Original Scientific Paper

Taking a closer look at Web-based CME:

An exploratory study

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ABSTRACT

Our research aim was to establish the views of key general practice informants about Web-based CME and how it could be made more attractive for general practitioners.

A semi-structured, open-ended script was designed and piloted. Purposive sampling was used. Potential respondents involved in providing CME were identified. Recruitment continued until theme saturation was reached after the sixth interview. One potential respondent refused to participate. Interview transcripts were analysed for emerging themes using grounded theory. These were refined through ongoing discussions between researchers.

Themes fell under three headings: (a) the 'Individual professional', (b) 'Social issues' and (c) 'Information technology'. For each main theme, there were sub-themes.

Continued positive attention to the major themes and sub-themes we found will improve the likelihood that future Web-based CME sites will be more attractive and more likely to meet general practitioners' needs. In particular more attention needs to be paid to increasing general practitioner awareness of Web-based CME and to improving its funding.

Keywords

Continuing medical education, general practice, marketing, Web, Internet

(NZFP 2008; 35: 96–100)

Introduction

In New Zealand, general practices have almost a 100% rate of computerisation, and most general practitioners are skilled in information technology (IT).[1] General practitioners are increasingly using the Internet as a source of information. This can be problematic because the reliability of information on the Web is often unclear. Research suggests that general practitioners' greatest barrier to obtaining CME is time.[2,3]

Although anecdotal evidence suggests it is not yet well used in New Zealand, Web-based CME offered by credible evidence-based providers gives a convenient and interactive alternative to face-to-face CME, accessible at any time and any place.[4]

There has been exponential growth in Web-based CME in the United States. During 2003 Web-based CME offerings increased over 700% and the number of general practitioners receiving Web-based CME credits increased 1400%. It has been suggested that Web-based CME is effective in facilitating knowledge transfer and behaviour change that are equal if not superior to traditional CME.[5]

In Australia, the development of Web-based CME programmes like TeleQACE is contributing towards the professional developments of health professionals.[6]

Our research aim was to establish the views of key general practice in-

formants about Web-based CME and how it could be made more attractive for general practitioners.

Methodology

Purposive sampling was used to identify key informants directly involved with or having an influence over CME provision (both face-to-face and Web-based CME) who were information-rich. Potential respondents involved in providing CME were identified. Recruitment continued until theme saturation was reached after the sixth interview. One potential respondent refused to participate. All respondents were Auckland-based because of the financial constraints of summer studentships.

The interviewees' (three males and three females) occupation and health background are shown in Table 1.

Table 1

Interviewee No.	Occupation	Background
1.	GP Liaison	General practice
2.	Clinical Director	General practice
3.	CME Coordinator	General practice
4.	Practice Education Manager	Pharmacy
5.	General Manager	Nursing
6.	Education Committee in PHO	General practice

Face-to-face interviews were conducted with five respondents and a telephone interview with one. Interviews generally lasted 30 minutes.

The semi-structured, open-ended script was designed by the authors and piloted on a general practitioner member of staff at The University of Auckland. The script included prompts soliciting the key informants' knowledge of and views about Web-based CME, together with prompts soliciting their views about barriers to its use and how they could be overcome. During interviews, the researcher was free to ask additional questions to clarify answers or follow leads, and to respond to issues or questions raised by the interviewee. The script was constantly reviewed and refined as the interviews progressed. Interviews were recorded and transcribed manually.

Data analysis was done using grounded theory with an inductive approach to generate a theoretical framework. Transcripts were analysed for emerging themes or categories and coded to mark example sections. Analysis triangulation occurred by having two researchers code the transcripts and reflect on and compare their notes. Systematic data analysis was used where sub-themes were identified and connected. These were then refined to major themes through ongoing discussions between researchers.

The study was approved by the University of Auckland Human Participants Ethics Committee, Reference Number 2006/400.

Results

Thematic analysis

Themes naturally fell under three headings: (a) 'Individual professional', (b) 'Social issues' and (c) 'Information technology'. For each main theme there were sub-themes.

(a) 'Individual professional'

The sub-themes under *'Individual professional'* include *Time perception*, *Educational needs*, *Motivation*, and *Learning preferences*. Overlapping themes with *'Social issues'* were *Awareness of Web-based CME* and *Marketing*; and overlapping themes with *'Information technology'* were *Maintenance of Professional Standards (MOPS)* and *IT skills*.

Time perception

Respondents' replies indicated that professionals want a balanced life. For some it could seem impossible to find time to access Web-based CME. Comments included that GPs should spend more time to generate enough income to support their lifestyle instead of spending too much time on their educational needs.

'You might be pretty tired for a day's work and might have a lot of things, having to do all my patients' notes, ringing people up about things, looking at all my patients' results, doing the insurance reports, ACC reports. By the time, I have done all that, then I am not going to be feeling too much like going off to a CME site working my way through a few modules. I will want to put my feet up and listen to some music, read a book, watch TV or something. I think that's a powerful barrier.'

Educational needs

Overwhelmingly, there was a general consensus that CME is essential to fulfil the educational needs and bridge the knowledge gap of GPs, especially with the diversity involved in general practice. Web-based CME was viewed as an attractive option for meeting individual learning needs and surviving in this rapidly changing world.

'To survive, you know, professionally, commercially, intellectually, and to have a satisfying career.'

'Individual GPs' knowledge varies, a lot in certain areas and not a lot in the other. So, it's the CME challenge to try and identify that. That's a hole I have, can I talk to someone that has a lot in that area. So, we can talk to each other and back and forth.'

Motivation and Maintenance of Professional Standards points

Two distinguishable types of motivation were identified from our study, namely internal and external. Internal motivation comprises of the 'need' to know and to be kept up-to-date.

'If you are presented with a clinical issue that you aren't sure on what to do. Then, it's a strong incentive to learn about something.'

External motivation consists of obtaining MOPS points and the need to satisfy the Health Practitioners Competence Assurance Act 2003. Two differing views emerged about external motivation, with one respondent stating that it was the main reason for CME whereas another disagreed.

'It's the only reason of them coming. Half of them, it would be the major reason. They have to do it to stay registered.'

'I don't think it's a big motivating factor for most doctors because they are already getting plenty of MOPS points.'

Learning preferences

Our findings showed that some professionals preferred interactive learning in person, or collegiality/ability to discuss with peers, while others preferred traditional printed material compared with reading off a screen.

'I think just, whether people like that style, and probably as we get older, using a screen as a tool, you can't have a large amount of information on the screen, probably, there's still a desire to print off materials.'

'Sometimes I think some of the doctors might like the collegial discussion that goes on at CME. Cause invariably, one of them comes up with an issue. It's something somebody else has also experienced. And sharing that information can be quite useful for them. Even if that just means that I'm not the only one that has the problem.'

All respondents agreed that the Internet is... very useful in satisfying the increasing and complex information needs of doctors

Awareness of Web-based CME sites

The study found little awareness of Web-based CME in New Zealand and it is perceived to be underutilised.

'I don't think many people would think about it or even use it.'

'I suspect it's under popular, should be more popular. It's a resource that's underutilised currently. That's my impression.'

Marketing

Respondents felt that New Zealand Web-based CME should be better marketed.

'The same people who are driven by curiosity or need to be clinically current, who now go on to use the Internet. What we need to do is to broaden the curiosity within the health professions so that, that becomes part of our culture.'

'I support the use of the monthly newsletter, email newsletter. That's the best way to encourage people to access it. Simple, doesn't have to be complicated, you know, some simple things with a brief summary of the topic, little titbit from it, tantalising things.'

(b) 'Social issues'

The sub-themes under *'Social issues'* contain other means of CME. Overlapping themes with *'Information technology'* were *Funding* and *Credibility*.

Other means of CME

Respondents stated that current common means of CME involved peer-review group meetings through Primary Health Organisations or other CME providers; reading journals; joining large or small group meetings; and attending conferences. Videos, DVDs and other media are used at times.

Funding non-specific

The study revealed that there was no specific funding for continuing education of GPs. Funding comes from a portion of the management fees of PHOs, or from sponsorship by pharmaceutical companies. Respondents added that it was not viable for GPs to pay to access CME, as required by some overseas Web-based CME sites.

'Yes, I am saying the pharmaceutical companies provide the funds for the provision of CME. As long as the content is independent of the sponsor, then, I am happy with that. I think we faced the reality that we have to get money from somewhere.'

'...to initially go and pay for something, that might be a tough task. They are so used to being able to get their CME education, pretty much, on tap here. All they have to do is to come from their practices, which are not that very far away. They get something to eat, something to drink and they, you know, discuss.'

Credibility

Respondents emphasised the credibility of the information, *'Evidence-based is the word'* said one respondent. They expressed a need to know the authority behind the information and that they can be confident that it is reliable. For example, an association with a university or the Royal New Zealand College of General Practitioners is seen to be trustworthy.

'I guess the other thing, potential barriers are, whatever potential tool that you are using have clinical credibility. It probably has to be non-biased, have some sense of authority like the NZ Guidelines Group, you know, or a university or a credible organisation, like the College.'

(c) 'Information technology'

The sub-themes under *'Information technology'* comprise technical issues and website design and content.

Technical issues

Respondents agreed that to be able to use Web-based CME, one must have access to a computer with an efficient Internet connection and have basic computer and Internet skills. According to our replies, most GPs around the Auckland Region have computers with an Internet connection, both at their surgeries and at home, while GPs' IT skills varied but were sufficient.

'It needs to be on the 'go', like picking up the phone and it's going, no fiddling.'

One respondent stated GPs need to be encouraged or trained/guided at least for the first time to enable them to use this technology.

'It is helpful to have a colleague demonstrate or show you how this all works as once you are familiar and shown the value of using this Web-based CME, it is easier to carry on and do it yourself.'

Another respondent expressed the view that there would be a natural progression as time goes by and GPs might not need to be pushed too much to use the Internet more.

'I think more and more people are becoming familiar with using the Internet for finding answers to things, so I would think it's a natural evolution and will come without having to be forced too much.'

Website content and design

All respondents agreed that the Internet is a sea of information and very useful in satisfying the increasing and complex information needs of doctors. They noted that relevance was an important part of CME. The content for Web-based CME needed to be relevant to the day-to-day role in medical practice for GPs; relevant to NZ itself; and/or even their own interest areas.

'There's a lot of CME where the cardiologist is telling them the latest top stent, this kind of stent, this kind of stent...they just want to know if the heart is good enough to operate on...They don't want to know if this kind of stent, this kind of mesh, this kind of metal. You know, interesting... but not relevant."

Respondents agreed that Web-based CME should be flexible and individualised, providing the users with the ability to adapt a programme to meet their own needs, choosing the topic and pace of the programme. However, one respondent stated:

'But we don't actually know what we don't know. So, there's always this problem where we don't have recognition of the areas that we have a big gap as compared to sitting in a lecture, where you get exposed to materials that you didn't know didn't know.'

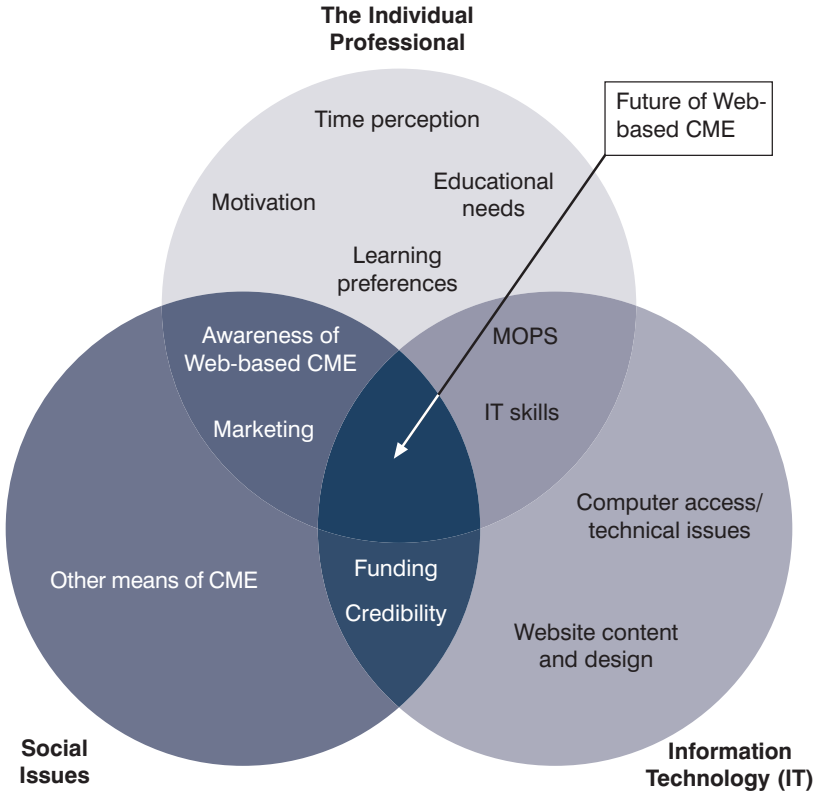
Our study found that self-assessment is required, preferably in the form of an interactive quiz. Review is needed to evaluate their understanding on the subject and bridge any knowledge gaps identified. GPs can easily refer back to consolidate the information learnt.

'Interactive Quiz, need to know if they have done it...It will be really good, if you can ask questions that are a bit delayed. They have a little review before they answer it. This is my education area that I am very interested in. To get your CME, instead of just drinking coffee, or watching it and quickly answering it there and there. To get your points, you have your summary quiz the next day or next week with a little review if you need it.'

'It needs some repetition, to get into your long-term memory...Easy to refer back or follow-up, something like that...My understanding, you need have something very interesting or a lot of repetition to get into your long-term memory.'

Respondents said that Web-based CME should be interesting and practical. *'GPs are practical people'*, they prefer actual examples, instead of just didactic lectures. Hence, respondents expressed: *'But to actually see something happening, just little snippets of things of reality. GPs are practical people.'*

Figure 1



Discussion

Our qualitative interviews with information-rich key informants directly involved with or having an influence over CME provision uncovered three major themes and 13 sub-themes. Seven sub-themes are not exclusive to any particular major theme(s), as shown in the Venn diagram – Figure 1.

The sub-theme, *Future of Web-based CME* represents the overlap of the three major themes. Positive attention to the major themes and sub-themes we found will improve the likelihood that Web-based CME sites will become more attractive to general practitioners and more likely to meet their needs.

It is possible to view those sub-themes that belong exclusively to

one major theme as not requiring as much future attention by Web-based CME providers as do some of the sub-themes that belong to an overlapping zone between two major themes. This may be because development of existing Web-based CME sites has been led by people with either an interest in *'Information technology'*, or in general practice *'Social issues'* or in the *'Individual professional'*. Developers have dealt first with core issues which belong to their interest. Consequently *Other means of CME* are well-developed in New Zealand, *Website content and design* is a focus of all existing credible Web-based CME sites (e.g. the Goodfellow Club website at www.goodfellowclub.org and bpacnz interactive CME quizzes at www.bpac.org.nz/Public/home.asp), and PHO peer groups and other face-to-face CME providers (e.g. the RNZCGP Annual Conference and the Annual Goodfellow Symposium) pay attention to *'Individual professional'* issues such as *Time perception*, *Motivation*, *Educational needs* and *Learning preferences*.

Overlapping issues that need attention are general practitioner awareness of Web-based CME which will require better marketing of the sites by providers and other organisations with an interest in promoting this modality, and improved funding to ensure the sustainability of Web-based CME by credible providers with the knowledge that the source is reliable and evidence-based[6,7] especially now that there is a vast amount of information on the Internet.

Aggressive marketing

Our respondents suggested ways to increase awareness of Web-based CME are through Primary Health Organisations' newsletters, District Health Boards' notice boards, saving the Web address as 'favourites' on GPs' computers and having a free trial version (if required to pay). Email or paper-based prompting is needed whenever a new CME module is available.

Funding

There is no specific funding for continuing education of primary care professionals and there is a general feeling that GPs are unwilling to pay for Web-based CME. Different funding solutions need to be found, such as sponsorship and advertising. Web-based CME is expensive to maintain because the content needs to be updated and relevant at all times.

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Future of Web-based CME

Will Web-based CME be a primary or supplementary source of CME in the future? Two different views emerged with one stating that it will never replace meetings or other face-to-face methods, whereas the other is that it might be the way to obtain CME in the future.

It is possible for Web-based CME to complement and reinforce traditional medical teaching; in other words, it is not an either/or situation.[8] Recent developments in the Goodfellow Unit have explored this model using electronic learning objects (e.g. a CD teaching spirometry skills) to provide pre-face-to-face workshop reading and reflection, followed by the workshop, and retaining the CD for post-workshop revision.

Limitations

Our study is an exploratory study to indicate issues that need to be considered and to signal directions for future study. Further interviews with 'grassroots' GPs may uncover additional themes and alter their weighting, as would a quantitative survey of GPs to explore the theoretical concept described.

Acknowledgement

We would like to extend our appreciation to the Medical Council of New Zealand for funding this summer studentship. We are also grateful to our key informants, who willingly provided their time to make this studentship a success.

Competing interests

Vincent Chong has no competing interest. Cherry Hsu and Ross McCormick work with the Goodfellow Unit which operates the Web-based CME Goodfellow Club site.

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