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Continuing medical education Global health, global learning

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This is the second in a series of seven articles looking at international trends and forces in doctors' continuing professional development

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CME—continuing medical education—has become an international discipline. Defined as any and all ways by which doctors learn after the formal completion of their training,¹ CME is being shaped by several forces. Foremost among these are the globalisation of health²; cross disciplinary movements such as evidence based medicine; common trends in medical education and the assessment of professional competence; and the impact on health care and professional education of the identification of the determinants of health.^{3,4} Add to these electronic mail and the internet allowing instant global communication and virtually unlimited access to medical information and it is not hard to see why CME has become an international concern.⁵ This paper reviews the main published work on CME, identifies major themes in its development, and points to ways that may help standardise and support the provision of CME internationally.

Methods

To gather information for this article, I searched the Research and Development Resource Base in CME extensively for articles (published 1986-96) that describe CME activities worldwide, excluding North America and the United Kingdom.⁶ At the time this article was written, it contained references to over 7000 articles and monographs devoted to continuing health professional education. I also searched Medline, ERIC, EMBASE, and other databases for articles (published 1986-96), using terms and phrases such as world health, global health, international cooperation, and international educational exchange and continuing medical education terms combined with geographical names. Then I circulated the results of the literature searches and a brief questionnaire to key informants in the field, to identify other articles and to add their opinions about forces for and trends in continuing medical education.

Summary points

Health is a global issue; hence continuing medical education is an integral phenomenon

International CME is more than conferences and courses—it includes projects in needs assessment, a wide variety of formats and strategies, and evaluation of doctors' performance and health care outcomes

Its delivery and organisation can be altered by social, political or financial, professional, technological, and educational forces

Trends include changing content to meet societal, demographic, and cost effectiveness demands; relicensure, recertification, and mandatory CME; and the emphasis on learner centred methods and new educational technologies, especially those linked with practice or patients' data

Providers of CME are trying to increase the professionalisation of this "discipline" and to share findings about doctors' learning world wide

CME may be seen as an essential "effector arm" in complex healthcare systems, whether in developed or developing countries

Results

I found 68 articles that met these criteria (table).⁷⁻⁷⁴ Fourteen focused on determining the learning needs and patterns of clinicians^{7-18 73 74}; 22 articles described in general terms an intervention such as a CME teleconference, programme, or course^{19-39 72}; 12 evaluated the effect of the CME intervention on doctors' competence or performance or change in health care outcomes⁴⁰⁻⁵¹; and 20 studies provided an overview of the structure, role, or trends concerning

CME within the region or country of origin of the article.⁵²⁻⁷¹ The last section has been enhanced by the addition of comments from key informants in selected countries.

Surveys of needs

The studies of needs assessment used tools such as surveys or focus groups to determine knowledge and practice gaps in potential learners. Needs have been analysed by multifocused surveys of rural practitioners in Australia^{8, 11} and by broad, topic specific studies in Germany in psychogeriatrics⁹ and in Egypt in HIV and AIDS.¹³ Beyond standard surveys of needs, educators in Sri Lanka have used Delphi techniques to help practitioners evaluate their own clinical skills.¹⁶

Interventions

While the formal conference or short course remains the staple of organised CME in both developed and developing nations, a variety of alternative educational formats and interventions have been described. Skills training has been studied in the Caribbean in advanced trauma life support¹⁰ and in Japan¹⁷ and in Italy¹⁹ in laparoscopic surgery. Innovative educational delivery techniques were exemplified by interprofessional educational experiences in Bulgaria,⁴¹ problem based learning in Sweden,²³ self instructional programs in China,²⁵ and small group learning in Ireland.²⁸ Learning contracts for continuing education in radiology have been used in the Urals in Russia (V Sharov, personal communication). Providing potential links for distance education and patient care, teleradiology and telemedicine have been extensively reported, reflecting the issue of geographic isolation in the Middle East²⁴ and in other developing countries²¹; and patient education programmes as a component of CME initiatives have enjoyed some success in Germany.^{19, 26, 44}



Studies of international continuing medical education

Region	Type of study			
	Surveys, needs assessments (n=14)	Description of activity or intervention (n=21)	Evaluation of outcomes (n=12)	Overview or trends (n=20)
Africa (n=5)	1	3		1
Asia (n=6)	3	2		1
Australia/New Zealand (n=7)	3	1		3
Caribbean (n=1)			1	
Central Europe (n=26)	4	6	4	12
Central and South America (n=2)			2	
Eastern Europe (n=2)		1	1	
Scandinavia (n=5)		1	4	
Transnational (n=13)	3	7		3

Shaped by the twin challenges of doctors' remoteness from medical information and the opportunities which new technologies present, Monash University in Australia has developed a trial project using the internet to link isolated doctors to university resources.⁷² This project has more clearly defined both academic and non-academic (technical and logistical) issues and has developed a model which includes user training, technical support, the role of the internet service, and appropriate categorisation and configuration of healthcare information.

Among interventions that were explicitly international and exemplified collaborative efforts were the Wellcome Tropical Institute's attempt to deliver problem based learning materials to rural practitioners in Ghana, Kenya, and Pakistan²¹; telemedicine projects linking the United States, United Arab Emirates, and Saudi Arabia²⁴; the intervention by Project HOPE (an American non-government organisation) in neonatal education in the Chinese province of Zhejiang²⁵; and a multicountry satellite television project described as the TransMed experience.³⁸

One example of an international network was an international clinical epidemiology programme designed to build clinical epidemiology expertise and infrastructure in countries by developing clinical epidemiology units in medical schools.⁷³ By means of on-site learning at host universities and distance learning by email and visiting teachers, the programme uses clinical epidemiology, biostatistics, health economics, health services research, and other methods to develop rational approaches to health care and clinical decision making.

The Center for Public Service Communications for the US National Aeronautics and Space Administration has surveyed telemedicine projects and interests on a global basis.⁷⁴ The survey highlights projects in Europe, Japan, the United Arab Emirates, and Australia, as well as Canada and the United States.

Evaluation

Twelve papers described extensive attempts to evaluate CME activities at the level of doctors' performance or healthcare outcomes. They are reported in Mexico,⁴⁵ Italy,⁴⁹ Latin America,⁴² Israel,⁴³ Denmark,⁴⁶ Sweden,^{48, 50} Tanzania,³⁶ and Nigeria.³⁷ One study of particular interest is of patient outcomes relative to suicide in the Swedish island of Gotland.⁵⁰ Recognising suicide as the "most complete treatment failure" in the recognition and management of depression, investigators

Forces for and trends in continuing education on a global basis

Forces	Trends
Social and demographic	Changing content of CME Decentralisation of CME
Governmental (financial; public accountability)	Content of CME driven by evidence based principles "Managed care" CME Obligatory or mandatory CME Recertification
Medical professional (evidence based movement; availability and importance of data on patients; incorporation of principles of adult education; doctors' barriers to learning (time, funding))	Evaluation of effectiveness of CME Linkage to doctor's performance and healthcare outcomes Quality assurance methods Multiple modalities in CME diversity
Enhancement of CME provision	Studies of CME provision or intervention Establishment of policies and standards in CME Research emphasis Skills development for CME providers
Educational (incorporation of principles of adult educational in CME and in undergraduate education)	Problem based learning, small groups, self directed methods
Technological	Enhanced distance learning capacity (eg, provision by satellite television) Computer assisted technologies (CD ROM, etc) Linkage to patient care, both distant (teleradiology, etc) and local (computer generated reminder systems, etc)

introduced a comprehensive educational programme for all general practitioners on the island. Lectures, printed materials, and video case presentation on the prevention, diagnosis, and treatment of depression, especially in geriatrics, were followed up with lectures and group discussions using case reports, focusing especially on childhood and adolescence. Reaching 90% of the island's general practitioners (the remainder received programme materials), this comprehensive, community based programme achieved its goal: the proper identification and treatment of depression by general practitioners, and (at one of the subsequent annual assessments) a significant decrease in the suicide rate in Gotland compared with Sweden as a whole.

Forces and trends in CME

What forces operate to effect change in CME in the future? What future directions might we expect CME to take as a result of these forces? Answers to these questions form the fourth part of the findings of this article, derived from articles that focused on the role or direction of CME within countries or across regions,⁵²⁻⁷² complemented by the views of the key opinion leaders canvassed. Here, forces for change and their consequences are numerous and often overlap, since many trends or directions are multicausal.

Many social forces such as changing demographics and lifestyle have an impact on the content of CME—for example, increasing its emphasis on geriatrics and disease prevention. The increasing number of practitioners in rural or isolated settings, along with change in educational technologies, has led to a decentralisation of CME. With tighter governmental financing of health care in both developed and developing nations, cost efficiency is emphasised,

rather than broader, more conceptual learning. Interlocking pressures from social, political, and regulatory sources have given rise to recertification, relicensure, and mandatory CME.

The issue of mandatory or obligatory CME itself, requiring physicians to attend a fixed number of hours of educational sessions, has generated some debate.⁷⁵ Although the movement seems to have gathered momentum in Europe,⁵⁷ much of this kind of learning is not effective⁷⁶ and doctors are dissatisfied with a regulatory approach (particularly well documented in Switzerland⁶²⁻⁷⁰). As a result, more sophisticated programmes and learner centred programmes have emerged, such as the maintenance of professionals standards programme of the Royal Australasian College of Physicians.⁷¹

A cluster of forces have been identified in the profession of medicine itself, including the barriers that keep doctors from participating in CME, the growth in appreciation of the principles of adult learning at undergraduate and CME levels, the availability of data on patients, and evidence based medicine. These forces seem to have produced an increased awareness of the doctor as learner and the need for multiple modalities of CME interventions, and have given rise to studies of the impact of continuing medical education on doctors' performance and on healthcare outcomes. Many of these modalities are now much more linked to practice and data, such as computer generated reminder systems, or are practice based, such as small group learning experiences. A few articles touched on what may be termed the maturation or professionalisation of CME itself, studying its problems and practices⁵⁷ and the development of policies on commercial funding.⁵³ Technological forces for change include the

advent of computer based learning methods, such as material available on CD ROM; access to the medical literature and information on the internet; and distance learning, either solely educational (satellite television, for example) or primarily oriented to patient care, but with potential for CME (such as teleradiology).

Discussion

This paper does not contain every article published on CME globally—my search covered only English language articles published between 1986 and 1996. The categories used here are not mutually exclusive; some articles touch on several areas.

Even so, the articles retrieved show, both across and within nations, a variety of types and efforts and point to the breadth, scope, and impact of CME interventions and to their basis in patient care and learners' needs. It also seems that CME can be applied to problems of health services delivery and healthcare outcomes to good effect: the Swedish study of suicide rates⁵⁰ is a good example of the importance of the part that well crafted CME programmes may play in the delivery of health care. Given that healthcare delivery in any country, developed or developing, is an example of a complex, adaptive system, it is clear that CME may play an important "effector arm" role within it (R Woollard, J C Leist, personal communications).

There seems to be a movement to develop conjoint, transnational CME activities and projects. This movement parallels efforts to increase the professionalisation of CME providers by establishing clear accreditation guidelines, articulating policies on ethical delivery of CME, and determining and promoting the competencies of the CME provider. This in turn is mirrored by movements in professional organisations—those represented by national medical associations or transnational organisations devoted to medical education—to include CME on their agendas. Among such attempts, increasing over the past decade, have been meetings sponsored by the UK-Nordic Medical Educational Trust, the Norwegian Medical Association, the European Academy of Medical Training, and the Royal College of Physicians in England. These meetings have addressed topics of increasing sophistication in CME and doctors' learning and have explored questions of the organisation and value of CME, its evaluation, and the conceptual base for CME, adult learning theory. In addition, North American organisations, notably the Alliance for CME and the American Medical Association, have been instrumental in bringing together CME providers and others interested in CME from across the world to share experiences—doctors and educators learning about learning. Finally, there have been transnational studies of the organisation of CME, such as the CME in Europe Project conducted by the World Federation for Medical Education,⁷⁷ which act to fortify the movement to study CME.

Some common features seem to be shaping the future agenda of CME providers on an international scale. These include changes in undergraduate education; the role of professional and governmental regulations in response to the question of accountability; new understandings of the effectiveness, modes of delivery, and technologies of CME; and a growing understanding of the shape and regulation of CME itself.

Education organisations concerned with CME

UK-Nordic Medical Educational Trust
Norwegian Medical Association
European Academy of Medical Training
Royal College of Physicians [England]
Alliance for CME [United States]
American Medical Association
World Federation for Medical Education

Conclusions

Much has been learned about continuing medical education across and within countries, and much more can be learned by sharing findings and directions on an international level. The challenges and impediments to such a movement are numerous—including different languages, variations in training and culture, and disparity in economic and healthcare delivery realities—but the opportunities are even more so. These opportunities include the use of the internet as a learning and communication tool, the establishment of common principles of CME, and others that may be shaped by the shared goal (just as in the case of infectious disease) of improving health care on a global level. The ingredients for such a movement exist—individuals, motivation, and projects—and form the basis at least for an ongoing dialogue and at best for a shared vision of improving global population health by means of an interlinked, mutually informing, and supportive CME system.

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One hundred years ago Special correspondence: Paris

A cycle race would seem to be regarded by French journalists as almost as dangerous as a campaign. At a forthcoming race among journalists no fewer than five medical men will be in attendance at different parts of the route. There will also be

eighteen nurses, male and female, prepared to cycle to the spot where any accident may occur. A motor car for the benefit of the wounded will be run by the Secretary of the Société des Secouristes Français. (*BMJ* 1898;ii:205)