuing medical education needs in New Mexico. *West J Med* 1983; 138:114–7.

8. Lessner JR, Driscoll CE. Family practice and practitioner assessments of CME needs. *Conn Med* 1982; 46:397–9.

9. Barham P, Benseman J. Determining continuing medical education curricula for general practitioners—a survey of self-perceived needs. *N Z Med J* 1983; 96:395–7.

10. Kristofco RE, Hall SA, Chick E. CME preferences, practices of West Virginia physicians. *W V Med J* 1987; 83:223–5.

11. Curry L, Putnam RW. Continuing medical education in Maritime Canada: the methods physicians use, would prefer and find most effective. *Can Med Assoc J* 1981; 124:563–6.

12. Scheaffer RL, Mendenhall W, Ott L. *Elementary survey sampling.* Boston: Duxbury Press, 1986:59.

13. Dillman DA. *Mail and telephone surveys: the total design method.* New York: John Wiley & Sons, 1978:173.