

The continuing medical education activities and attitudes of Australian doctors working in different clinical specialties and practice locations

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Abstract

Background: Currently, it is not clear which continuing medical education (CME) methods are being used by senior doctors and what their attitudes towards them are. The aims of this study were to investigate which modes of CME delivery senior Australian doctors utilise, to assess doctors' attitudes towards CME and to determine any differences in modes used and attitudes between clinical specialties and practice locations.

Methods: A 52-statement questionnaire enquiring about doctors' current CME activities and their attitudes towards CME was distributed to 1336 senior Australian doctors.

Results: 494 doctors responded to the questionnaire. Traditional forms of CME (eg, meetings, conferences, journals and lectures) were most commonly used. Doctors thought CME involving face-to-face interaction was superior to electronic forms of CME. All doctors, especially those in hospital practice, had a positive attitude towards CME but found lack of time a barrier to learning. Rural doctors found CME sessions more difficult to attend than did their metropolitan colleagues.

Conclusions: Traditional forms of CME were more popular than modern CME approaches, such as e-learning. Australian doctors had a positive attitude towards undertaking CME despite struggling to find time to perform CME. The differences in attitudes towards CME demonstrated between specialties and different practice location will aid future CME planning.

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What is known about the topic?

Reinforcing methods of continuing medical education (CME) such as interactive educational meetings lead to CME success. However, much CME still consists of less effective strategies such as conferences and didactic lectures. There is limited information available about the current CME activities and attitudes of senior doctors, in different specialties and practice locations.

What does this paper add?

This paper gives the first detailed picture of the modes of CME performed by senior Australian doctors as well as their attitudes towards these activities. Traditional forms of CME (lectures, conferences and journal reading) were the most common forms of CME performed. More modern, technology-dependent forms of CME were less commonly used and not believed by respondents to be the best mode of delivery. All doctors found lack of time a barrier to performing CME. Rural doctors found CME more difficult to attend than their metropolitan colleagues. Overall, there was a reassuringly positive attitude to undertaking CME across all specialties and practice locations.

What are the implications for practitioners?

Lectures should be less of a focus for CME delivery. More emphasis on challenging, sequenced CME activities would be beneficial. CME should be made more accessible to rural doctors, using innovative measures such as adequate locum cover and accessible and flexible CME via distance learning. Electronic delivery of CME could reach the vast majority of doctors, but high quality, appropriate content is paramount. Providing dedicated time for doctors to attend CME is required.

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THE AMOUNT OF biomedical knowledge available doubles every 20 years. Therefore, a doctor's practice could become rapidly outdated without activities allowing a clinician's knowledge and skills to remain current.¹ Continuing medical education (CME) is the mechanism by which doctors keep their practice up-to-date and is defined as "any and all the ways by which doctors learn after formal completion of their training".² The primary purpose of CME is to maintain and improve clinical performance.³ CME has been demonstrated to alter clinician performance and, to a lesser extent, health care outcomes.⁴

Previous randomised controlled trials have identified effective CME interventions. Reinforcing methods, visits by physician educators (eg, pharmacists), patient-mediated strategies (eg, patient education material), learning linked to clinical practice, interactive educational meetings, and the presence of opinion leaders have been shown to lead to CME success. CME activities that include peer discussion and role playing also work well. Despite this theoretical knowledge of the most successful forms of CME, the majority of CME activities consist of less effective change strategies such as conferences and didactic lectures.^{4,5}

It is crucial that providers of CME are aware of the methods that doctors from different specialties and practice location find most beneficial to them for successful CME. The majority of CME is based around the paternalistic view that planners and specialists know what is best for doctors. Such views will not allow the development of relevant CME programs meeting the needs of clinicians in the target audiences.⁶ Additionally, there has been little work to show how doctors feel about performing CME and the various modes of CME delivery currently available to them.⁷

There is limited information available in the medical literature on the current CME activities undertaken by senior doctors.⁸ The aims of this study were to assess the current CME activities of senior Australian doctors and their attitudes to CME (eg, motivation to participate, preference for delivery styles and relative importance of CME to clinical activities). Additionally, we aimed to iden-

tify any differences in usage, preference and attitudes to CME between different specialties and geographical locations. An enhanced knowledge of doctors' current CME activities and attitudes to each form of CME may be useful in planning more effective CME in the future.

Methods

The instrument used for this study was a 52-statement survey, although not all responses have been discussed in this study. The survey enquired about several aspects of CME; especially determination of current CME activities and the respondents' attitudes towards CME. An expert in medical education (MHK) was involved in the design of the survey. To ensure the CME questionnaire was understandable and that items related to their intended constructs, it was piloted among 20 doctors, re-drafted and re-piloted several times. All demographic details were requested as closed format questions, except for age and year of qualification from medical school, where an open-format question was used. The majority of the questions enquiring about attitudes to CME used a standard graded response Likert scale: 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree.

Following approval from the local ethics committee, the self-completion CME survey was distributed by post in 2005, together with a covering letter detailing a completion incentive prize-draw for a bottle of malt whisky. Responses were anonymised. The survey was distributed to all the doctors on the mailing list of The Canberra Hospital. The mailing list was composed of: all doctors working at The Canberra Hospital, all doctors referring to The Canberra Hospital and all GPs with responsibility for patients treated at The Canberra Hospital. The survey was thus distributed to a sample of senior, independent medical practitioners who had completed their medical training, that is, hospital consultants and general practitioners (physician/medical doctors who provide primary care), in New South Wales and the Australian Capital Territory. Non-responders were sent a second survey after confirmation of

I Demographics of questionnaire respondents by major clinical specialty

	Overall	General practitioner	Physician	Surgeon
Female:Male (%)	123:355 (25.7:74.3)	97:192 (33.6:66.4)	9:62 (12.7:87.3)	4:54 (6.9:93.1)
Mean age, years (SD)	49.0 (9.4)	48.5 (9.3)	50.9 (8.0)	50.3 (9.2)
Mean years since qualification (SD)	25.3 (9.2)	24.9 (9.3)	26.6 (8.2)	26.8 (9.1)

their contact details. The results were collated by an independent researcher.

The practice locations of respondents were categorised into metropolitan and rural according to the Rural, Remote and Metropolitan Areas (RRMA) classification of remoteness.⁹ There were no doctors practising in remote areas in this study. The results were analysed using SPSS, version 13.0 (SPSS Inc, Chicago, Ill, USA). $P < 0.05$ was regarded as significant.

Results

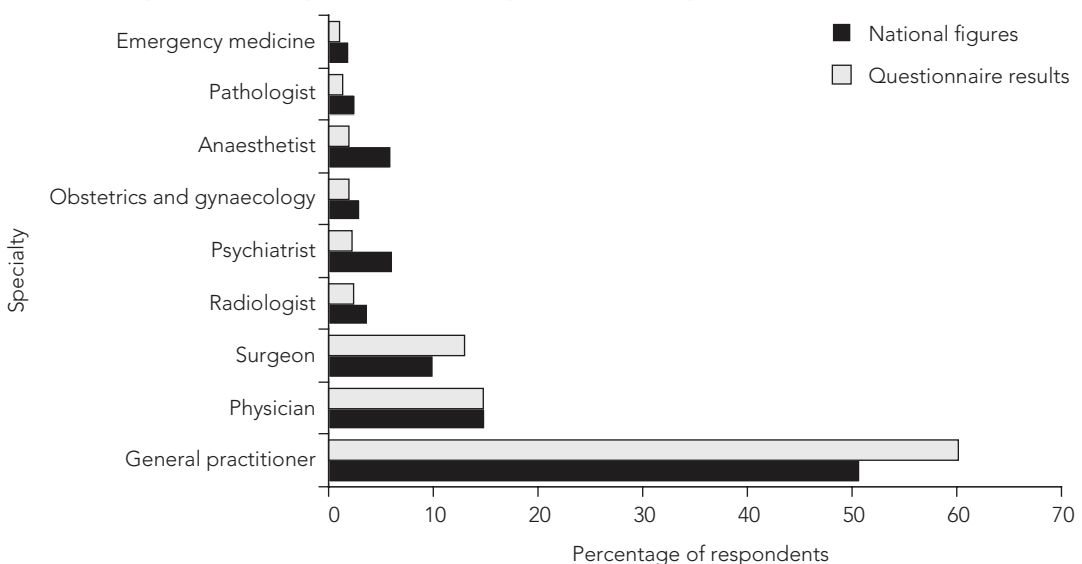
Respondent demographics (Box 1)

The survey was distributed to 1336 doctors, and 494 doctors responded, giving a response rate of 37.0%. A total of 338 (68.4%) respondents

worked in metropolitan areas, 146 (29.6%) in rural practice, and 10 (2.0%) worked in both areas. These figures are compared with the Australian national figures of 79.9% of doctors practising in metropolitan centres, and 20.1% in rural practice.¹⁰ There was a significant difference between the sex ratio of the three main specialty groups (GPs, physicians and surgeons), with a greater proportion of female GPs compared with hospital doctors ($P < 0.0005$, χ^2 test). There were no significant differences in the mean age or mean number of years since qualification between GPs, physicians and surgeons.

Respondent specialty

Box 2 shows the percentage of respondents practising in each medical specialty. The distribution of the specialties of respondents to this survey

2 Medical specialties of questionnaire respondents, compared with Australia as a whole

was similar to the distribution of doctors between medical specialties in Australia as a whole.¹⁰

Mode of CME

Meetings, other forms of face-to-face learning and journal reading were the most common forms of CME undertaken, whereas CDs, CD-ROMs, and other electronic forms of CME were less commonly used (Box 3).

There were some significant differences between male and female doctors (Box 3). Male doctors were significantly more likely to undertake: teaching, audit, CD-ROMs and internet CME. However, there was no significant difference between sexes for using: audio CDs, teleconferencing, literature searches, textbook or journal reading, lectures, workshops, conferences or local meetings.

To determine if there were any age-related CME preferences, respondents were allocated to two age categories: <50 years and >50 years. Box 3 shows the differences in current CME practices between these two age categories. Doctors <50 years were significantly more like to teach, use the internet for CME, use CD-ROMs and read journals. Doctors >50 years were significantly more likely to use audio CDs for CME.

There were some significant differences between the modes of CME used by metropolitan and rural doctors (Box 3). Lectures were less commonly used for CME by rural doctors, as were literature searches and medical journals. However, audio CDs were more often used by rural doctors than clinicians working in metropolitan areas. Although teleconferencing was used by a larger proportion of rural doctors than

3 Continuing medical education (CME) modalities used by respondents

Mode of CME	Percentage of doctors performing	Sex differences (<i>P</i> value)*	Age differences (<i>P</i> value)†	Practice location differences (<i>P</i> value)‡
Local meetings	88.9	0.290	0.561	0.674
Conferences	85.8	0.942	0.503	0.056
Journal reading	79.8	0.596	0.013	0.043
Lectures	74.7	0.349	0.892	0.034
Workshops	73.7	0.662	0.275	(metropolitan higher)
Audit	61.1	0.017	0.057	0.278
Teaching	59.5	(men higher)	0.009	0.287
Reading textbooks	59.5	0.002	(<50 years higher)	0.123
Internet	52.6	0.068	0.097	0.178
Literature searches	40.1	0.007	0.010	0.323
CD-ROMs	32.2	(men higher)	(<50 years higher)	0.001
Teleconference	17.6	0.320	0.637	(metropolitan higher)
Audio CDs	16.2	0.112	0.033	0.384
			(>50 years higher)	0.251
				0.005
				(rural higher)

* Difference in the mode of CME undertaken based on sex. *P* values refer to comparison of male and female doctors (χ^2 test).

† Difference in the mode of CME undertaken based on age. *P* values refer to comparison of doctors aged <50 years or >50 years (χ^2 test). ‡ Modes of CME currently performed by metropolitan doctors compared with rural doctors. *P* values refer to comparison of metropolitan and rural doctors (χ^2 test).

4 Mean Likert score values for questions enquiring about doctors' attitudes towards various aspects of continuing medical education (CME)

Statement	Mean Likert scale score* (95% CI)	Agree/disagree/ equivocal†
I think CME is worthwhile	1.64 (1.57–1.71)	Agree
I enjoy the pleasure of learning something new from CME	1.73 (1.67–1.79)	Agree
The biggest barrier to me performing CME is time	1.88 (1.80–1.96)	Agree
I enjoy CME	1.93 (1.85–2.01)	Agree
I like CME where an expert is brought in to lecture	1.95 (1.89–2.01)	Agree
CME helps me with unfamiliar patient problems	2.15 (2.07–2.22)	Agree
I like reading journals	2.15 (2.08–2.22)	Agree
The best CME is a targeted face-to face-workshop	2.21 (2.13–2.28)	Agree
I do not avoid CME activities because of cost	2.24 (2.15–2.34)	Agree
I take audit seriously	2.25 (2.17–2.32)	Agree
Journal club is a great way to learn	2.37 (2.30–2.44)	Agree
I would rather spend my time doing things other than CME	2.42 (2.34–2.50)	Agree
The biggest barrier to my CME is being relieved from clinical duties	2.51 (2.42–2.61)	Equivocal
I feel forced into CME	2.54 (2.44–2.65)	Equivocal
I only do audit because it is enforced by the college	2.57 (2.48–2.66)	Equivocal
I find I learn best from a lecture	2.59 (2.51–2.66)	Disagree
I think the colleges take CME too seriously	2.62 (2.53–2.71)	Disagree
CME sessions are easy for me to attend	2.65 (2.57–2.73)	Disagree
The best CME is an internet search on patient care issues	2.81 (2.73–2.88)	Disagree
I fear a lawsuit if I do not undertake CME	2.92 (2.84–3.00)	Disagree
CD-ROMs that I can pace myself through are the best CME	2.97 (2.90–3.04)	Disagree
I go to conferences for the social content not the CME	3.02 (2.96–3.08)	Disagree
I do not feel I need to undertake CME to maintain competence	3.03 (2.95–3.11)	Disagree
Dinner meetings with an expert speaker are a waste of time	3.08 (2.96–3.10)	Disagree
I think journals are irrelevant to my CME needs	3.08 (3.00–3.15)	Disagree
If there was no pressure to undertake CME I would stop	3.37 (3.29–3.45)	Disagree

* Likert scale: 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree. † Agree, mean Likert score of ≤ 2.5 ; Disagree, mean Likert score of > 2.5 ; Equivocal, 95% CI straddles 2.5.

metropolitan doctors there was no significant difference between these two groups. Fifty-one percent of doctors undertook CME in their spare time, 3.4% solely during their working day and 44.9% in both work and spare time.

Computer ownership and usage

Ninety-four percent of doctors responding to the survey owned a home computer and 99.2% of respondents had access to a computer. There was

no significant difference in the proportion of rural (98.1%) and metropolitan doctors (99.7%) with access to a computer ($P=0.1$, Fisher's exact test). Email, word processing and web searches were carried out by more than 80% of doctors who owned a computer (data not shown).

Attitudes to CME (Box 4)

Doctors generally enjoyed CME, believing it to be worthwhile, enjoyed learning something new,

5 Significantly differing responses of doctors from different specialties to statements of attitude to continuing medical education (CME)

Question	GPs' mean score (95% CI)	Physicians' mean score (95% CI)	Surgeons' mean score (95% CI)	Interdisciplinary differences (ANOVA)
I enjoy CME	2.04 (1.95–2.13)	1.73 (1.59–1.86)	1.87 (1.69–2.04)	$P = 0.005$ (physicians agree more than GPs)
I feel forced into CME	2.40 (2.28–2.52)	3.00 (2.80–3.20)	2.48 (2.25–2.71)	$P < 0.001$ (surgeons and GPs agree more strongly than physicians)
I think CME is worthwhile	1.77 (1.69–1.85)	1.46 (1.33–1.58)	1.55 (1.40–1.70)	$P = 0.002$ (surgeons and physicians agree more strongly than GPs)
If there was no pressure to undertake CME I would stop	3.28 (3.19–3.37)	3.57 (3.44–3.71)	3.43 (3.25–3.62)	$P = 0.04$ (GPs agree more strongly than physicians)
I would rather spend my time doing things other than CME	2.27 (2.18–2.36)	2.61 (2.46–2.77)	2.48 (2.28–2.67)	$P = 0.001$ (GPs agree more strongly than physicians)
CME helps me with unfamiliar patient problems	2.21 (2.12–2.29)	1.87 (1.74–2.00)	2.35 (2.17–2.53)	$P < 0.001$ (physicians agree more strongly than surgeons and GPs)
I think the colleges take CME too seriously	2.45 (2.35–2.54)	2.93 (2.78–3.08)	2.64 (2.44–2.84)	$P < 0.001$ (GPs and surgeons agree more strongly than physicians)
Journal club is a great way to learn	2.55 (2.47–2.63)	2.18 (2.04–2.31)	2.12 (1.97–2.26)	$P < 0.001$ (surgeons and physicians agree more strongly than GPs)
I find I learn best from a lecture	2.50 (2.42–2.59)	2.71 (2.56–2.87)	2.66 (2.5–2.82)	$P = 0.024$ (GPs agree more strongly than physicians)
I like reading journals	2.22 (2.14–2.3)	1.99 (1.86–2.12)	2.14 (1.97–2.31)	$P = 0.014$ (physicians agree more strongly than GPs)
I think journals are irrelevant to my CME needs	3.01 (2.93–3.09)	3.22 (3.09–3.35)	3.03 (2.83–3.23)	$P = 0.023$ (GPs agree more strongly than physicians)
I only do audit because it is enforced by the college	2.28 (2.18–2.37)	2.97 (2.81–3.13)	2.85 (2.67–3.03)	$P < 0.001$ (GPs agree more strongly than surgeons and physicians)
I take audit seriously	2.48 (2.40–2.56)	2.09 (1.93–2.24)	1.98 (1.80–2.15)	$P < 0.001$ (surgeons and physicians agree more strongly than GPs)

would not stop doing it if they were not forced to and did not fear legal action if they were to stop undertaking CME. There was agreement with the statement “The biggest barrier to me performing CME is time” (mean Likert score 1.89).

Doctors responding to the survey thought expert lectures (1.95), reading journals (2.15) and face-to-face workshops (2.20) were good

forms of CME. They did not believe that looking-up facts on the internet (2.82) or CD-ROMs (3.00) were the optimal forms of CME delivery.

Difference in attitude to CME of different medical specialties

The responses of physicians, surgeons and GPs were compared to evaluate any differences in

6 Significantly differing responses of doctors working in different practice locations to statements of attitude to continuing medical education (CME)

Statement	Metropolitan doctors' mean score (95% CI)	Rural doctors' mean score (95% CI)	Rural doctors v metropolitan doctors (<i>t</i> test)
CME sessions are easy for me to attend	2.60 (2.52–2.68)	2.81 (2.68–2.93)	<i>P</i> = 0.004
I think journals are irrelevant to my CME needs	3.11 (3.04–3.18)	2.95 (2.86–3.05)	<i>P</i> = 0.016
The best CME is a targeted face-to-face workshop	2.23 (2.16–2.31)	2.07 (1.95–2.18)	<i>P</i> = 0.018

attitudes to CME between specialties (Box 5). There were not adequate numbers of respondents from the other specialty groups to allow statistical analysis. Physicians found CME more enjoyable than GPs. Hospital doctors believed CME was more worthwhile than did their community-based colleagues. Physicians disagreed most strongly that they were forced into CME, while agreeing most firmly of all specialty groups that CME helped them with unfamiliar patient problems.

GPs found reading medical journals less important to their learning and less enjoyable than physicians. Similarly, hospital doctors thought journal clubs were a better form of CME than GPs. GPs agreed more strongly than hospital doctors that lectures were a good form of CME. Both surgeons and physicians took audit more seriously than GPs and disagreed more strongly that they only performed audit to please the colleges.

Differences in attitudes doctors of rural to CME (Box 6)

Attitudes towards CME were generally similar between doctors practising in rural and metropolitan centres. There were some significant differences in doctors' attitudes between these two practice locations. Rural doctors thought that CME sessions were significantly more difficult to attend than doctors in metropolitan centres. Rural doctors agreed more strongly that face-to-face workshops were good methods of CME delivery and thought journals were less relevant to their CME needs than did metropolitan-based doctors.

Discussion

Every educational event is a multifaceted interaction involving many factors which can influence effectiveness of the event, making research into CME methods complex.¹¹ The results of this study provide a detailed picture of the CME usage, preference and attitudes towards CME of Australian doctors working in different specialties and practice locations. Traditional CME activities such as local meetings, lectures, conferences and journal reading remain the most common forms of CME used. Conversely, modern, technology-dependent forms of CME were less heavily utilised and were not thought to be as useful. There were several differences in attitude to CME between specialties, many of which were intuitive but important to confirm and be aware of for effective CME planning. Rural and metropolitan doctors had similar CME profiles; however, rural doctors found CME sessions significantly more difficult to attend than metropolitan practitioners. Overall, there were very positive attitudes expressed regarding continuing medical education across specialties and practice locations.

This study details the CME activities and attitudes of 494 senior Australian doctors. The practice locations and specialties of responding doctors mirrored those of Australia as a whole. We recognise the potential limitations of the survey used in this study. The low response rate to this survey may have introduced non-reporter bias to the results.¹² The survey was distributed to a sample of senior doctors in NSW and the ACT using The Canberra Hospital's mailing list. This method may have resulted in biased sampling of

the target audience. Additionally, some addresses were invalid and the survey did not reach the intended recipient. These factors were partly responsible for the low response rate in this study despite using recommended strategies to optimise the response rate.¹²

In agreement with previous studies,¹³ traditional forms of CME delivery were the most commonly used learning methods of the senior doctors sampled in this study. The responders also believed that, with the exception of lectures, traditional CME modalities were successful ways of achieving learning goals. Despite the realisation that lectures were not the best forms of CME, they constituted part of the CME activities of 70% of doctors responding to this survey. Lectures, conferences, and short courses are known to: enhance knowledge, skills or attitudes; or predispose clinicians to change. However, didactic lectures alone do not play a significant role in immediately affecting doctors' performance or improving patient health care.^{4,5}

This study identified differences in the CME practices and attitudes of different specialty groups. Physicians found both medical journals and journal clubs more useful to their CME needs than did GPs. The different attitudes to medical journals may be because of the specialist nature of physicians' posts and their need for knowledge of the latest scientific and clinical development in their field. Additionally, hospital doctors took audit more seriously than their GP colleagues, perhaps due to the differing emphasis on this activity between hospital and community medicine. These findings fit in well with the belief that general practice education activities should be based on the work that GPs do.³

Our study results illustrate that rural doctors were able to carry out a similar range of CME activities and had comparable attitudes to their metropolitan colleagues towards CME. However, there were some intuitive differences in the modes of CME practised by rural doctors. There were significantly fewer rural doctors attending lectures than metropolitan doctors. As discussed above, lectures alone are not the optimal method of CME delivery and as such are not a priority

area for reform. Believing journal reading to be less relevant to their CME needs, rural doctors reported a significantly lower rate of journal reading than metropolitan doctors. The lower rate of journal reading by rural doctors is not likely to be a function of lack of availability but of rural doctors' own learning needs assessment. One may have expected rural doctors to use teleconferencing to a significantly greater extent than their metropolitan colleagues; however, this was not the case. It is not possible to determine if this was because the teleconferencing technology was not available or because the desire was not present.

Our findings demonstrated that rural doctors found CME activities significantly more difficult to attend than their metropolitan colleagues. Previous research has shown that the access of rural clinicians to CME is limited due to lack of locum cover, the distance to be travelled, and the time required.¹⁴ The differences identified in modes of CME employed between rural and metropolitan doctors may also be due to access issues, rather than preference. Rural GPs often have to provide hospital medical services provided by specialists in urban settings.¹⁴ As such, a thorough needs assessment is required to assess the CME requirements of individual doctors working in rural areas to individualise CME and provide the optimal learning opportunities for each rural clinician. From a practical education planning standpoint, advanced procedural skills training may be required in addition to a commitment to the provision of accessible and flexible CME via distance learning.¹⁴

Ninety-five percent of responding doctors owned a home computer, compared with only 61% of the general Australian population.¹⁵ Such a high level of computer ownership implies that electronic delivery of CME is feasible. Hybrid computer-mediated courseware (mix of CD-ROM, web documents, videoconferencing) has been shown to increase knowledge and self-reported competency.¹⁶ Access to the Internet at work will facilitate workplace learning where the clinician finds a solution to clinical problems as they arise. Workplace learning allows more rapid

learning with more reliable recall as the lesson originates in everyday experience.¹ Electronic delivery of CME would allow cost-effective, efficient delivery of up-to-date CME to a huge number of doctors and would remove the need for rural doctors to travel to CME sessions. Popular face-to-face workshops could still be delivered by teleconferencing. Many medical journals can be obtained on the Internet. Some forms of CME such as practical courses would still require doctors to travel.

Electronic CME delivery is unlikely to be a panacea. We have demonstrated that among older and female doctors the internet and CD-ROM methods/material, which are common interfaces for e-learning, were unpopular or uncommonly utilised forms of CME compared with traditional CME. It has been established previously that older health professionals require specific additional training to gain the skills and confidence to use computers and the Internet effectively.¹⁷ Previous studies have also shown that Internet use, in general and for CME, was lower among female clinicians compared with their male colleagues; however, this gap appears to be closing.^{18,19} The importance of face-to-face CME events for both professional and personal networking may partly explain why electronic means of CME are not valued as greatly as may have been imagined. Furthermore, there are issues with availability and quality of electronic forms of medical education which may have precipitated the low levels of usage and negative attitudes towards e-learning in our study. It may be necessary to improve the e-learning material currently available. Without clear educational reasons for pursuing e-learning methods and a sound educational pedagogy, multimedia computer-aided learning material could simply become an electronic collection of didactic lectures; a fashionable change in medium with no substantive change in method.^{20,21}

Many of the specialty societies and colleges are now offering structured CME programs. It is encouraging that many of these programs are based around established principles of learning. One such example is The Royal Australian College of General Practitioners QA&CPD pro-

gram.²² This program aims to facilitate learning of enduring value and recognises that activities are more likely to meet this goal if they: are self-directed, meet individual's identified needs, encourage active participation and involve reflection/evaluation of what is learnt. Furthermore, the QA&CPD program has strict criteria and standards for the development of educational modules. Education providers are trained to produce high-quality, effective activities. It is such strategies that will result in successful CME and potentially an improvement in patient outcome.

In conclusion there are several points identified by this study that will guide successful CME.

- Lectures. Should be less of a focus in CME delivery. Indeed, CME in general should not be designed simply around being economic and easy to provide to a large audience.⁶
- Interactive activities. There should be greater emphasis on more successful interactive, challenging, sequenced CME activities. However, such a venture may require a significant change in the CME credit system.⁵
- E-learning. If e-learning is to fulfil its potential, CME providers must ensure they carefully develop a high-quality product that clinicians have confidence in.
- Time. Lack of time was agreed to be the biggest factor preventing CME activities. Finding time for doctors to attend CME activities will always be a challenge. However, it is an area in which novel strategies would probably be welcomed by many senior doctors.
- Rural CME delivery. New methods of delivering medical education to rural doctors may reduce the impact of geographical remoteness on their CME.

Competing interests

The authors declare that they have no competing interests.

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