CME Needs Assessment: National Model - Dental CME

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Introduction

This CME Needs Assessment paper was written to provide analysis on a particular regional country's <<the country>> proposed CME in Primary Care program. It has been provided as a National Model that other countries may wish to replicate.

In this new millennium most nations, both developed and developing are actively reviewing national health policies and strategies as well as health delivery systems. The over-riding imperative in all cases is to deliver quality health care in a cost efficient manner while addressing issues of access and equity.

The provision of health services in <<the country>> is divided into federal, local and private sectors. The Health Authority, and the local government agency is responsible for the provision of integrated, comprehensive, and quality of health services for its population.

The definition of need

As in most areas of education, for many years there has been intense debate about the definition, purpose, validity, and methods of learning needs assessment. It might be to help curriculum planning, diagnose individual problems, assess student learning, demonstrate accountability, improve practice and safety, or offer individual feedback and educational intervention. Published classifications include felt needs (what people say they need), expressed needs (expressed in action) normative needs (defined by experts), and comparative needs (group comparison). Other distinctions include individual versus organizational or group needs, clinical versus administrative needs, and subjective versus objectively measured needs. The defined purpose of the needs assessment should determine the methods used and the use made of the findings.

Exclusive reliance on formal needs assessment in educational planning could render education an instrumental and narrow process rather than a creative, professional one.

Methods of needs assessment

Although the literature generally reports only on the more formal methods of needs assessment, doctors and dentists use a wide range of informal ways of identifying learning needs as part of their ordinary practice. These should not be undervalued simply because they do not resemble research. Questionnaires and structured interviews seem to be the most commonly reported methods of needs assessment, but such methods are also used for evaluation, assessment, management, education, and now appraisal and revalidation.

Learnig for needs

The main purpose of needs assessment must be to help educational planning, but this must not lead to too narrow a vision of learning. Learning in a profession is unlike any other kind of learning. Doctors and dentists live in a rich learning environment, constantly involved in and surrounded by professional interaction and conversation, educational events, information, and feedback. The search for the one best or "right" way of learning is a hopeless task, especially if this is combined with attempting to "measure" observable learning. Research papers show, at best, the complexity of the process.

Multiple interventions targeted at specific behavior result in positive change in that behavior. Exactly what those interventions are is less important than their multiplicity and targeted nature. On the other hand, different doctors and dentists use different learning methods to meet their individual needs. For example, in a study of 366 primary care doctors who identified recent clinical problems for which they needed more knowledge or skill to solve, 55 different learning methods were selected. The type of problem turned out to be the major determinant of the learning method chosen, so there may not be one educational solution to the identified needs.

Much of a doctors' and a dentists' learning is integrated with their practice and arises from it. The style of integrated practice and learning ("situated learning")

develops during the successive stages of medical education. The components of apprenticeship learning in postgraduate training are made up of many activities that may be regarded as part of practice (13). Senior health professionals might also recognize much of their learning in some of these elements and could certainly add more- such as conversations with colleagues.

Thus, educational planning on the basis of identified needs faces real challenges in making learning appropriate to and integrated with professional style and practice. The first step is to recognize the need of learning that are a part of daily professional life in medicine and to formalize, highlight, and use these as the basis of future recorded needs assessment and subsequent planning and action, as well as integrating them with more formal methods of needs assessment to form a routine part of training, learning, and improving practice.

Methodology

Quality health care for patients is supported by maintenance and enhancement of clinical, management and personal skills. The knowledge and skills of practitioners require refreshment, and good professional attitudes need to be fostered through the process of continuing professional development. In an attempt to assess the needs for professional development of the medical, dental practitioners and nursing staff a survey was conducted by means of a Questionnaire (APPENDIX).
This report takes into account a wide section of the various medical, dental and nursing staff.
The purposes of the review, therefore were to:

- Determine the area of professional development
- Help thehealth professional , meet the challenge of changes in the structure and delivery of patient care.
- Encourage more reflection on practice & learning needs, including more forward planning; and
- Make the educational methods used in practice more effective

Part 1 - Demographic data (see Appendix)

465 questionnaires were included in the study out of 600 hundreds distributed. The exclusion criteria were that either the questionnaire was not returned or was incomplete. The response rate was 77 percent.

The mean age of the study population was 42years (SD 9.70) with the minimum age being 23 years and maximum being 74years. 72% of the study populations were below 50 years. The mean of the number of years since graduation was 18 years (mean =8.46, SD=9.16). Whereas the mean of the number of years in practice was 17 years (Mean=17.18, SD=9.16). As for gender distribution 35% of the samples were males vs 65% who were females.

Topics for the CME for Dentists and Dental Assistants

The report includes the details of the ratings on various topics, however the topics that received the highest ratings were: Infection control, management of the medically compromised patients, Diagnosis & Treatment planning, Dental radiology & its interpretation, preventive dentistry, dental composites and endodontics.

Format of CME

The response rate for the monthly activity was the highest with Hands - workshops.

Assessment Strategies
In the implementation of any CME activities assessment strategies is critical to judge the success of such a program. For example communication skills learning must be both formative and summative. The knowledge, skills, and attitudes to be assessed must be made explicit to both learners and teachers alike. Potential evaluators include local experts, course faculty, simulated and real patients, peers, and the learners themselves. Formative assessment should occur throughout the communication skills curriculum and is intended to shape and improve future behaviors. Assessment of communication skills must include direct observation of performance. Evaluation of setting a therapeutic environment, gathering data and providing information and closure must be included. Evaluation of advanced skills, including use of interpreters, providing bad news and promoting behavior change should be done as well. Criteria should match the novice level of the end of second year student, who should be able to identify the critical issues for effective communication and perform the skills under straightforward circumstances.

Conclusions

Quality CME can enhance the knowledge base and practice skills of the participating health care provider and is increasingly used as part of the credentialing and reappointment process. Continuing Medical Education is important not only as a requirement for practice, but as means for the profession to achieve one of its primary goals: QUALITY PATIENT CARE. To our patients CME requirements are a commitment made by the medical and dental practitioner to keep our knowledge and skills current.

CME really is about changing behavior through education- about doing something different, doing it better." It is critical to look at CME and CPD in the mentality of 21st century. We attempted to clearly present: that the patient's concerns, values and outcomes must be the center of care; that partnering with an activated patient is essential; that self-awareness is essential in being an effective physician; that improving the process of care and health outcomes is the physician's responsibility and requires a systems approach.

Quality CME can enhance the knowledge base and practice skills of the participating health care provider and is increasingly used as part of the credentialing and reappointment process. Continuing Education is important not only as a requirement for practice, but as means for the profession to achieve one of its primary goals: QUALITY PATIENT CARE. To our patients CME requirements are a commitment made by the medical and dental practitioner to keep our knowledge and skills current.

Dental Care Education Initiative

The topics that were covered in the survey included the following

CME FOR DENTISTS AND DENTAL ASSISTANT
Infection Control
The Patient Management Skills
Preventive Dentistry
Restorative & Esthetic Dentistry
Endodontics
Pedodontics.
Periodontics.
Prosthodontics
Oral Surgery
Implantology
Health Promotional Activities & Oral Health Education

Format of CME
Timing of the CME
Type of Activities
Self Study
Results of Survey

Topics for the CME

The response to the various topics in dentistry is presented in Tables 1-3 . These topics were rated similarly as the topics in medicine with:

a) Order of importance of the topic.
(1 = least important to 5 = most important)
b) Rating your own current level of Knowledge/performance.
(1 = basic to 5 = highly skilled)
c) Recommend CME activity on level of priority
(1 = least to 5 = highest priority)

Table 1

Topics		Rating of Importance		Knowledge Level		Recommended CME	
		Mean	SD	Mean	SD	Mean	SD
I	INFECTION CONTROL	4.95	.21	4.01	.69	4.52	.93
II	The Patient Management Skills						
1	Interviewing skills	4.13	1.00	3.66	.96	3.44	1.16
2	Medical History	4.38	1.05	3.66	1.09	3.82	1.21
3	Management of Medically Compromised patients	4.53	.76	3.52	.98	4.20	.99
4	Oral Examination	4.51	.99	4.09	1.01	3.81	1.29
5	Diagnosis & Treatment Planning	4.50	1.02	3.96	1.07	3.90	1.28
6	Dental Radiographs & interpretation	4.34	1.12	3.67	1.15	3.77	1.30

Table 2

Topics		Rating of Importance		Knowledge Level		Recommended CME	
		Mean	SD	Mean	SD	Mean	SD
III	PREVENTIVE DENTISTRY	4.58	.69	4.14	.78	3.85	1.28
IV	RESTRORATIVE & ESTHETIC DENTISTRY						
1	Amalgams	3.79	1.27	3.93	.99	3.03	1.44
2	Composites	4.45	.86	4.02	.92	3.76	1.36
3	Glass Ionomers	3.91	1.142	3.81	1.04	3.48	1.40
4	Veneers	3.66	1.12	3.01	1.17	3.61	1.06
5	Bleaching	3.71	1.153	2.88	.96	3.85	1.18

Table 3

Topics		Rating of Importance		Knowledge Level		Recommended CME	
		Mean	SD	Mean	SD	Mean	SD
V	ENDODONTICS						
1	Anteriors	4.11	1.28	3.13	1.29	3.82	1.33
2	Posteriors	4.04	1.22	3.86	1.16	3.92	1.27
VI	PEDODONTICS	4.12	1.12	3.35	1.24	3.84	1.14
VII	PERIODONTICS	4.12	.97	3.52	1.22	3.92	1.07
VIII	PROSTHODONTICS						
1	crowns	3.86	1.28	3.83	1.20	3.82	1.20
2	bridges	3.91	1.29	3.85	1.25	3.75	1.25
3	complete dentures	3.67	1.43	3.75	1.20	3.45	1.29
4	partial dentures	3.69	1.39	3.95	1.13	3.44	1.24
IX	ORAL SURGERY	3.77	1.26	4.04	1.10	3.75	1.24
X	IMPLANTOLOGY						
1	Surgical	3.62	1.39	3.69	1.20	3.74	1.37
2	Prosthetic	3.81	1.28	3.72	1.18	3.70	1.35
XI	HEALTH PROMOTIONAL ACTIVITIES & ORAL HEALTH	4.48	.83	3.58	1.39	3.98	1.20

Format of CME

Attempt was made to establish the most suitable timings and frequency of the CME activities.

The ratings adopted were :
1 being least appropriate, 5 most appropriate. The results are presented in Table 4 and the need for a monthly activity was rated highest 3.95 with Hands- on Training Table 5

Overall evaluation and need for improvement

As curricula and methodologies for the training of physicians approach the 100-year anniversary of the Flexner report (2010), it is important to recognize that medical education has been a constantly evolving process to address the training needs of physicians to serve society and its people.

Understanding curricular reform is one of understanding its history.

Many reports prior to 1990 (e.g. Rappleye, GPEP, Macy Foundation) comment on the process, as well as the content and structure of medical education. Several have noted the glacial progress of reform and the reasons behind this pace. More recently in the 1990s and the new century, the breadth of involved stakeholders in this process has widened, as many entities within and beyond medical schools have identified significant needs in the process of education of physicians for the 21st century. These defined challenges reflect not only the explosion of medical knowledge and technology and the

Table 4: Timing of CME

	Timing of the CME	Rating	
		Mean	SD
1	Weekly at night	2.42	1.52
2	Half day in the weekend on weekly basis	2.48	1.49
3	Bi-weekly	2.61	1.55
4	Monthly	3.95	1.38
5	Once yearly (Conference)	2.75	1.72
6	Others	2.03	1.60

Table 5: Type of Activities

	Type of activities	Rating	
		Mean	SD
1	Classic lectures	3.41	1.49
2	Workshops	3.91	1.38
3	Hand on Training	3.96	1.29
4	Conferences	3.55	1.32
5	Journal Club	2.82	1.48
6	Others	1.85	1.37

Table 6: Self Study Methods

	Type of activities	Rating	
		Mean	SD
1	Classic lectures	3.41	1.49
2	Workshops	3.91	1.38
3	Hand on Training	3.96	1.29
4	Conferences	3.55	1.32
5	Journal Club	2.82	1.48
6	Others	1.85	1.37

and the changing demographics of the population, but also the broader societal and health care system changes that are significantly affecting the contextual environment in which medicine is practiced.

There is a need to improve and train people responsible for CME and CPD activities. Traditional educational practice in medical schools emphasize the organ systems and discipline-based approaches, but in Primary Health Care , faculty development is necessary to ensure effective team teaching approaches, interdisciplinary collaboration, integration of material across disciplines and courses, and focus on patient health outcomes. The integration of these concepts needs to be across the curriculum and in every course rather than adding additional curricular time. Faculty development in adult education techniques may be necessary. Faculty development for role modeling and mentoring techniques should be considered.

The response rate from the survey was relatively high, reflecting the interest of the primary health care team in CME and CPD. There are a number of Barriers to obtaining optimal CME including lack of time and type of activities.

Lack of time

Lack of time was seen as the biggest barrier to obtaining optimal CME. All CME was carried out in personal time. 'It means night-time or weekends. CME activity has to fit in with on call and family. 'I am a working mother, time is the essence.' In our survey (table 6) most health care members preferred CME activity on a monthly basis which reflects that time is precious for the busy health professionals.

Motivation and fatigue were other barriers to CME. Distance, availability and cost were seldom raised as issues for urban GPs. However, distance precluded attendance for many rural practitioners, as did difficulty obtaining locums, cover for single days, availability of CME and financial

considerations. The perceived challenge was to increase the accessibility of personally-interactive CME.

Type of activities

A number of studies have shown preference of GPs for personal interaction. Some studies have shown a preference amongst physicians for lectures but this may include interaction. Others have found journals the most popular source of information but interactive formats were still highly rated. Preference depends on the type and quality of personal experience of this type of format. Pendleton differentiated the academic and professional approach to CME. He postulated that the academic prefers the written medium and the clinician prefers face-to-face. In our survey the respondents preferred the most hand on training, workshop, and conferences.

Review of randomized controlled trials on CME interventions revealed that personal interaction to be central to effectiveness in change in practice. Several studies have reported that physicians seek confirmation and validation of current and new medical practices through their peers. Other studies have confirmed the importance of interaction in changing professional behavior. However, it has not been established which elements of the interactive process enable learning. Interaction allows for clarification, personalisation of information, exploration, feedback, and reflection. It can also address other needs of doctors that may not be recognized or quantified - the need for support, recognition, motivation and fulfillment, and the 'need' to belong to a professional community.

As for self study methods the respondent preferred mostly journals followed by the internet followed by CD as shown in Table 6.

Interactive formats are not inherently beneficial nor always produce change. Some formats may be more conducive to specific changes in behavior and some to support. Group dynamics, facilitation, personal agendas, and internal and external influences contribute to the complexity of the format. In general, the focus was on choice of CME as opposed to other elements of the learning cycle. This approach has been documented previously and reflects the traditional approach to learning. It is well established that CME should follow the principles of androgogy - adult, self-directed learning. The term 'androgogy' has been coined to describe the learning culture appropriate to adult education . Whereas the term 'pedagogy' describes the teacher-centred approach to the education of children, androgogy 'recognises education to be a dynamic lifelong process' that 'is learner-orientated'. This is grounded in experiential learning - identifying and addressing needs and applying learning with continuing reflection. Although much has been written about the theory and benefits of this model. GPs do not appear to adopt it. This is not unique to GPs - a study of physicians' CME found that 'unstructured ad hoc reading and postgraduate activities predominate over methods based on specific, individual needs or on current patient problems'. Some GPs in our study did recognise that tailoring their CME to their identified, specific needs was better than the opportunistic approach, but few attempted this in any structured way. Discussions with colleagues one-to-one and in small groups may serve as an informal process of reflection, even though the benefits may not be easily quantifiable. The process of reflecting on issues, debating problem areas and formalising opinions may be helpful to the clinician, even where there has not been a specific updating of knowledge.

CME and CPD for Dentists

CME Needs for Dentistry

The topic of Infection Control received the highest ratings of all the topics 4.95 (SD 0.21) rating for and a rating of 4.01 (SD 0.69) for knowledge level. The topic of implantology was rated high for level of importance, but received lowest scores for knowledge level 2.8 (SD 1.2). This reflects the fact that, until recently this topic was not taught as part of the curriculum in the study of under graduate dentistry. Hence many general practitioners lack adequate knowledge and information on this topic. In addition as they are not practicing this specialty it was rated as the topic of 'least important'.

Also management of the medically compromised patients was rated of high importance with a score of 4.53 (SD 0.76) with the least score for current level of knowledge of the topic 3.52 (SD 0.98). An area that needs to be focused on. The details of the various topics that were considered is presented in Table 9.

Both Amalgams and glass ionomer restorations were rated low for importance as well as knowledge level because composites is the materials which is being predominantly used for restorations. Interestingly both the topics that is veneers and bleaching received low scores for level of importance as well as knowledge level probably because these procedures are not being practiced in the GAHS dental facilities in the Primary Health Care Center dentists who comprised the major proportion of the study population.

Response to the timing of the CME activity was highest for a monthly event 3.95 (SD 1.38) while the hands - on Training activity was highly recommended 3.96 (SD 1.29). For the mode of self directed learning Journals were rated high 3.64 (SD 1.38).

Conclusions

Quality CME can enhance the knowledge base and practice skills of the participating health care provider and is increasingly used as part of the credentialing and reappointment process. Continuing Medical Education is important not only as a requirement for practice, but as means for the profession to achieve one of its primary goals: QUALITY PATIENT CARE. To our patients CME requirements are a commitment made by the medical and dental practitioner to keep our knowledge and skills current.

Table 9: Topics considered in the CME Survey Questionnaire for Dentistry

Topics	Rating of Importance		Knowledge Level	
	Mean	SD	Mean	SD
INFECTION CONTROL	4.95	0.21	4.01	0.69
Patient Management Skills				
Interviewing skills	4.13	1.00	3.66	0.96
Medical History	4.38	1.05	3.66	1.09
Management of Medically Compromised patients	4.53	0.76	3.52	0.98
Oral Examination	4.51	0.99	4.09	1.01
Diagnosis & Treatment Planning	4.50	1.02	3.96	1.07
Dental Radiographs & interpretation	4.34	1.12	3.67	1.15
PREVENTIVE DENTISTRY	4.58	0.69	4.14	0.78
RESTORATIVE & ESTHETIC DENTISTRY				
Amalgams	3.79	1.27	3.93	0.99
Composites	4.45	0.86	4.02	0.92
Glass Ionomers	3.91	1.142	3.81	1.0
Veneers	3.66	1.12	3.01	1.1
Bleaching	3.71	1.153	2.88	0.96
ENDODONTICS	4.1	1.25	3.5	1.2
Anteriors	4.11	1.28	3.13	1.29
Posteriors	4.04	1.22	3.86	1.16
PEDODONTICS	4.12	1.12	3.35	1.24
PERIODONTICS	4.12	0.97	3.52	1.22
PROSTHODONTICS	3.7	1.35	3.8	1.2
ORAL SURGERY	3.77	1.26	4.04	1.10
HEALTH PROMOTIONAL ACTIVITIES & ORAL HEALTH	4.48	0.83	3.58	1.39

Assessment strategies

In the implementation of any CME activities assessment strategies is critical to judge the success of such a program. For example communication skills learning must be both formative and summative. The knowledge, skills, and attitudes to be assessed must be made explicit to both learners and teachers alike. Potential evaluators include local experts, course faculty, simulated and real patients, peers, and the learners themselves. Formative assessment should occur throughout the communication skills curriculum and is intended to shape and improve future behaviors. This requires direct observation (in person or videotaped) of the skills during role-play activities, with standardized patients, and with real patients. The feedback provided should be balanced and nonjudgmental. Self-assessment during the learning process should be encouraged.

Assessment of communication skills must include direct observation of performance. Evaluation of setting a therapeutic environment, gathering data and providing information and closure must be included. Evaluation of advanced skills, including use of interpreters, providing bad news and promoting behavior change should be done as well. Criteria should match the novice level of the end of second year student, who should be able to identify the critical issues for effective communication and perform the skills under straightforward circumstances.

Specific tools can be chosen from among the following:

- Standardized patients
- OSCE's
- Observed performance with patients and others
- Written reflections describing how a learner would approach a certain situation
- MCQ's

Adult Learning Principles

In addition to being "champions," teachers need to employ principles of adult learning in their approach to teaching these topics. The knowledge base for any of these topics is changing every day with the information and technology explosion that has occurred in the last quarter-century. Genetics is a perfect example of a topic subject to rapid, ongoing revision based upon new research findings. Physicians must learn how to identify their own learning needs and address these needs effectively, in order to keep up with the ever-advancing knowledge base in most of these topic areas.

Self-Awareness

In addition to fostering an enthusiastic approach to lifelong learning, the instructional method must encourage physicians to reflect upon their own lives in relationship to the topic. The topic of geriatrics, for example, emphasizes many issues that every student will face, through the aging of parents and themselves. Substance abuse, end-of-life, and other topics often elicit strong emotions within students, as physicians remember past experiences or recognize ongoing struggles within their own lives. Teachers must create environments that are safe enough to foster trust and intimacy, and yet challenge physicians to reflect upon their own experience of life, as they develop a basic level of mastery in these special topic areas.

"CME really is about changing behavior through education-about doing something different, doing it better." The bottom line of CME in the past has been the activities we produced-how many, how much they cost, how many people came. In essence, CME was more activity-oriented than learner-oriented. "Not only do you have to focus on the learner," "you have to focus on the learner in the context in which they are learning, which is the healthcare environment where they practice medicine." The aim of the proposal is to 'to provide leadership in the delivery of high quality education, for the primary care team, in the context of a caring and vibrant academic environment'

Appendix

QUESTIONNAIRE: CME FOR DENTISTS AND DENTAL ASSISTANT

Please rate each skill below:

d) In order of importance for you to acquire or possess. (1 = least important to 5 = most important)
e) By rating your own current level of performance. (1 = basic to 5 = highly skilled)
f) Recommend CME activity on level of priority (1 = least to 5 = highest priority)

Topics	Rating of importance	Knowledge level	Recommended CME
I- Infection Control			
II- The Patient Management Skills			
1. Interviewing skills			
2. Medical History			
3. Management of Medically Compromised patients			
4. Oral Examination			
5. Diagnosis & Treatment Planning			
6. Dental Radiographs & interpretation			
III-Preventive Dentistry			
IV- Restorative & Aesthetic Dentistry			
1. Amalgams			
3. Composites			
4. Glass Ionomers			
5. Veneers			
6. Bleaching			
V- Endodontics			
1. Anteriors			
2. Posteriors			
VI-Pedodontics.			
VII-Periodontics.			
VIII- Prosthodontics			
1. crowns			
2. bridges			
3. complete dentures			
4. partial dentures			
IX-Oral Surgery			
X-Implantology i. Surgical ii. Prosthetic			
XI- Health Promotional Activities & Oral Health Education			

Appendix (continued)

Any other skills or topic you feel are important for your academic development:

FORMAT OF CME

In order of preference rate the below activities from 1 to 5
1 being least appropriate, 5 most appropriate

Timing of the CME	Rating
1. Weekly at night	
2. Half day in the weekend on weekly basis	
3. Bi-weekly	
4. Monthly	
5. Once yearly (Conference)	
6. Others	

Type of activities	Rating
7. Classic lectures	
8. Workshops	
9. Hand on Training	
10. Conferences	
11. Journal Club	
12. Others	

Self Study	Rating
13. Videotapes	
14. Monographs	
15. Journals	
16. Internet	
17. CD	
18. Others	

Personal Information (optional)

Name _____

Degree _____

E-mail _____

Work place _____

Are you willing to help in the teaching process of the CME