

CONTINUING MEDICAL EDUCATION
NEEDS ASSESSMENT OF
OREGON PHYSICIANS

by

Elizabeth A. Bower, M.D.

A THESIS

Presented to the Department of Public Health and Preventative Medicine

and the Oregon Health & Science University School of Medicine

in partial fulfillment of

the requirements for the degree of

Master of Public Health


June 2006

School of Medicine
Oregon Health & Science University

CERTIFICATE OF APPROVAL

This is to certify that the Master's thesis of
Elizabeth A. Bower, M.D.
has been approved


Dongseok Choi, Ph.D.


Thomas M. Becker, M.D., Ph.D.



Donald E. Girard, M.D.

TABLE OF CONTENTS

	<u>Page</u>
List of Tables	ii
List of Figures	iv
Acknowledgments	v
Abstract	vi
Introduction	1
Methods	3
Results	11
Discussion	29
Conclusion	32
References	34
Appendix A	36
Appendix B	40
Appendix C	41

TABLES

		<u>Page</u>
Table 1	Geographic cluster characteristics, CME Needs Assessment Study, 2005	5
Table 2	Survey return proportion by medical specialty, CME Needs Assessment Study, 2005	11
Table 3	Survey return proportion by county and county cluster, CME Needs Assessment Study, 2005	12
Table 4	Demographic characteristics of sample compared to OMA database, CME Needs Assessment Study, 2005	13
Table 5	Population of practice location, CME Needs Assessment Study, 2005	13
Table 6	Practice specialty of sample compared to OMA database, CME Needs Assessment Study, 2005	14
Table 7	Reasons to participate in CME, CME Needs Assessment Study, 2005	15
Table 8	Board certification status of respondents, CME Needs Assessment Study, 2005	15
Table 9	Self-reported awareness of MOC requirements analyzed by time interval until current certification expires, CME Needs Assessment Study, 2005	17
Table 10	Resources provided to recertifying physicians by their practice groups, CME Needs Assessment Study, 2005	19

		<u>Page</u>
Table 11	CME programs identified as helpful for MOC, CME Needs Assessment Study, 2005	23
Table 12	Summary of selected survey answers of physicians classified as “clinical” compared to physicians classified as “academic”, CME Needs Assessment Study, 2005	24
Table 13	Summary of selected survey answers of physicians classified as “clinical” compared to physicians classified as “academic”, CME Needs Assessment Study, 2005	25
Table 14	Summary of selected survey answers of physicians living in non-urban areas compared to physicians living in urban areas, CME Needs Assessment Study, 2005	26
Table 15	Significant results of regression analysis, CME Needs Assessment Study, 2005	28

FIGURES

		<u>Page</u>
Figure 1	Likert scale ratings for factors in decision to recertify, CME Needs Assessment Study, 2005	16
Figure 2	Likert scale ratings for factors in decision not to recertify, CME Needs Assessment Study, 2005	18
Figure 3	Likert scale ratings for preferred sources of CME, CME Needs Assessment Study, 2005	20
Figure 4	Likert scale ratings for preferred sources of CME, CME Needs Assessment Study, 2005	20
Figure 5	Likert scale ratings for preferred CME format, CME Needs Assessment Study, 2005	21

ACKNOWLEDGMENTS

I would like to thank the members of my thesis committee and my advisor for their assistance and guidance throughout this project. Their support includes, but is not limited to, Tom Becker's encouragement to complete my degree after an extended leave of absence, Don Girard's mentorship in continuing medical education and his support for the CME survey, and Dongseok Choi's patient counsel on statistical matters as well as the time and effort he has spent helping me keep organized and on track.

I would also like to acknowledge and thank Pat Iverson, Lonnie Prather, Dao Soukhaseum, and Leslie Doering for their assistance with survey preparation, follow-up letters and phone calls, and record keeping. Their assistance was invaluable. The Oregon Medical Association allowed me to use their database to obtain my physician sample. I also appreciate the time that 371 Oregon physicians took out of their busy days to fill out my survey.

Finally I would like to thank my husband, Doug, and my daughter, Mara, for their patience, support, and understanding, not to mention cooking meals, understanding why I couldn't go on Girl Scout trips, and generally putting up with the extra work I was doing.

ABSTRACT

Physicians who have completed training and are deemed qualified to practice are expected to maintain competency and consequently spend a considerable amount of time engaged in continuing medical education (CME). Studies have shown that change in physician behavior is more likely to occur when a meaningful assessment of physicians' learning needs serves as the basis for determining the content of CME. In addition national healthcare concerns have led to the emergence of maintenance of certification (MOC) as a means to ensure the competence of practicing physicians. The objectives of this study were to assess Oregon physicians' motives for participating in CME and their preferences for CME program format and to study the influence of MOC on their attitudes and preferences.

We mailed surveys to a random sample of licensed, practicing physicians in the state of Oregon. The survey contained questions on preferred source and format of CME, motivation for participating in CME, board certification status, awareness of requirements for MOC, factors influencing the decision to participate in MOC, and resources available and desired to assist with MOC. Three hundred seventy six surveys were returned for a response proportion of 50%.

Ninety-one percent of survey respondents were board certified and 95% of the physicians who had time-limited certificates planned to recertify in their specialty. The factors most often rated extremely important in physicians' decisions to recertify were "demonstrate expertise in my specialty" (50%), "demonstrate that my medical knowledge is up to date" (52%), and "demonstrate my competency to provide patient care in my specialty" (51%). Keeping up on the latest medical information and research was the

most important reason for participating in CME for 73% of respondents. Generally physicians preferred traditional forms of CME. Medical specialty association meetings were the most preferred source of CME activity (72%), although other traditional didactic activities such as update or review courses, journals, and hospital sponsored grand rounds were also popular. Traditional knowledge-based CME programming was selected as more helpful for MOC than any other option. Regression analysis revealed the importance of type of physician practice as a predictor for CME format preference even after controlling for location of practice, participation in a MOC program, gender, and age.

These findings are important for medical educators and CME program planners. One strategy for future program development will be to integrate studied and effective educational methods into traditional CME programs. Further research should evaluate the effectiveness of this hybrid approach. In addition, as physicians respond to the new educational and regulatory environment in which they practice and learn, it will be important to monitor changes in their motivations and preferences for CME activities.

Introduction:

Physicians who have completed training and are deemed qualified to practice are expected to maintain competency and consequently spend a considerable amount of time engaged in continuing medical education^{1,2} Continuing medical education (CME) is defined by the Accreditation Council of Continuing Medical Education as the educational activities that maintain, develop, or increase the knowledge, skills, and professional performance of a physician.³ The tacit assumption is that increased knowledge leads to improved performance and enhanced patient care.

In the past two decades several factors have led to a reassessment of the traditional educational paradigm of passive knowledge acquisition. Several systematic reviews of the effect of CME on physician performance and healthcare outcomes have questioned the effectiveness of customary didactic CME activities.⁴⁻⁷ The Institute of Medicine has raised concerns about the quality of care that patients receive in our current healthcare system which may in part be due to inadequate physician training.^{8,9} More recently, a systematic review found that physicians who have been in practice for more years possess less factual knowledge, are less likely to adhere to appropriate standards of care, and may also have poorer patient outcomes.¹⁰ Perhaps knowledge and skills learned during training are not effectively and regularly updated.

Subsequent studies have identified factors that increase the effectiveness of CME in changing physician behavior and patient outcomes. These factors include: learning linked to clinical practice, interactive educational meetings, outreach events, and strategies that involve multiple educational interventions.^{6,11} Change in physician behavior is also more likely to occur when a meaningful assessment of physicians'

learning needs serves as the basis for determining the content of CME programs.^{4, 12, 13}

In addition to the re-evaluation of CME, another response to national healthcare concerns has been the emergence of maintenance of certification as a means to ensure the competence of practicing physicians.¹⁴ Tamblyn et. al. and Chen et. al. have shown that board certified physicians provide higher quality healthcare.^{15, 16} In 1998 the American Board of Medical Specialties, the umbrella organization for the 24 accredited medical specialty boards in the United States, mandated that all physicians with time-limited certificates participate in a Maintenance of Certification program (MOC) to retain board certification.¹⁷ All MOC programs require physicians to demonstrate the following four components: professional standing, participation in a program of self-assessment and career-long learning, cognitive expertise, and evaluation of performance in practice, with the goal of documenting that physicians maintain the necessary competencies to provide quality patient care in the specialties in which they have been certified.

Little is known about physician perceptions of the barriers to, or benefits of, maintaining board certification, and little data are available on rates of physician participation in their specialty board MOC programs. I decided to study the educational needs of physicians in Oregon and whether MOC has had an impact on their perceived needs. Since the format of an educational activity is so important to the effectiveness of the intervention, I chose to examine what formats for CME would be desirable to practicing physicians rather than simply obtaining information on topics of interest.

Objectives:

1. To assess Oregon physicians' preferences for CME program format and to determine whether there are important subgroups for which educational needs are different.
2. To study Oregon physicians' attitudes about maintenance of board certification, to determine what proportion of Oregon physicians with time-limited certificates plan to complete the MOC process, and to determine what factors influence Oregon physicians' decisions to recertify in their specialty.

Methods:

Overview:

We mailed surveys to a stratified random sample of licensed, practicing physicians in the state of Oregon. The sample was stratified by geographic location. Human subjects approval was received from the Oregon Health & Science Institutional Review Board.

Survey Design:

I obtained a random, geographically stratified sample of physicians licensed to practice medicine in the state of Oregon from the Oregon Medical Association (OMA). The OMA database includes demographic data on all licensed physicians in Oregon. The data are obtained from OMA membership rosters and the National Board of Medical Examiners database and are updated weekly. At the time the study sample was obtained,

the database included information on 9,885 licensed, actively practicing physicians in the state of Oregon.

I based my sample size calculation on an N of 10,000 physicians. Assuming that interesting parameters were proportions of responses, 370 completed surveys would be required for +/- 5% sampling error at a 95% confidence level.¹⁸ Based on a predicted survey response proportion of 50%, I selected a sample size of 755 physicians. To prevent over-sampling from the urban areas in Oregon, I stratified the sample by geographic location. The number of licensed physicians who are actively practicing per county was obtained from the OMA database and less populated counties were clustered together for the purpose of sampling. I obtained simple random samples of licensed, actively practicing physicians in each county or cluster of counties from the OMA database proportional to the number of physicians per county or cluster (Table 1, next page).

Table 1. Geographic cluster characteristics, CME Needs Assessment Study, 2005.

Cluster	County	Physicians* per County	Physicians* per Cluster	Physicians* Sampled per Cluster
1	Curry	37		
1	Douglas	204		
1	Southwestern (Coos County)	156	397	31
2	Jackson	528		
2	Josephine	136	664	51
3	Lane	815	815	62
4	Benton	226		
4	Lincoln	82		
4	Linn	152	460	35
5	Marion-Polk	665	665	51
6	Clackamas	743		
6	Yamhill	139	882	67
7	Clatsop	67		
7	Columbia	20		
7	Tillamook	37	124	10
8	Mid-Columbia (includes Sherman, Gilliam, Wasco, and Hood River)	128	128	10
9	Central OR (includes Jefferson, Crook, Deschutes, and Wheeler)	392	392	30
10	Baker	23		
10	Grant	6		
10	Umatilla-Morrow	112		
10	Union	53		
10	Wallowa	7	201	16
11	Hi-Desert (Harney County)	6		
11	Klamath	139		
11	Lake	10		
11	Malheur	67	222	17
12	Multnomah	3831	3831	291
13	Washington	1104	1104	84
	Total	9885	9885	755

*Refers to licensed, actively practicing physicians

Question development:

I reviewed prior surveys designed by the OHSU Division of CME for content. Questions on preferred source and format of CME and demographic information were retained. I added questions about the respondent's reasons for participating in CME, board certification status, awareness of requirements for maintenance of certification, plans to recertify or not, factors influencing decision to recertify or not, and resources available and desired for MOC were added.

Survey format:

The first section of the survey (entire survey is included in Appendix A) contained questions about general preferences for CME and reasons for participating in CME. Preferences for source and format of CME were rated on a five point Likert scale with 1 representing “least preferred” or “would not select” and 5 representing “most preferred” or “most likely to select.” Respondents were asked to identify their top three reasons for participating in CME by marking their top three choices with a “1”, “2”, or “3”.

The second section of the survey focused on questions about board certification and MOC. Respondents were asked if they were planning to recertify in their specialty or subspecialty. Those who responded “yes” were directed to complete questions on awareness of requirements for MOC, importance of factors in their decision to recertify, resources provided by their practices for MOC, and which CME programs would be helpful to them in the process of MOC. Those who responded “no” were directed to complete questions on importance of factors in their decisions not to recertify and how their decisions would be affected if board certification were required for licensure in the state of Oregon. Factors influencing decision to recertify or not to recertify were rated on a five point Likert scale with 1 representing “not at all important” and 5 representing “extremely important.” The questions on resources provided by the respondent’s practice to help with re-certification and which programs would be helpful as respondents participated in the re-certification process each provided a list of options and respondents were asked to check all that applied. The remainder of questions were in a “yes” or “no” format.

The third and final section of the survey asked for personal and practice information from all respondents on the following topics: full- or part-time work status, major practice specialty and subspecialty, population of practice location, percentage of time spent in practice, administration, teaching, and/or research, age, years in practice, and gender.

Piloting:

I piloted the 21 question survey with a group of 30 OHSU physicians to evaluate clarity of questions, language, and format and estimated time required to complete the survey. I made changes to the questionnaire to improve clarity based on feedback received during this process

Subject recruitment and follow-up:

We mailed a cover letter (Appendix B) and survey (Appendix A) to the practice address of each physician in the sample. All surveys were confidential and were numbered to allow tracking and follow up. The cover letter informed respondents of the methodology for maintaining confidentiality and assured them that no individual names would be associated with the results. A postage-paid return envelope was enclosed with each survey and a toll-free phone number provided for recipients to call if they had questions. Entry into a random drawing for five gift certificates from the OHSU bookstore was offered as an incentive to complete the survey.

One week after the initial mailing, we sent a reminder postcard to all recipients asking them to complete the survey if they had not already done so. Three weeks after the

initial mailing, we sent a second letter (Appendix C) and survey to those recipients who had not returned the initial survey. The second letter also provided a web address for those physicians who preferred to complete the survey electronically. Ten days after the second survey mailing, we made follow-up phone calls to those physicians who had not returned either survey to ask them to participate.

Data management and analysis:

Three hundred seventy six surveys were returned over 16 weeks for a response proportion of 50%. Five physicians responded to the survey electronically by using the Survey Monkey website <www.surveymonkey.com/s.asp?u=380521252009>, 13 returned their surveys by fax, and 358 returned their surveys by mail. Five of the mailed surveys were excluded from analysis because no questions were answered. We entered the faxed and mailed survey results into Survey Monkey to tabulate results. Data were imported into SPSS version 14.0.¹⁹ Missing data were not included in the data analysis.

To evaluate the representativeness of my sample, I compared mean age and frequency of gender of our respondents to these values for the entire OMA database. I also compared proportion of major specialties in my sample to the entire OMA database and tested for significant differences with the χ^2 test statistic. I calculated survey return rates by major specialty and geographic cluster and tested for significant differences with the χ^2 test statistic.

I calculated frequencies and descriptive characteristics (when applicable) of demographic variables, including age, gender, years in practice, full- versus part-time work status, major practice specialty, and population of practice location. I calculated

frequencies of responses for each question as well. I coded the question regarding the top three reasons for participating in CME activities from 0 to 3 with 3 indicating that the activity was the respondent's most important reason for doing CME and 0 indicating that the reason was not chosen. I calculated mean scores for each reason and tested for significant difference between means with the one-sample t-test.

I identified four separate respondent clusters based on the hierarchical cluster analysis of percentage of time spent in practice, administration, teaching, and research. Group 1 consisted of physicians who spent most of their time in clinical practice (median 100%). Group 2 consisted of physicians who spent most of their time in clinical practice (median 85%) with the remainder of their time in administration (median 10%). Group 3 consisted of physicians with a variety of roles including practice (median 50%), administration (median 20%), teaching (median 10%), and research (median 10%). Group 4 consisted of physicians who spent a significant amount of time in research (median 53%). I created a grouping variable and assigned each respondent to one of the groups described above.

I used cross tabulation to explore relationships between question response and this categorical grouping variable. During my initial analysis, there were few significant differences between groups 1 & 2 which were primarily clinically oriented physicians and groups 3 & 4 which were physicians with a broader range of roles including larger proportions of time spent teaching and doing research. I collapsed the four groups into 2 groups, a "clinical" and an "academic" group for further analysis.

I did additional cross tabulation to explore relationships between question response and other categorical variables. I identified the following additional variables of

interest: location of practice (urban vs. non-urban), participation in MOC, and gender. I did regression analysis with the practice variable (clinical vs. academic), location of practice, participation in MOC and gender as fixed factors and age as a covariate and questions response as the dependent variable. I included main effects for all independent variables in the model as well as the interaction between practice type and location of practice.

Results:

Survey Return Proportion:

The proportion of surveys returned did not vary significantly by specialty or by geographic location (Table 2 and 3).

Table 2. Survey return proportion by medical specialty, CME Needs Assessment Study, 2005.

Specialty	Sample No.	Returned No. (%)*
Anesthesiology	58	21 (36)
Dermatology	10	4 (40)
Emergency Med	19	10 (53)
Family/General Practice	107	57 (53)
Internal Medicine, including sub-specialties	184	85(46)
Neurology/Neurosurgery	27	17 (63)
Obstetrics/Gynecology	55	29 (53)
Ophthalmology	28	10 (36)
Otolaryngology	15	6 (40)
Pathology	15	8 (53)
Pediatrics, including sub-specialties	60	41 (68)
Physical Med & Rehabilitation	7	2 (29)
Psychiatry	32	20 (63)
Radiology	39	16 (41)
Surgery, including sub-specialties	96	46 (48)
Other/ Did not identify specialty	3	4
Total	755	376 (50)

*p-value = 0.5

Table 3. Survey return proportion by county and county cluster, CME Needs Assessment Study, 2005.

Cluster	Sample No.	Returned No. (%) *
Cluster 1: Curry, Douglas and Southwestern OR counties	31	15 (48)
Cluster 2: Jackson and Josephine counties	51	25 (47)
Cluster 3: Lane county	62	24 (38)
Cluster 4: Benton, Lincoln and Linn counties	35	19 (54)
Cluster 5: Marion-Polk counties	51	26 (51)
Cluster 6: Clackamas and Yamhill counties	67	32 (48)
Cluster 7: Clatsop, Columbia and Tillamook counties	10	5 (50)
Cluster 8: Mid-Columbia (Hood River, The Dalles area)	10	6 (60)
Cluster 9: Central Oregon (Bend, Redmond, Madras area)	30	12 (40)
Cluster 10: Baker, Grant, Umatilla-Morrow, Union and Wallowa counties	16	12 (75)
Cluster 11: Hi-Desert, Klamath, Lake and Malheur counties	17	9 (53)
Cluster 12: Multnomah county	291	154 (53)
Cluster 13: Washington county	84	37 (44)
Total	755	376 (50)

*p-value = 0.9

Study Population:

Seventy percent of the physicians who responded to our survey were male.

Respondents ranged in age from 29 to 80 with a mean age of 49 years. The number of years of practice ranged from < 1 year to a maximum of 51 years. The mean years in practice was 17. Seventy-eight percent practice medicine full-time (Table 4). Fifty-six percent of respondents have attended a CME course sponsored or jointly sponsored by OHSU in the past three years. Sixty-three percent practice in an urban area (defined as population > 75,000) (Table 5) and 67 percent practice in one of the seven major specialties (including subspecialties in these areas) (Table 6).

Table 4. Demographic characteristics of sample compared to OMA database, CME Needs Assessment Study, 2005.

Characteristic	Sample (N=371)	OMA database (N*= 9985)
Gender (% male)	70%	69%
Age (mean, in years)	49	47
Years in practice (mean, in years)	17	NA**
Practice medicine full-time	78%	NA**

* N with available demographic information.

**Data not available from OMA database.

Table 5. Population of practice location, CME Needs Assessment Study, 2005.

Location of practice	Frequency	Percent
Rural, population < 2000	7	1.9
Population 2000 to 10,000	25	6.6
Population 10,000 to 75,000	101	26.9
Urban, population > 75,000	228	60.6
Unknown	15	4.0
Total	376	100.0

The proportion of physicians in the seven major specialties in my sample differed from that in the OMA database (Table 6). I stratified the sample by geographic location to prevent over-sampling from the urban areas in Oregon, and the composition of the physician workforce in urban compared to non-urban areas would be expected to differ. The proportion of physicians in internal medicine and surgery are smaller in my sample because sub-specialties were grouped with specialty (e.g. cardiology with internal medicine and plastic surgery with surgery) and there are fewer sub-specialists practicing in less urban areas.

Table 6. Practice specialty of sample compared to OMA database, CME Needs

Assessment Study, 2005.

Major practice specialty	Sample (N=371) No. (%)	OMA database (N*= 9985) No. (%)**
Emergency Medicine	16 (4.3)	520 (5.3)
Family/general practice	46 (12.4)	1581 (16.0)
Internal medicine	65 (17.5)	2357 (23.8)
OB/GYN	28 (7.5)	497 (5.0)
Pediatrics	37 (10.0)	695 (7.0)
Psychiatry	20 (5.4)	534 (5.4)
Surgery	32 (8.6)	1154 (11.7)
Other/not specified	127 (34)	2647 (26.5)
Total	371 (100)	9985 (100.0)

* N with available demographic information.

** p-value = 0.001, χ^2 test for significance

Board certification:

91% of survey respondents were board certified and approximately 51% had time-limited specialty certification (Table 7). 95% of the physicians who had time-limited certificates planned to recertify in their specialty. Of the 40% who had life-time certification, 13% planned to voluntarily recertify. 73% of the physicians who planned to recertify answered “yes” when asked if they were aware of the new requirements put in place as part of the maintenance of certification program effective in 2006, but 27% of this group were not aware despite plans to proceed with MOC. There was no significant difference in self-reported awareness of requirements for MOC when analyzed by time interval until current certification expires (Table 8).

Table 7. Board certification status of respondents, CME Needs Assessment Study, 2005.

Certification status	Percent of sample
Not board certified	9%
Lifetime certification	35%
Lifetime certification and plan to recertify voluntarily	5%
Time-limited certification	51%

Table 8. Self-reported awareness of MOC requirements analyzed by time interval until current certification expires, CME Needs Assessment Study, 2005.

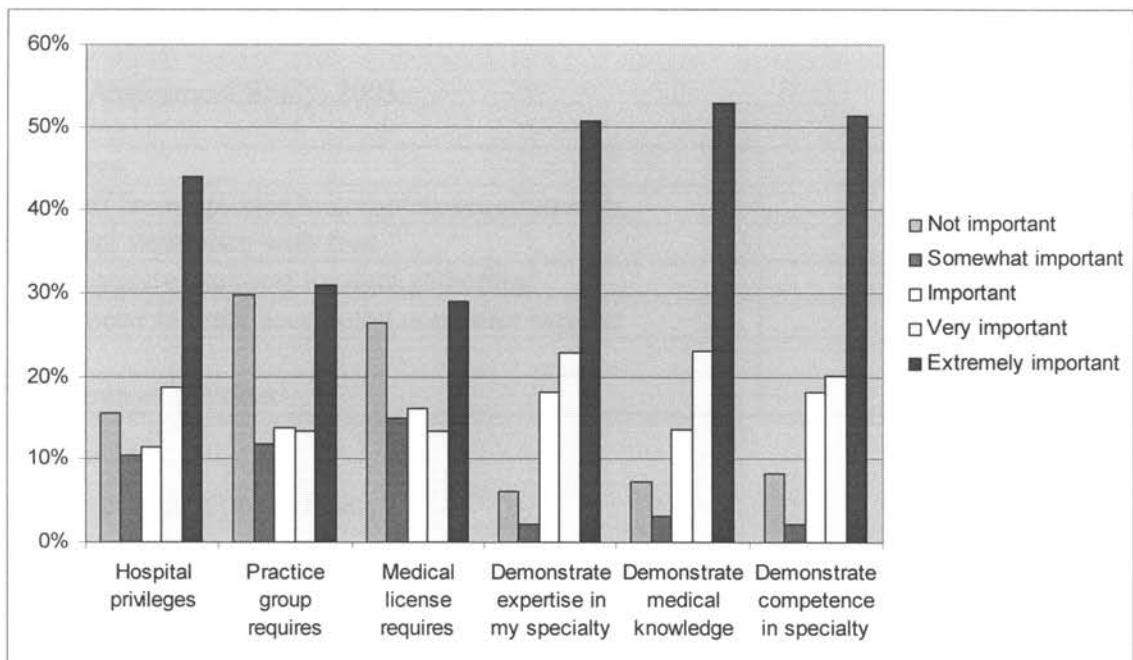
Within how many years are you due to recertify?	Aware of requirements No. (%)*	Not aware of requirements No. (%)	Total No. (% of recertifying physicians)
1 to 2 years	39 (71)	16 (29)	55 (27)
3 to 5 years	32 (64)	18 (36)	50 (24)
5 to 7 years	36 (75)	12 (25)	48 (23)
7 to 10 years	32 (84)	6 (16)	38 (19)
Voluntarily recertifying	8 (73)	3 (27)	11 (7)
Total	147 (73)	55 (27)	202(100)

*p-value = 0.323, Pearson χ^2

Factors in decision to re-certify:

The factors most often rated extremely important in physicians' decisions to recertify were "demonstrate expertise in my specialty" (50%), "demonstrate that my medical knowledge is up to date" (52%), and "demonstrate my competency to provide patient care in my specialty" (51%). Forty-three percent rated "required for hospital privileges" as extremely important and 31% rated "required for practice group" as extremely important. Interestingly, 28% rated "required for medical licensure" as an extremely important factor in their decision to recertify although board certification is not currently required for licensure in the state of Oregon (Figure 1).

Figure 1. Likert scale ratings for factors in decision to recertify, CME Needs Assessment Study, 2005.



Resources for MOC:

Physicians' practice groups provided them with few resources to help with the MOC process (Table 9). The most commonly available resource was high-speed internet access and computer support which was available to 57% of recertifying physicians. 36% reported that they received financial assistance with fees for the secure exam and other program components and 32% reported being provided with time off from practice to complete the MOC requirements. Only 15% are provided with administrative support for data gathering, and 29% reported that their practice provided them with no resources for the MOC process. Three percent reported the availability of other resources which included library access (n=1), grand rounds (n=2), and coverage for patient care during absence (n=1).

Table 9. Resources provided to recertifying physicians by their practice groups, CME Needs Assessment Study, 2005.

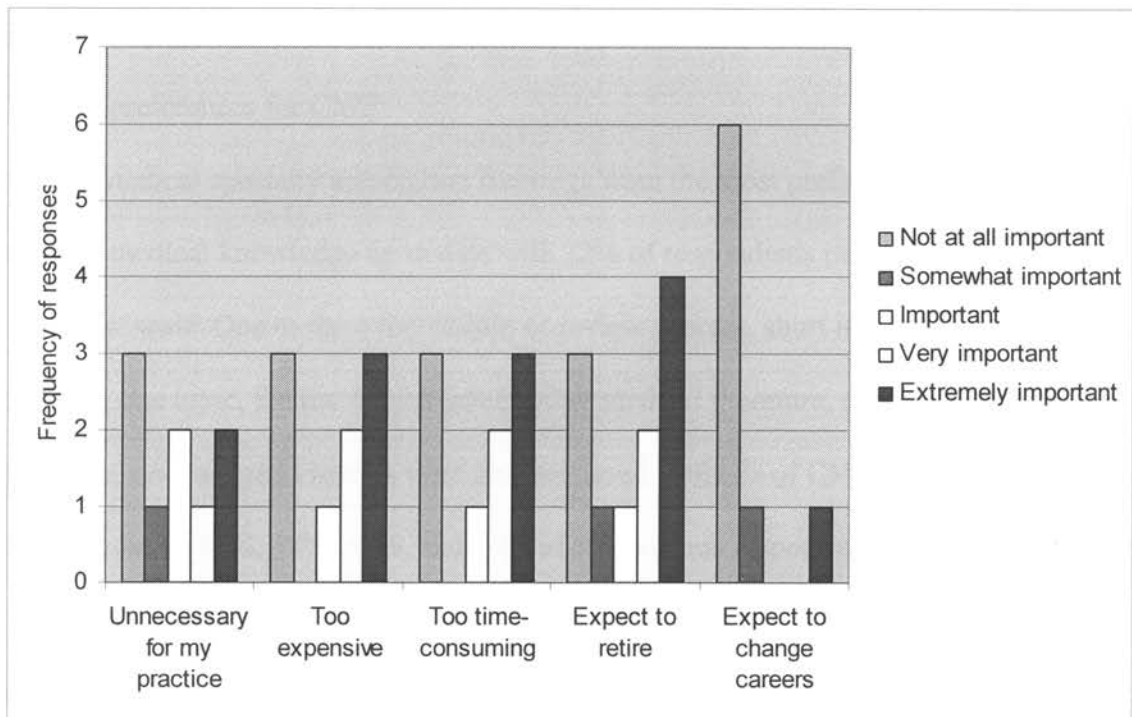
Resource	Availability
Time off from practice to complete requirements	32%
Financial assistance with fees	36%
Administrative support for data gathering	15%
High-speed internet access and computer support	57%
Other	3%
No resources provided	29%

Non-recertifying physicians:

The number of physicians with time-limited certificates who do not plan to recertify is small (N = 11). When asked if they would change their plans and go ahead with MOC if it were required for licensure in the state of Oregon, five of these physicians said they would recertify. The factor most frequently cited as extremely important in the

decision not to recertify was “expect to retire before I need to recertify” which was cited by 4 respondents. The factor most frequently cited as not at all important was “expect to change careers before I need to recertify” which was cited by 6 respondents (Figure 2).

Figure 2. Likert scale ratings for factors in decision not to recertify, CME Needs Assessment Study, 2005.



Reasons to participate in CME:

Keeping up on the latest medical information and research was the most important reason for participating in CME for 73% of respondents. The mean score for this reason (2.49) was significantly higher than for any other motivating factor including passing a certifying exam, obtaining credits, networking, discussing cases with experts, or combining travel with learning (Table 10).

Table 10. Mean scores for reasons to participate in CME, CME Needs Assessment Study, 2005.

Reason to participate in CME	Mean (+/- S.D.)	95% C.I.
Keep up on latest medical information and research	2.49 (+/- .968)	2.39-2.58
Pass a certification or MOC exam	0.50 (+/- .871)	0.41-0.59
Obtain credits required for hospital privileges or state licensure	0.95 (+/- 1.037)	0.85-1.06
Meet and/or network with colleagues	0.55 (+/- .847)	0.47-0.64
Discuss cases/questions with experts in the field	0.57 (+/- .852)	0.48-0.66
Combine recreation/travel with learning	0.47 (+/- .758)	0.39-0.54

General preferences for CME:

Medical specialty association meetings were the most preferred method for keeping medical knowledge up to date with 72% of respondents rating them a 4 or 5 on the Likert scale. One to three day update or review courses, short in-depth courses covering one topic, the use of journals or other medical literature, and hospital sponsored programs such as grand rounds were also preferred methods of CME, rated 4 or 5 on the Likert scale by 62%, 58%, 57%, and 46% of respondents respectively (Figure 3).

Much less desirable sources of CME included audio or video tapes, teleconferences, individually arranged retraining programs, computer-based educational programs, and pharmaceutical company sponsored events with 35%, 48%, 40%, 25%, and 38% of respondents respectively rating these methods of updating medical knowledge their least preferred source of CME (Figure 4).

Figure 3. Likert scale ratings for preferred sources of CME, CME Needs Assessment Study, 2005.

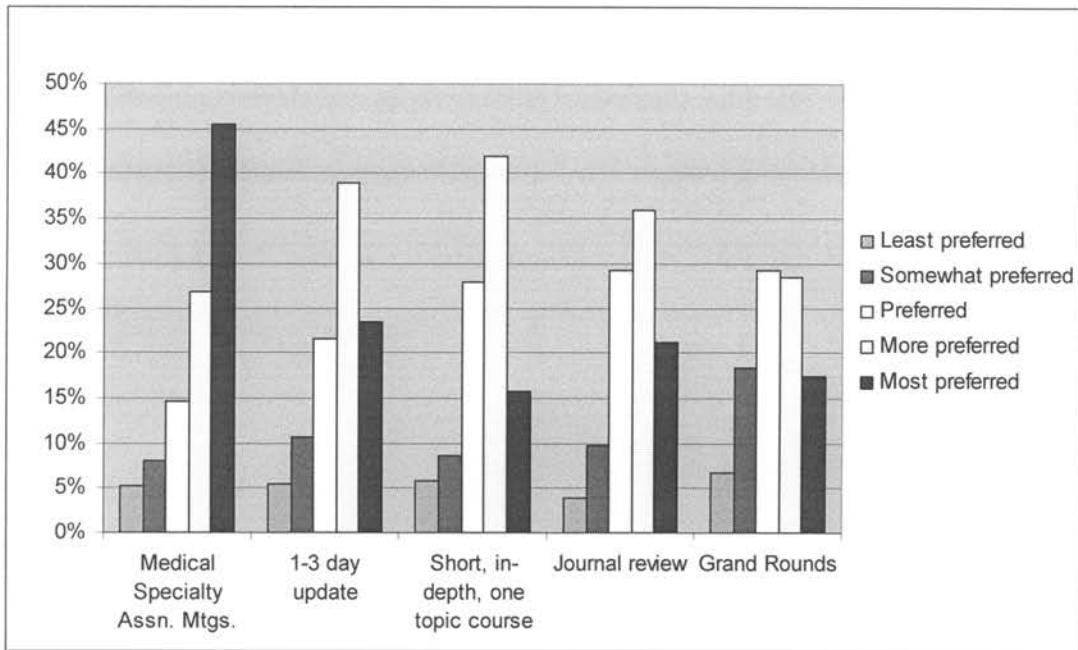
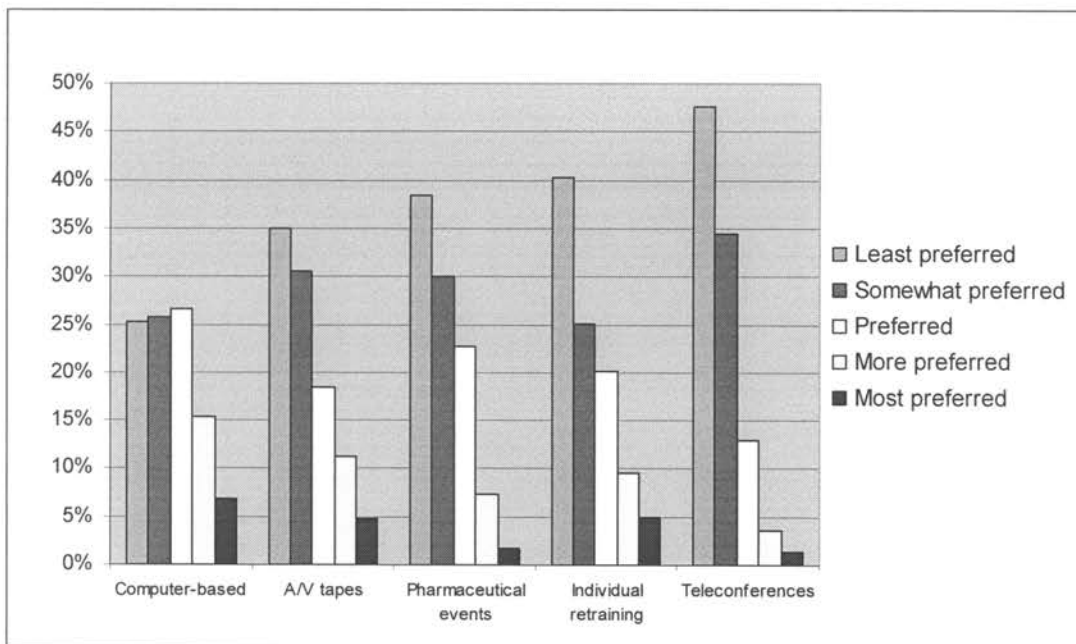
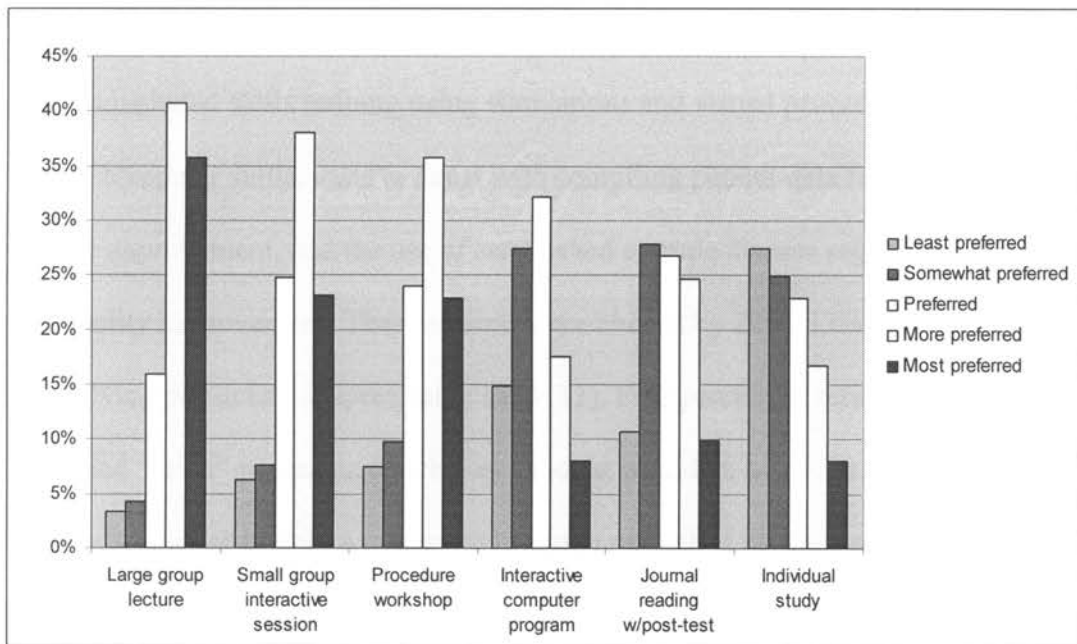


Figure 4. Likert scale ratings for preferred sources of CME, CME Needs Assessment Study, 2005.



Physicians were also asked to rate several possible formats for CME on a Likert scale of 1 (would not select) to 5 (most likely to select). Lecture in a large group setting was rated a 4 or 5 on the Likert scale by 77% of respondents. Small group interactive sessions and demonstrations of procedural techniques were also desirable with 61% and 59% of respondents rating these formats a 4 or 5 on the Likert scale. In contrast, journals with post-test were ranked this highly by only 35%, interactive computer programs and individually arranged study or mini-sabbaticals by only 25% (Figure 5).

Figure 5. Likert scale ratings for preferred CME format, CME Needs Assessment Study, 2005.



CME programs for MOC:

Physicians who intend to recertify in their medical specialty were asked what type of CME program would be helpful to them as they participate in the maintenance of certification program. Most cited a traditional knowledge-based CME program or exam preparation course for the secure exam as a desirable option (72% and 60% respectively). Forty-one percent selected CME programs on practice-based learning and improvement (i.e. quality improvement based on patient data), 39% chose a CME “how-to” program on efficiently completing the MOC process, 38% selected a searchable database of CME courses and content, and 35% chose a searchable database of standardized learning content/materials as programs they believed would be helpful to them. Only 4% and 7% selected courses on professionalism or communication skills as helpful options. Other options included skills training using simulations and virtual procedures, programs to update computer skills, tools to assist with compiling patient data for practice-based quality improvement, and the use of established chronic disease registries for education and quality improvement. These options were chosen by 22%, 13%, 29%, and 17% of recertifying physicians respectively (Table 11). Five percent of recertifying physicians identified “other” programs which they thought would be helpful to them, including the Medical Knowledge Self-Assessment Program published by the American College of Physicians (n=3) and improved information from the specialty boards on MOC requirements (n=3).

Table 11. CME programs identified as helpful for MOC, CME Needs Assessment Study, 2005.

Program	Identified as helpful by recertifiers
Traditional knowledge-based CME course	72%
Traditional exam prep course	60%
Program on practice-based learning and improvement (PIP)	41%
Program on "how-to" efficiently complete MOC process	39%
Searchable database of CME courses	38%
Searchable database of standardized learning content	35%
Programs or software to assist with compiling data for PIP	29%
Skills training using simulation and virtual procedures	22%
Program using chronic disease registries for education and PIP	17%
Program on updating computer skills	13%
Program on communication skills	7%
Program on professionalism	4%
Other	5%

Sub-group analysis:

Cross tabulation identified significant relationships between type of physician practice and preferences for type of CME (Table 12). Clinicians were significantly more likely to prefer 1 to 3 day update or review courses than academic physicians who were more likely to prefer meetings of their specialty societies or medical associations. Academic physicians were also more likely to prefer grand rounds or other programs sponsored by their hospital than clinical physicians. Although pharmaceutical sponsored events, audio/video tapes, and individually arranged retraining programs were only “somewhat preferred” by clinicians, they were rated significantly higher by clinicians than by academic physicians. Clinical physicians were also more likely to select journal reading with post-test as the format for CME activity than were academic physicians.

Twenty-six percent of recertifying clinicians selected skills training with simulation or virtual reality as being helpful for MOC as compared to only 12% of recertifying academic physicians (Table 13).

Table 12. Summary of selected survey answers of physicians classified as “clinical” compared to physicians classified as “academic”, CME Needs Assessment Study, 2005.

Question*	Clinical Mean	Clinical +/- S.D.	Academic Mean	Academic +/- S.D.	p-value**
Medical Association Meetings	3.9	1.240	4.4	0.843	0.000
Short, in-depth, one-topic review	3.5	1.012	3.7	1.137	0.264
1-3 day update or review	3.8	1.091	3.2	1.100	0.000
Journal reading/literature search	3.6	1.024	3.8	1.113	0.097
Pharmaceutical co. events	2.1	1.020	1.7	0.993	0.002
Audio/video tapes	2.3	1.189	1.9	1.062	0.007
Computer-based CME	2.6	1.246	2.4	1.108	0.245
Grand rounds at your hospital	3.3	1.165	3.5	1.095	0.045
Teleconferences	1.7	0.907	1.9	0.903	0.105
Individual retraining	2.3	1.233	1.8	0.950	0.000
Large group lecture	4.0	1.028	4.0	0.868	0.719
Small group interactive session	3.6	1.107	3.7	1.108	0.456
Demonstrations of procedures	3.7	1.143	3.2	1.166	0.001
Interactive computer programs	2.8	1.143	2.8	1.157	0.880
Journal reading with post-test	3.0	1.157	2.7	1.143	0.018
Individually arranged study	2.5	1.287	2.5	1.235	0.938
Keep up on latest medical information	2.5	0.993	2.5	0.880	0.544
Pass a certification or MOC exam	0.5	0.882	0.5	0.840	0.956
Hospital privileges or state licensure	1.0	1.036	0.9	1.047	0.544
Meet and/or network with colleagues	0.4	0.738	1.0	1.005	0.000
Discuss cases/questions with experts	0.6	0.883	0.45	0.733	0.127
Combine recreation/travel with learning	0.5	0.767	0.3	0.714	0.050

* See Appendix A for full text of questions

** Independent sample t-test

Table 13. Summary of selected survey answers of physicians classified as “clinical” compared to physicians classified as “academic”, CME Needs Assessment Study, 2005.

Question*	Clinical Freq.(%)	Academic Freq.(%)	p-value**
Time off from practice	35	25	0.195
Financial assistance	37	31	0.406
Administrative support for data gathering	14	16	0.714
High-speed internet access and computer	53	69	0.041
Other resources	32	20	0.129
No resources	5	6	0.850
Traditional knowledge-based CME	76	61	0.051
Traditional exam prep course	61	59	0.840
Program on professionalism	4	4	0.993
Program on communication skills	7	6	0.877
Skills training with simulation	26	12	0.050
Program on updating computer skills	14	8	0.272
“How-to” efficiently complete MOC	42	29	0.097
Program on practice-based learning and improvement (PIP)	44	31	0.100
Assistance with compiling patient data for PIP	30	29	0.877
Assistance with chronic disease registries for PIP	18	14	0.525
Searchable database of standardized learning content	35	35	0.976
Searchable database of CME courses and content	41	29	0.114

* See Appendix A for full text of questions

** χ^2 test for significance

Cross tabulation also identified multiple significant differences between physicians practicing in urban compared to non-urban areas. Physicians practicing in urban areas rated meetings of their specialty societies or medical associations and short (4 hour) courses covering one topic in-depth as more highly preferred (mean 4.2 and 3.6 respectively) than physicians practicing in non-urban areas (mean 3.6 and 3.4 respectively). Physicians in non-urban areas rated audio/visual tapes significantly more highly preferred (mean 2.5) than did physicians practicing in urban areas (mean 2.0).

Although keeping up on the latest medical information was the most important

reason for all physicians to participate in CME, physicians practicing in urban areas rated meeting and networking with colleagues significantly more highly (mean 0.6) than did physicians practicing in non-urban areas (mean 0.4). Of physicians who plan to recertify, those who practice in urban areas rated MOC as more important for their practice group (mean 3.3) and for medical licensure (mean 3.3) than did those practicing in non-urban areas (mean 2.6 for both) (Table 14).

Table 14. Summary of selected survey answers of physicians living in non-urban areas compared to physicians living in urban areas, CME Needs Assessment Study, 2005.

Question*	Non-urban Mean	Non-urban +/- S.D.	Urban Mean	Urban +/- S.D.	p-value **
Medical Association Meetings	3.6	1.340	4.2	1.025	0.000
Short, in-depth, one-topic review	3.4	1.069	3.6	1.017	0.026
1-3 day update or review	3.8	1.127	3.6	1.110	0.233
Journal reading/literature search	3.5	1.082	3.7	1.013	0.140
Pharmaceutical co. events	2.2	1.050	2.0	1.006	0.068
Audio/video tapes	2.5	1.297	2.0	1.077	0.002
Computer-based CME	2.6	1.236	2.5	1.220	0.688
Grand rounds at your hospital	3.2	1.152	3.4	1.164	0.162
Teleconferences	1.8	0.977	1.8	0.870	0.848
Individual retraining	2.2	1.174	2.1	1.207	0.672
Keep up on latest medical information	2.5	0.982	2.5	0.964	0.920
Pass a certification or MOC exam	0.5	0.901	0.5	0.852	0.668
Hospital privileges or state licensure	1.0	1.041	0.9	1.032	0.390
Meet and/or network with colleagues	0.4	0.688	0.6	0.892	0.001
Discuss cases/questions with experts	0.7	0.908	0.5	0.826	0.101
Combine recreation with learning	0.5	0.745	0.5	0.775	0.558
Required for hospital privileges	3.4	1.662	3.8	1.383	0.075
Required for practice group	2.6	1.656	3.3	1.565	0.003
Required for medical licensure	2.6	1.645	3.3	1.507	0.004
Demonstrate expertise in my specialty	3.9	1.162	4.2	1.149	0.150
Demonstrate up-to-date medical knowledge	4.0	1.211	4.2	1.210	0.561
Demonstrate competency to provide patient care	3.9	1.292	4.1	1.214	0.276

* See Appendix A for full text of questions

**Independent sample t-test

Regression analysis:

When controlling for all factor main effects and the interaction between practice type and location of practice, the practice-type variable remained the most distinct and important variable, accounting for significant variation in five of the ten sources of CME after controlling for practice location, intention to recertify, gender, and age (Table 15). Physicians with a primarily clinical practice are less likely to prefer meetings of their medical specialty than physicians with significant academic or administrative roles. They are more likely to prefer 1-3 day update or review courses, pharmaceutical company sponsored events, audio/video tapes, and individually arranged retraining programs. They are also more likely to prefer demonstrations of procedural techniques.

Practice-type also accounted for significant variation in importance of meeting and networking with colleagues. Physicians with significant academic or administrative roles rate this reason for participating in CME as more important than physicians with primarily clinical responsibilities (Table 15).

Table 15. Significant results of regression analysis, CME Needs Assessment Study, 2005.

Question	Intercept	Clinical	Non-urban	Non-recert	Female	Age	GV*LOP ^W
Source of CME							
Meetings of your specialty society or medical assn	4.491	-0.442	-0.895				
Short (4 hour) in-depth coverage of one topic							
1-3 day update or review courses	2.726	0.591					
Journals/reference texts/literature searches							
Pharmaceutical sponsored events	1.106	0.487					
Audio/video tapes	1.174	0.499	1.250				-1.056
Computer-based CME (Internet or CD-ROM)							
Programs sponsored by your hospital (Grand Rounds)							
Teleconferences							
Individually arranged retraining programs	1.357	0.586		-0.320			
Format of CME							
Demonstrations of procedural techniques	3.920	0.582				-0.017	
Interactive computer programs	3.708					-0.020	
Individually arranged study/mini-sabbaticals	2.614			-0.439			
Reason to do CME							
Pass a certification or re-certification exam	0.846			-0.503			
Obtain credits required for hospital privileges or state licensure	0.574				0.287		
Meet and/or network with colleagues	1.225	-0.671	-0.710				0.606

^WGV = practice type grouping variable (clinical v. academic),
LOP = location of practice (non-urban v. urban).

Discussion:

I found that almost all (95%) of the physicians with time-limited certificates who responded to the survey plan to participate in maintenance of certification for their specialties. This is a higher percentage of participation than found by the American Board of Internal Medicine (ABIM) whose data indicate that 77% of general internists and 60% of medical subspecialists with time-limited certificates plan to renew their internal medicine certificates and 86% of medical subspecialists plan to renew their subspecialty certificates.²⁰ The difference between my study findings and those of the ABIM might be explained by the inclusion of all specialties in my study and the possibility that higher rates of maintenance of certification are encountered in specialties other than internal medicine. This new data on Oregon physicians' plans indicates that linking certification to medical licensure would not impact Oregon's physician workforce significantly.

The most important factors in physicians' decision to recertify were internal, such as desiring greater expertise in their specialty, up to date medical knowledge, and clinical competence. These positive professional motivators are very similar to those found by Lipner et. al. in their survey of internists and medical subspecialists who were participating in the internal medicine MOC program.²⁰ Physicians in my study rated a requirement to maintain board certification for their practice group or medical license as less important than the positive professional motivators cited above. Requirements for the practice group and licensure were significantly more important for physicians practicing in urban environments than those practicing in less populated areas.

These positive professional motivators for participating in maintenance of certification are also similar to physicians' reasons for participating in CME in general.

Most physicians who responded to my survey believe that keeping up to date with the latest medical information and research is the most important reason to attend CME programs. This corroborates McLeod et. al.'s observation that maintaining professional competence, acquiring new knowledge and skills, and improving understanding of concepts were the most important motivators for Canadian family physicians to participate in CME.²¹ There is scant literature exploring physicians' motivations to participate in professional development or CME, but internal motivation for learning and the desire for professional competence have been associated with successful learning and integration of new knowledge.²²

Generally the physicians who responded to my survey prefer traditional forms of CME. Medical specialty association meetings were the most preferred source of CME activity, although review courses of various lengths were also highly rated. Large group lectures were the most desirable format (selected as more or most preferred by 77%), although small interactive sessions (61%) and demonstrations of procedures (59%) were also popular.

These findings are very similar to other studies of physician preferences for CME format. A survey of Minnesota physicians reported an overwhelming preference for traditional CME programs compared to more interactive, technology-based activities.²³ Eighty-five percent of rural general practitioners in Australia selected traditional didactic CME as their preferred method of maintaining professional standards, although self-directed learning was also frequently selected (65%).²⁴ Brown et. al. surveyed members of the Society for Healthcare Epidemiology of America and found local grand rounds (53%) and regional meetings (53%) were the most preferred educational medium.²⁵

Interestingly, although the ABMS has set standards for MOC which include assessment of performance in practice, including doctor-patient communication and professionalism,¹⁷ traditional knowledge-based CME programming was selected as more helpful for MOC by more of my survey respondents than any other option. A program on practice-based learning and improvement was the third most frequently selected option (chosen by 41%) which may reflect a growing awareness of the importance of this educational strategy. Programs on professionalism and communication skills were selected by only 4 and 7 percent respectively. Perhaps medical training with its emphasis on knowledge acquisition and standardized testing has better prepared physicians to identify gaps in their knowledge base than in their interpersonal behavior.

Regression analysis revealed the importance of practice-type as a predictor for CME format preference even after controlling for location of practice, participation in a MOC program, gender, and age. Physicians who spend more of their time taking care of patients rate a number of CME venues more favorable than do physicians with mixed administrative or academic and clinical roles. Several of the formats which clinicians rate more favorably are those which would presumably have more clinical content, e.g. review courses, individual retraining, and demonstrations of procedural techniques. This finding emphasizes the need to assess the audience for whom educational activities are planned, and it has particular significance for CME planners, who are more likely to have academic and administrative responsibilities.

My study has several limitations. Its results may not be applicable outside of Oregon. Respondents may have had a greater interest in continuing medical education and be more likely to prefer certain formats of CME than non-respondents or may have

been more likely to be participating in MOC. The number of physicians with time-limited certificates who do not plan to participate in MOC was so low that I could not perform any meaningful analysis of their responses.

An additional potential limitation of my study is that it is a survey and as such measures only what individuals perceive their needs to be. Interviews and questionnaires are a relatively uncomplicated method of collecting expressed training needs,^{26,27} but there can be a gap between self-evaluation of knowledge and tested knowledge.²⁸ I focused this survey on preferences for source and format of CME rather than specific knowledge gaps, but a similar disparity exists between the educational formats a learner prefers and those which are the most effective in changing physician behavior.^{5,13} However, current studies of effectiveness have studied narrow outcomes and may miss the unexpected benefits of a learning experience. Medicine is a profession with inherent unpredictability and uncertainty, and physicians require wide knowledge and depth of experience – the relevance of some of which might not have been obvious at the time the learning occurred.¹²

Conclusion:

My study confirms that physicians continue to prefer traditional formats for continuing medical education, both for CME in general and as preparation for MOC. Physicians' motivations for participating are internal and positive and focused on increasing their knowledge base and demonstrating their competency in patient care. The characteristics of a physician's practice also have a significant effect on the type of CME a physician will choose. These findings are important for medical educators and CME

program planners. While the effectiveness of an educational program is clearly important, it is not the only determinant of success. Physicians must also be willing and motivated to participate for successful learning to occur.

One strategy for future program development will be to integrate studied and effective educational methods into traditional CME programs. Further research should evaluate the effectiveness of this hybrid approach. In addition, as physicians respond to the new educational and regulatory environment in which they practice and learn, it will be important to monitor change in their motivations and preferences for CME. The cohort of physicians identified for this study should be re-surveyed at a future date to identify changing attitudes and preferences regarding continuing medical education.

References:

1. Difford F, Hughes RC. General practitioners' attendance at courses accredited for the postgraduate education allowance. *Br J Gen Pract.* Jul 1992;42(360):290-293.
2. Goulet F, Gagnon RJ, Desrosiers G, Jacques A, Sindon A. Participation in CME activities. *Can Fam Physician.* Mar 1998;44:541-548.
3. *ACCME Accreditation Policies, Including Information for Provider Implementation.* Chicago, IL: Accreditation Council for Continuing Medical Education; 2004.
4. Davis DA, Thomson MA, Oxman AD, Haynes RB. Evidence for the effectiveness of CME. A review of 50 randomized controlled trials. *Jama.* Sep 2 1992;268(9):1111-1117.
5. Davis DA, Thomson MA, Oxman AD, Haynes RB. Changing physician performance. A systematic review of the effect of continuing medical education strategies. *Jama.* Sep 6 1995;274(9):700-705.
6. Cantillon P, Jones R. Does continuing medical education in general practice make a difference? *Bmj.* May 8 1999;318(7193):1276-1279.
7. Davis D, O'Brien MA, Freemantle N, Wolf FM, Mazmanian P, Taylor-Vaisey A. Impact of formal continuing medical education: do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? *Jama.* Sep 1 1999;282(9):867-874.
8. Kohn K, Corrigan J, Donaldson M, eds. *To Err is Human: Building a Safer Health System.* Washington, DC: National Academy Press; 2000.
9. Medicine Io, ed. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington, DC: National Academy Press; 2001.
10. Choudhry NK, Fletcher RH, Soumerai SB. Systematic review: the relationship between clinical experience and quality of health care. *Ann Intern Med.* Feb 15 2005;142(4):260-273.
11. Mazmanian PE, Davis DA. Continuing medical education and the physician as a learner: guide to the evidence. *Jama.* Sep 4 2002;288(9):1057-1060.
12. Grant J. Learning needs assessment: assessing the need. *Bmj.* Jan 19 2002;324(7330):156-159.
13. Fox RD, Bennett NL. Learning and change: implications for continuing medical education. *Bmj.* Feb 7 1998;316(7129):466-468.
14. Cassel CK, Holmboe ES. Credentialing and public accountability: a central role for board certification. *Jama.* Feb 22 2006;295(8):939-940.
15. Tamblyn R, Abrahamowicz M, Brailovsky C, et. al. Association between licensing examination scores and resource use and quality of care in primary care practice. *Jama.* Sep 16 1998;280(11):989-996.
16. Chen J, Rathore SS, Wang Y, Radford MJ, Krumholz HM. Physician board certification and the care and outcomes of elderly patients with acute myocardial infarction. *J Gen Intern Med.* Mar 2006;21(3):238-244.
17. Horowitz SD, Miller SH, Miles PV. Board certification and physician quality. *Med Educ.* Jan 2004;38(1):10-11.
18. Rea L, Parker, RA. *Designing and Conducting Survey Research: A Comprehensive Guide.* 2nd ed. San Francisco: Jossey-Bass; 1997.

19. *SPSS for Windows* [computer program]. Version 14.0. Chicago, IL: SPSS, Inc.; 2006.
20. Lipner RS, Bylsma WH, Arnold GK, Fortna GS, Tooker J, Cassel CK. Who is maintaining certification in internal medicine--and why? A national survey 10 years after initial certification. *Ann Intern Med.* Jan 3 2006;144(1):29-36.
21. McLeod PJ, McLeod AH. If formal CME is ineffective, why do physicians still participate? *Med Teach.* Mar 2004;26(2):184-186.
22. Delva MD, Kirby JR, Knapper CK, Birtwhistle RV. Postal survey of approaches to learning among Ontario physicians: implications for continuing medical education. *Bmj.* Nov 23 2002;325(7374):1218.
23. Reddy H, Harris I, Galle B, Seaquist ER. Continuing medical education. What do Minnesota physicians want? *Minn Med.* Mar 2001;84(3):58-61.
24. Booth B, Lawrance R. The learning preferences of rural and remote general practitioners. A quantitative analysis and its implications for the RACGP QA&CE program. *Aust Fam Physician.* Oct 2000;29(10):994-999.
25. Brown TT, Proctor SE, Sinkowitz-Cochran RL, Smith TL, Jarvis WR. Physician preferences for continuing medical education with a focus on the topic of antimicrobial resistance: Society for Healthcare Epidemiology of America. *Infect Control Hosp Epidemiol.* Oct 2001;22(10):656-660.
26. Barham PM, Benseman J. Determining continuing medical education curricula for general practitioners--a survey of self-perceived needs. *N Z Med J.* May 25 1983;96(732):395-397.
27. Allan JA, Schaefer D, Stocks N. Improving the learning needs survey by using four approaches. *Aust Fam Physician.* Jan-Feb 2005;34(1-2):84-86.
28. Tracey JM, Arroll B, Richmond DE, Barham PM. The validity of general practitioners' self assessment of knowledge: cross sectional study. *Bmj.* Nov 29 1997;315(7120):1426-1428.

APPENDIX A

Division of Continuing Medical Education
Oregon Health & Science University School of Medicine

NEEDS ASSESSMENT SURVEY

1. **There are many different avenues for keeping medical knowledge up to date.** Please indicate which of the following sources of continuing medical education (CME) you prefer by circling your response:

	Least Preferred			Most Preferred		
Meetings of your specialty society or medical Association	1	2	3	4	5	
Short (4 hour) in-depth coverage of one topic	1	2	3	4	5	
1-3 day update or review courses	1	2	3	4	5	
Journals/reference texts/literature searches	1	2	3	4	5	
Pharmaceutical sponsored events.....	1	2	3	4	5	
Audio/video tapes	1	2	3	4	5	
Computer-based CME (Internet or CD-ROM).....	1	2	3	4	5	
Programs sponsored by your hospital (e.g. Grand Rounds)	1	2	3	4	5	
Teleconferences.....	1	2	3	4	5	
Individually arranged retraining programs.....	1	2	3	4	5	

2. **There are many different educational designs used for CME activities.** Please indicate the likelihood of your selecting each of the following formats by circling your response.

	Would not Select			Most Likely To Select		
Lecture in large group setting	1	2	3	4	5	
Small group interactive sessions	1	2	3	4	5	
Demonstrations of procedural techniques	1	2	3	4	5	
Interactive computer programs	1	2	3	4	5	
Journal or Internet reading with post-test	1	2	3	4	5	
Individually arranged study/mini-sabbatical	1	2	3	4	5	

3. **In selecting a CME activity, what topics are of greatest interest to you?** Please list in order of importance from 1 to 3.

Topic 1: _____

Topic 2: _____

Topic 3: _____

4. **What are the most important reasons you participate in formal or informal CME?** Please mark your top three choices with a "1", "2" or "3".

- _____ keep up on latest medical information and research
- _____ pass a certification or re-certification exam
- _____ obtain credits required for hospital privileges or state licensure
- _____ meet and/or network with colleagues
- _____ discuss cases/questions with experts in the field
- _____ combine recreation/travel with learning

Continued on next page.....

5. In the past three years, have you attended any CME programs sponsored or jointly sponsored by the OHSU School of Medicine?

Yes No

6. Are you board certified?

- No. (please skip to question 15).
- Yes, I have lifetime certification (please skip to question 15).
- Yes, I have my lifetime certification, but plan to voluntarily recertify (please read the information below and proceed to question 7).
- Yes, my certification is time-limited (please read the information below and proceed to question 7).

New Re-Certification Requirements

Beginning in 2006 all specialty boards will Institute a new, more complex re-certification process. Though the requirements may vary somewhat by specialty, in general candidates for re-certification will be required to demonstrate:

1. Professional standing - Must hold an active, unrestricted medical license
2. Cognitive expertise - Must successfully complete a secure exam
3. Lifelong learning and self-assessment - Must complete a computer-based knowledge assessment test and/or a minimum number of CME credit hours
4. Practice performance that meets peer standards and national benchmarks for both medical care and physician behaviors - Typically, must complete an assessment of practice performance through chart review, develop an improvement plan, and schedule a future reassessment

All of these components must be repeated with each recertification cycle.

7. Were you previously aware of the new re-certification requirements?

Yes No

8. Within how many years are you due to re-certify?

1 to 2 years 3 to 5 years 5 to 7 years 7-10 years N/A, will voluntarily recertify

9. Do you plan to complete the re-certification process?

Yes
 No (please skip to question 13)

10. Please rate the importance of the following factors in your decision to re-certify in your specialty:

	<u>Not at all</u> <u>Important</u>				<u>Extremely</u> <u>Important</u>
	1	2	3	4	5
Required for hospital privileges	1	2	3	4	5
Required for practice group	1	2	3	4	5
Required for medical licensure	1	2	3	4	5
Demonstrate expertise in my specialty	1	2	3	4	5
Demonstrate that my medical knowledge is up to date	1	2	3	4	5
Demonstrate my competency to provide patient care in my specialty	1	2	3	4	5
Other (please specify _____)	1	2	3	4	5

11. **What resources does your practice setting provide to help you with re-certification?** *Please check all that apply.*

- Time off from practice to complete requirements
- Financial assistance with fees for testing and other program components
- Administrative support for data gathering
- High-speed Internet access and computer support
- Other (please specify _____)
- None

12. **Please indicate which of the following programs would be helpful to you as you participate in the re-certification process.** *Please check all that apply.*

- Traditional knowledge-based CME courses
- Traditional exam prep course for re-certification exam
- CME program on professionalism
- CME program on communication skills
- CME program including skills training using simulations and virtual procedures
- CME program on updating computer skills
- CME program on how to efficiently complete the re-certification process
- CME program focused on practice-based learning and improvement (i.e. quality improvement based on patient data)
- Courses, programs or software to assist with compiling patient data for practice-based quality improvement
- Courses, programs or software using established chronic disease registries as basis for education and quality improvement in your practice
- Searchable database of standardized learning content
- Searchable database of CME courses and content
- Other (please specify _____)

(Please skip to Question 15)

13. **Please rate the importance of the following factors in your decision not to re-certify in your specialty:**

	<u>Not at all</u> <u>Important</u>			<u>Extremely</u> <u>Important</u>	
Unnecessary for my practice	1	2	3	4	5
Too expensive	1	2	3	4	5
Too time-consuming	1	2	3	4	5
Expect to retire before I need to re-certify	1	2	3	4	5
Expect to change careers before I need to re-certify	1	2	3	4	5
Other (please specify _____).....	1	2	3	4	5

14. **If board certification were required for medical licensure in the state of Oregon, would you change your decision and proceed with re-certification in your specialty?**

- Yes No

Continued on next page.....

We appreciate the time you have taken to respond to our survey regarding your continuing medical education interests and preferences. In order to best use the information you have provided for us, we need to know a little about you and your practice.

15. **Are you currently practicing medicine (e.g., direct patient care and other patient-related activities)?**

- Yes, full-time
- Yes, part-time
- Not presently in practice (*please skip to question 19*).

16. **What is the major specialty in which you currently practice?**

- Emergency Medicine
- Family/General Practice
- Internal Medicine
- Obstetrics/Gynecology
- Pediatrics
- Psychiatry
- Surgery
- Other (please specify: _____)

17. **If you practice in a major subspecialty please identify:**

18. **Please mark the answer which you feel best describes the location of your practice or work:**

- Rural setting, population of 2,000 or less
- Community of more than 2,000 but less than 10,000
- Community of more than 10,000 but less than 75,000
- Urban setting, population of 75,000 or more

19. **Please estimate the percentage of your working time spent in each of the following activities in a typical month (total should equal 100%):**

PRACTICE _____% ADMINISTRATION _____% TEACHING _____% RESEARCH _____%

20. **Please complete the following information:**

AGE (yrs) _____ YEARS IN PRACTICE (yrs) _____ GENDER M _____ F _____

21. **If you have additional comments that would help us to better understand your needs for continuing medical education, please add them here:**

OUR SINCERE THANKS FOR YOUR TIME AND ASSISTANCE WITH OUR SURVEY

Please return survey in the postage-paid envelope provided or mail to:

Continuing Medical Education-L602
Oregon Health & Science University
Portland, OR 97239-3098

APPENDIX B

August 17, 2005

«NAME»
«DEPARTMENT»
«ADDRESS1»
«ADDRESS2»
«CITY» «STATE» «ZIP»

Dear «salutation»:

The primary goal of the OHSU Division of Continuing Medical Education is to meet the educational needs of practicing physicians in Oregon. Over 20 years ago, Dr. J. S. "Dutch" Renschmidt, founder of the division, first surveyed Oregon physicians to assess their needs for continuing medical education. The survey has been repeated every five years and the results have been extremely helpful in developing activities specifically tailored to physicians in this region.

This year for the first time we have included some questions on maintenance of board certification. We are interested in your thoughts about this new development in medicine and how this process may impact your need for continuing medical education.

Because you are part of a small scientific sample of Oregon physicians, your opinion is extremely important. If the information obtained is to accurately represent needs and opinions across the state, we must have as high a response rate as possible. Pilot tests indicate the questionnaire can be completed comfortably in 10-15 minutes.

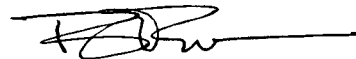
A postage-paid return envelope is enclosed for your convenience or, if you would prefer to complete the survey electronically, the form and instructions are located at www.surveymonkey.com/s.asp?u=380521252009. The survey is confidential and no individuals' names are connected to any of the results. The number included on the form will be used only for follow-up of those questionnaires not returned by September 1. Should you have any questions or if we can assist you as you complete the survey, please call 503-494-8700 or 800-452-1048, or e-mail doeringl@ohsu.edu.

We are very appreciative of your time. As a small token of our appreciation, five respondents will be selected at random to receive a \$250 gift certificate from the OHSU Medical Bookstore. Thank you again for participating.

Sincerely,



Donald E. Girard, M.D.
Associate Dean for
Continuing & Graduate Medical Education



Elizabeth A. Bower, M.D.
Assistant Dean for
Continuing Medical Education

APPENDIX C

SURVEY REMINDER LETTER

September 2, 2005

Dear _____,

About three weeks ago we wrote to ask your opinion on issues related to your continuing medical education needs and preferences. As of today your completed questionnaire has not been received.

The Division of Continuing Medical Education has undertaken this study as part of our mission to promote quality health care for the citizens of Oregon through identifying and addressing the educational needs of our physicians.

We are writing again because of the significance of your completed questionnaire to the usefulness of the study. You are part of a small, randomly-selected sample of Oregon physicians. If the study is to truly reflect the opinions of all physicians across the state, it is extremely important that each of the questionnaires mailed to the sample population be completed and returned.

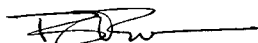
In the event that your questionnaire has been misplaced, a replacement is enclosed. If you would prefer to complete the survey electronically, the form and instructions are located at www.surveymonkey.com/s.asp?u=380521252009. If you prefer, please e-mail doeringl@ohsu.edu and reference "CME Survey" to request the link.

We are very appreciative of your time. As a small token of our appreciation, five respondents will be selected at random to receive a \$250 gift certificate from the OHSU Medical Bookstore. Thank you again for participating.

Sincerely,



Donald E. Girard, M.D.
Associate Dean for Continuing & Graduate Medical Education



Elizabeth A. Bower, M.D.
Assistant Dean for Continuing Medical Education