

Barriers to continuing medical education in Australian prevocational doctors

Sandra L Neate, Andrew W Dent, Tracey J Weiland, Stephen Farish, Brian C Jolly and Brendan Crotty

Abstract

To determine perceived barriers to continuing education for Australian hospital-based prevocational doctors, a cross sectional cohort survey was distributed to medical administrators for secondary redistribution to 2607 prevocational doctors from August 2003 to October 2004. Four hundred and seventy valid questionnaires (18.1%) were returned. Only seven per cent (33/470) did not identify any barriers to continuing education. Barriers identified the most were lack of time (85% [371/437]), clinical commitment (65% [284/437]), resistance from registrars (13% [57/437]) and resistance from consultant staff (10% [44/437]). Other barriers included workload issues (27% [27/98]), teaching program inadequacies (26% [25/98]), lack of protected time for education (17% [17/98]), motivational issues (11% [10/98]) and geographic remoteness (10% [10/98]). Australian graduates (87%) identified lack of time more frequently than international medical graduates (77%) ($P=0.036$). Perceived barriers did not differ significantly between doctors of differing postgraduate years.

Aust Health Rev 2008; 32(2): 292–300

THE EDUCATION AND TRAINING of prevocational doctors have recently undergone extensive review resulting in the Foundation Program based on a national curriculum in the United Kingdom in 2004¹ and the launch of the Australian National Curriculum Framework in 2006.² Barriers to implementation of the Australian framework exist at several levels. In Australia, health is administered federally while hospitals are administered at state and territory levels, creating policy and administrative barriers to

What is known about the topic?

Training and education for prevocational doctors have recently undergone major changes both in the United Kingdom and Australia. Recognised deficiencies in education and training have resulted in structured training programs and assessments. In the United Kingdom a two year Foundation Program based on a national curriculum was commenced in 2004 and the Confederation of Postgraduate Medical Councils launched the Australian National Curriculum Framework for Junior Doctors in 2007. However, little is documented in the literature about the barriers to continuing education for the prevocational doctors for whom these programs have been developed.

What does this paper add?

This paper describes the perceived barriers to continuing education which may impact on the implementation of these programs.

What are the implications for practitioners?

Identified barriers to continuing education, such as lack of time, clinical commitment, and resistance from supervising staff should be considered by educators and administrators responsible for the implementation of educational frameworks for prevocational doctors.

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the delivery of a co-ordinated educational framework. Conflict between health department workforce distribution requirements and educational requirements of prevocational doctors create further barriers.³

Medical education is overseen during different stages of education by differing bodies (medical schools, postgraduate medical councils and specialty colleges), all of which have individual structures and responsibilities, making a cohesive approach to continuing education challenging.³ Although these individual groups have over-arching representative governing bodies, they have traditionally existed with minimal consultation and collaboration, leading to a fragmented approach to education.⁴ Inadequate funding for education, documented by the Australian Government Productivity Commission, represents a significant practical barrier to prevocational education.⁵ Current systems for delivery of education, heavily reliant on the “apprenticeship model”, are recognised as under-resourced, reliant on the goodwill of the educators and unsustainable.⁶

Barriers to continuing medical education (CME) for doctors in specialist training and general practice have been documented.⁷⁻⁹ However little is known about the barriers to education facing prevocational doctors for whom this educational framework is proposed. Gleason gives an Australian junior doctor’s perspective, noting that no published data exist documenting the amount of teaching available.¹⁰ Due to lack of data, Gleason provides experience-based generalisations: junior doctors spend minimal time involved in structured education and learning; teaching is of variable quality and relevance; and junior doctors’ attendance at educational activities is prevented by high workloads, constant interruptions and emphasis on service provision.

The Australian Government Department of Health and Ageing commissioned a Learning Needs Assessment Project, an Australia-wide questionnaire regarding educational issues for hospital-based prevocational doctors. Dent et al reported results related to occupational prepared-

ness and exposure to and desirability of existing and future educational methods.¹¹ This study examined responses from this national questionnaire pertaining to perceived barriers to continuing education experienced by prevocational doctors.

For Australian public hospital-based doctors, we aimed to determine the perceived barriers to CME during the prevocational years, identify rotations where barriers were perceived to be greatest, and examine whether variations in these perceptions existed between subgroups of prevocational doctors.

Methods

Definition

Prevocational doctors were defined as doctors working in Australian public hospitals in postgraduate years one and two and doctors in subsequent years who had not enrolled in a specialist training program.

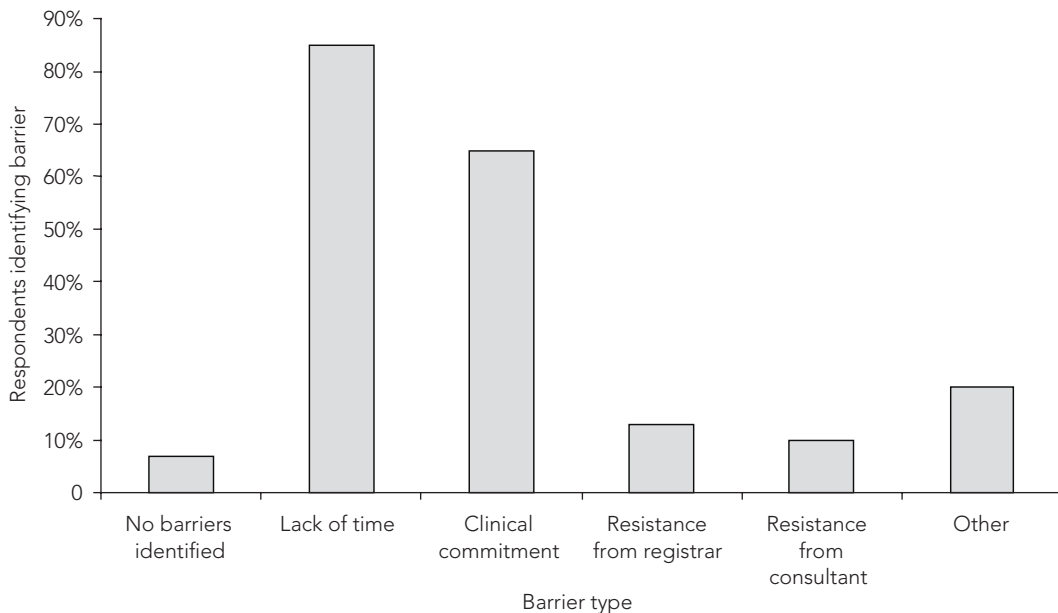
Questionnaire

The methodology of this study has been previously reported.¹¹ Briefly, the questionnaire, developed at St Vincent’s Hospital Melbourne, consisted of 45 items with graded Likert-type scales and free text questions. The questionnaire aimed to determine the occupation-related preparedness, preferred educational methods, and barriers to CME of prevocational doctors and gathered demographic data including age, gender, postgraduate year, university of graduation, undergraduate or postgraduate entry to the medical degree, and hospital of employment.

Three questions regarding educational barriers were asked.

Question 1 was “Have you experienced any barriers to your continuing medical education this year?” Choices offered were: lack of time, clinical commitment, resistance from registrar, resistance from consultant and other. Respondents were asked to select none, any or all of the barriers. An area for a free text response to “other” was provided.

I Percentage of respondents selecting each suggested barrier to continuing medical education



Question 2 was “Have you done any rotation this year where your continuing medical education was limited or inadequate?” and required a “yes” or “no” selection, followed by the opportunity to list up to four rotation types (eg, medical, surgical) and their locations (metropolitan, outer metropolitan or regional/rural).

Question 3 was “If there are further barriers to your education and learning which you can identify, please list or explain below.” A free text response was requested to encourage identification of barriers not examined elsewhere in the questionnaire.

Study sample

The questionnaire was piloted from August to October 2003 at St Vincent’s and the Alfred Hospitals, Victoria, distributed within Victorian public hospitals from September 2003 to January 2004 and to selected hospitals Australia-wide from May 2004 to October 2004 as ethics committee approvals were received. A full description of questionnaire development, hos-

pital selection process and distribution is available.¹¹ Anonymity constraints imposed by ethics committees prevented direct mail contact with prevocational doctors, so questionnaires were sent to hospital managers for secondary distribution to prevocational doctors. Hence actual distribution and response rates are not known.

Ethics approval

Ethics approval was obtained from 36 health services and Monash University.

Data analyses

Data were entered into a Microsoft Access database and descriptive and inferential analyses were performed using Microsoft Excel and SPSS software version 13.0 (SPSS Inc, Chicago, Ill, USA). For 2×2 contingency tables, Fisher’s exact test was applied. Alpha was set at 0.05.

For the first two questions, data were analysed by classifying respondents into postgraduate year one (PGY1) and postgraduate years two and

2 Positive identification of barriers to continuing medical education: PGY1 compared with PGY2+ and Australian graduates compared with international medical graduates (IMG)

Barrier to CME	PGY1		<i>P</i>	PGY2+		<i>P</i>
	Australian	IMG		Australian	IMG	
Lack of time	87%	84%	0.41	87%	77%	0.036
Clinical commitment	65%	65%	0.93	65%	67%	0.83
Resistance from registrar	11%	14%	0.76	13%	13%	0.89
Resistance from consultant	10%	10%	0.84	11%	7%	0.43

PGY1 = first post-graduate year. PGY2+ = postgraduate years two and beyond.

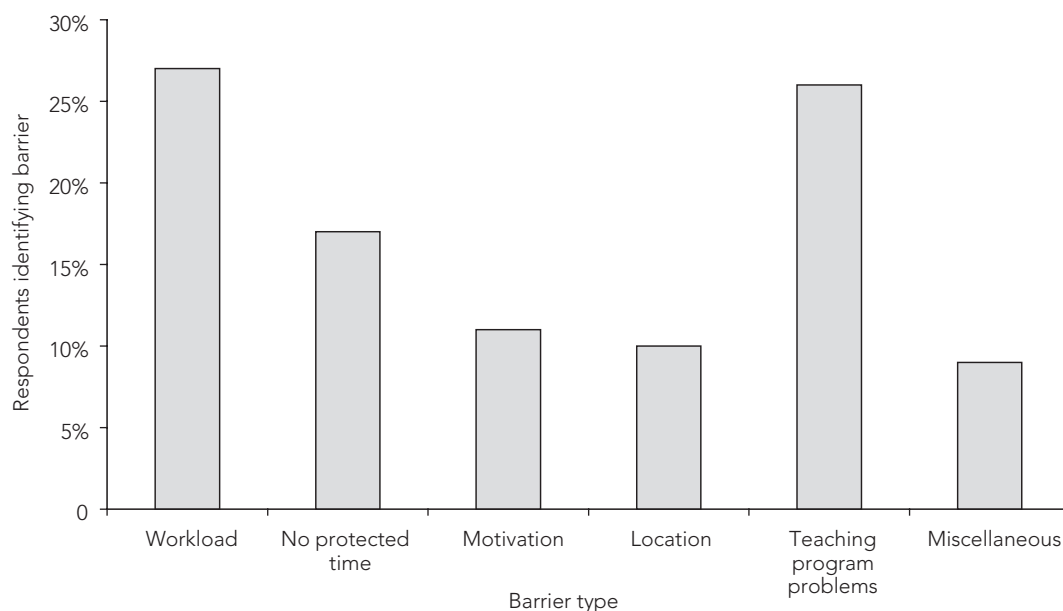
beyond (PGY2+) to examine differences between junior and more senior postgraduate doctors. Australian graduates were compared with international medical graduates (IMGs) to attempt to identify any barriers specific to the IMG group.

Both questions requiring free-text responses pertained to barriers to CME. The Foundation Approach¹² to content analysis was used to analyse themes in responses. Themes were initially identified by one author (SLN) and corresponding codes with an accompanying explanation

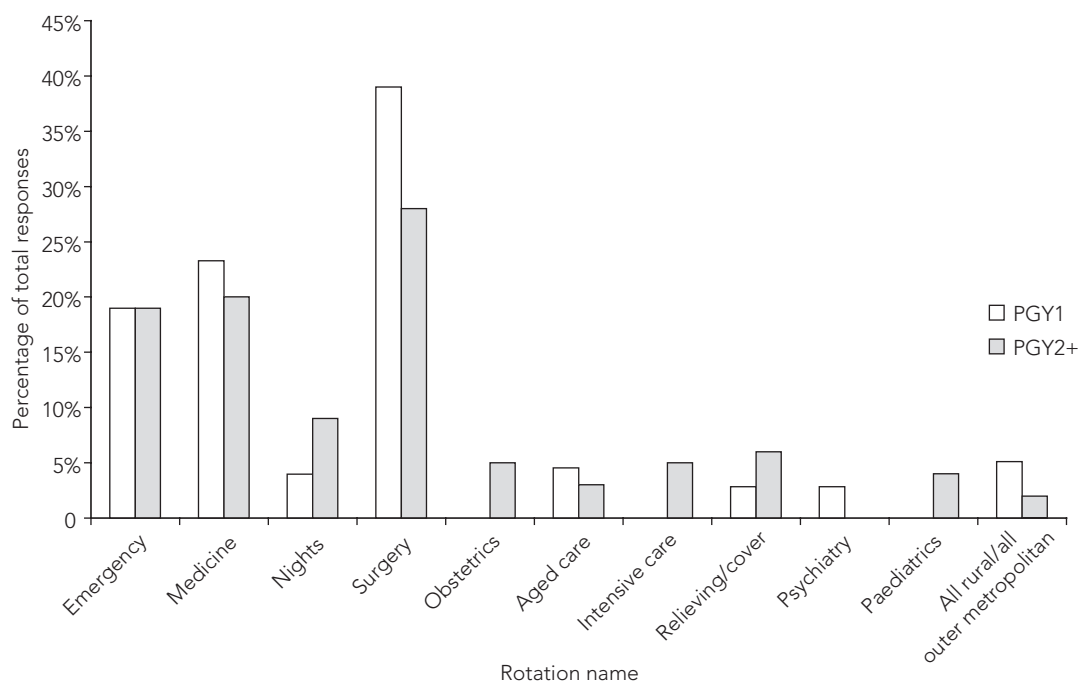
were defined. Two researchers then independently assigned the codes to the responses from all respondents. Using kappa statistic, inter-rater reliability was calculated to be 0.92 ($P < 0.001$) and 0.70 ($P < 0.001$) respectively for the two free-text responses. The number and percentage ($\pm 95\%$ CI) of responses were calculated according to codified themes using SPSS.

Not all questions were answered by all respondents, therefore results are expressed as percentage of valid responses. The percentage of

3 Barriers types identified in free text responses to “other” perceived barriers to continuing medical education ($n = 98$)



4 Rotations identified with limited or inadequate continuing medical education. Postgraduate year one (PGY1) responses compared with postgraduate years two and beyond (PGY2+)



non-respondents per question is identified where relevant.

Results

Four hundred and seventy valid questionnaires were returned from 2607 surveys (18.1% response rate). Two hundred and sixteen respondents (46%) were in their first postgraduate year (PGY1) and 254 (54%) in postgraduate years 2 or above (PGY2+). Four hundred and one respondents (85%) were Australian graduates and 69 (15%) were IMGs.

Question 1: Perceived barriers to continuing medical education

Thirty-three respondents (7%) did not identify any barriers to continuing education. The percentage of respondents identifying each suggested barrier to CME is reported in Box 1. There were

no statistically significant differences in perceived barriers to CME between PGY1 and PGY2+. Australian graduates reported lack of time to be a barrier significantly more often than did IMGs (Box 2). There were no significant differences between IMGs and Australian graduates for other perceived barriers.

Ninety-eight respondents (21%) provided a free-text answer to "Other" as a barrier to CME. These free-text responses were categorised into barrier types (Box 3). Barrier type categories and examples of free-text responses given included:

- **Workload.** Included in this category were lack of time, senior doctors expecting continued clinical duties during education times and shift work and night shifts preventing attendance.
 - "rostering clashes, eg, rostered off or working nights during education"
 - "education on day off, reluctant to go in on day off"

- “clinical rounds at education time”
- Lack of protected time. Included were resistance from administrators to provide rostered education time, and nurses and allied health staff not respecting and allowing protected time for education.
 - “hostile and uncooperative nursing and allied staff”
 - “constant paging from nursing staff during meetings”
 - “my pager”
 - “poor scheduling times, no protected time to attend”
- Motivation. Issues included fatigue and lack of interest in continuing education after completing a medical degree.
 - “laziness”
- Location. Themes were external rotations where education was not provided, poor resources in remote locations and lack of interest in teaching by consultant staff in rural/remote areas.
 - “poor education on external rotation”
 - “isolation on country rotations”
- Teaching program problems. Issues included poor organisation and structure of educational programs, frequent cancellations and teaching staff being too busy or not interested in providing CME. Education topics were described as repetitious, uninteresting and irrelevant.
 - “not enough structured learning opportunities”
 - “programmed teaching not clinically useful/relevant”
 - “topics not relevant/repeated”
- Miscellaneous. Examples were lack of personal organisation and awareness of teaching programs and cost of some educational resources.

Question 2: Rotations with limited or inadequate CME

Fifty-seven percent (268/470) of respondents identified 365 rotations in 341 locations with limited or inadequate CME. Some rotations were not associated with a location, eg “nights”, “relieving”. The frequencies with which rotation types

were identified comparing PGY1 responses with PGY2+ are examined in Box 4. Percentage of total responses are reported given that more than one rotation per respondent could be listed.

The most frequently identified rotations with limited or inadequate CME were surgical (34%), medical (22%) and emergency department (ED) (19%). In the PGY1 group, 38% of rotations identified were surgical, 23% medical and 19% ED compared with the PGY2+ group where 28% were surgical, 20% medical and 19% ED. The PGY1 group accounted for 56%, 53% and 49% of the total responses for each of these three rotations. Differences were not significant.

Thirty-two of the 69 IMGs (46%) identified 42 rotations and 225 of the 401 Australian graduates (56%) identified 321 rotations as having limited or inadequate CME. The three most frequent rotation types (ED, surgical, medical) were the same for IMGs and Australian graduates. IMGs identified ED rotations most frequently (ED 29%, surgical 22% and medical 17%) compared with Australian graduates identifying surgical rotations most commonly (ED 18%, surgical 34% and medical 22%). Differences were not significant.

Four per cent of responses from PGY1s identified nights as having limited or inadequate CME compared with 9% of the PGY2+ responses. Seventy-one per cent of all responses identifying “nights” came from PGY2+ ($P=0.06$) (Box 4). The specialty areas of obstetrics and gynaecology and intensive care (3% of total rotations identified) and psychiatry and paediatrics (2%) were infrequently listed.

Of the rotations nominated as having limited or inadequate CME that had an identified location, 53% occurred in metropolitan locations, 20% in outer metropolitan and 27% in regional/rural locations. Identification of metropolitan location did not differ significantly comparing PGY1 with PGY2+ or Australian graduates with IMGs. Outer metropolitan locations were identified more frequently in PGY2+ responses (26%) compared with PGY1 responses (14%) ($P=0.004$) and more frequently in Australian graduate responses (30%) compared with IMG responses (6%) ($P=0.001$). Rural rotations were identified in 37% of

PGY1 responses compared with 17% of PGY2+ responses ($P = 0.001$). 30% of Australian graduate responses identified regional/rural rotations compared with 6% of IMGs ($P = 0.001$).

When rotation and location were combined, surgical, medical and ED rotations remained the three rotations most often identified with inadequate CME, regardless of location.

Question 3: Further barriers to CME

Forty-four percent (207/470) of respondents provided a free-text response describing further perceived barriers to CME, and these were categorised. The major themes were workload and lack of time (57%), teaching program problems (23%), location issues (4%), lack of protected time for education (4%), motivational issues (2%) and miscellaneous (10%).

- Some doctors found being a non-specialist trainee a barrier in itself, with many rotations involving frequent changes of rotation, night shift and a heavy burden of service provision resulting in limited education and supervision.
 - “Being in a general stream (non-specialty). Lots of relieving and covering jobs with no education during these jobs”
 - “Not having a career direction”
 - “Lack of teaching for those not in training programs”
 - “Certain rotations are relatively unsupervised and therefore no teaching—country, ‘covering’ jobs, surgery where the registrar is in theatre”
- Some prevocational doctors found rotations to the emergency department (ED) a specific barrier.
 - “Miss a lot of scheduled teaching for ward interns while in ED”
 - “Difficult in ED with frequent nights, weekends, evenings”
 - “ED difficult as can’t predict workload and doctors in charge may not let you go”
 - “ED work is hectic and stressful. Cannot do onsite learning”
- Some responses were very personal and specific:
 - “Family commitments. Mother of 5-year old and pregnant.”

- “Religious reasons — can’t attend anything from Friday evening to Saturday.”
- Some need no explanation.
 - “Being a slave”
- Some interesting free text responses were provided by IMGs.
 - “Frustrating and unfair that certain training programs (surgery) are only open to Australian citizens/permanent residents”
 - “Time and my PASSPORT”
 - “Parents overseas. Australia refused immigration. Emotional discomfort is barrier”
 - “Registration with the medical board as an overseas doctor”
 - “OS-trained doctors need specific education in systems of management. Unaware of different management otherwise”

Discussion

Barriers to CME

Our study demonstrates that workload issues and subsequent lack of time represent the greatest barriers to continuing education for prevocational doctors. Frequently expressed themes were high patient load, excessive overtime, shift work, inability to predict and regulate workload and multiple concurrent responsibilities preventing access to education. While these issues may remain difficult to rectify due to the nature of public hospital-based work, the barriers of lack of protected education time, teaching program problems and location-related issues are more remediable. The findings suggest there is a clear need for protected educational time. Structured programs should occur reliably without cancellation and include topics relevant to these adult learners.

These findings seem to support what public hospital doctors intuitively understand. Jolly, examining the challenges facing the implementation of the new junior doctor curriculum framework, states that “The new prevocational curriculum must operate in a social and clinical context in which relationships between trainees

and supervisors can be challenging.”¹³ (p. S33) Implementation of the curriculum will be assisted by clinical educators having a clear understanding of those challenges faced by trainees, and vice versa.

Informal teaching from registrars in the clinical setting was found to be one of the most useful methods of learning in Dent’s analysis of usefulness of educational methods.¹¹ In response to the finding that registrars are the most useful source of education for prevocational doctors, Wong points out that it is difficult for educators to provide satisfactory education when their time constraints are as great as those of the learner.¹⁴ He argues that the time may have come to institute “medical educators” in a manner similar to clinical nurse educators to provide structured teaching and assessment in the clinical setting. The barriers preventing consultants and registrars who teach from becoming effective educators also need to be recognised and addressed. Barriers to effective teaching have been reported to include time constraints and workload of the educators, lack of knowledge and training and lack of rewards.¹⁵

Overall, adequate structured and protected time is required for both the learner to attend education and for the educator to train for, prepare for and deliver education. Addressing these time constraints may effectively address the three major barriers to ongoing education, that is time, teaching program inadequacies and potentially the problems encountered in rotations remote from parent hospitals.

Rotations with inadequate CME

The location of rotations with inadequate CME was most commonly metropolitan hospitals. This finding may have implications for educators at metropolitan teaching hospitals when considering allocation of non-clinical duties to senior medical staff, ensuring that senior medical staff have the time and skills to provide adequate education.

The identification of rotations having limited or inadequate CME could be thought to simply reflect the frequency with which these rotations

are undertaken. However, these rotations are similarly spread across all postgraduate years and as the frequency of medical and surgical rotations generally decreases with increasing years of experience, the consistent identification of these rotations may accurately reflect feelings of trainees rather than being a function of frequency.

International medical graduates

International Medical Graduates found ED rotations the most lacking in education. IMGs may perceive different stressors in the ED and may require tailored education in this setting. In general, IMGs expressed distress at social stressors impeding their ability to access educational opportunities. Barriers unique to being an IMG, such as difficulties with medical board registration and Australian citizenship being a pre-requisite for entry into some specialist training programs, exist and must be addressed.

Limitations

One limitation of the study is the response rate of 18.1%. Dent’s study, reporting the other findings of this national survey,¹¹ noted that this low response rate should not necessarily adversely affect the validity of the findings and is to be expected in a voluntary, anonymous survey, and that there is support in the literature for surveys with low response rates.¹⁶ He also states that despite the low percentage response rate, with 470 responses the survey still represents the largest study of Australian prevocational doctors’ perceptions and that validity of results is supported by the fact that “comparisons between hospitals with response rates of more than 20% with those with response rates less than 20% showed internal consistency of responses”.¹¹ The response rate may be partly explained by the mode of distribution of questionnaires via health administrators to the prevocational doctors. This intermediate step was required due to ethical constraints relating to concerns about perceived coercion resulting from direct contact with doctors.

The format of the question relating to perceived barriers to CME may have biased the responses,

given that the choices offered were limited in number and differences between the answers may not have been distinct. There may have been a temptation to tick multiple answers. Formatting of the question in a Likert scale may have given more reliable answers.

Conclusions

Overall, a high degree of stress and distress was expressed by prevocational doctors accessing continuing medical education. It is likely that the busy working life of a prevocational doctor makes ongoing education and, indeed, life, difficult at times. Adequate protected time for teachers to structure teaching and learners to access these opportunities may better facilitate the delivery of postgraduate medical education.

Competing interests

The authors declare that they have no competing interests.

References

- 1 Beard J, Strachan A, Davies H, et al. Developing an education and assessment framework for the Foundation Program. *Med Educ* 2005; 39: 841-51.
- 2 Graham IS, Gleason AJ, Keogh GW, et al. Australian Curriculum Framework for Junior Doctors. *Med J Aust* 2007; 186: S14-19.
- 3 McGrath BP, Graham IS, Crotty BJ, et al. Lack of integration of medical education in Australia: the need for change. *Med J Aust* 2006; 184: 346-8.
- 4 Van Der Weyden MB. Challenges and change in medical training: the Australian Curriculum Framework for Junior Doctors. *Med J Aust* 2007; 186: 332-3.
- 5 Australian government productivity commission. Australia's health workforce. Research report. Canberra, 2006.
- 6 Paltridge D. Prevocational medical training in Australia: where does it need to go? *Med J Aust* 2006; 184: 349-52.
- 7 Dolcourt JL, Zuckerman G, Warner K. Learners' decisions for attending Pediatric Grand Rounds: a qualitative and quantitative study. *BMC Med Educ* 2006; 6: 26.
- 8 Glazebrook RM, Harrison SL. Obstacles and solutions to maintenance of advanced procedural skills for rural and remote medical practitioners in Australia. *Rural Remote Health* 2006; 6: 502.
- 9 Savoldelli GL, Naik VN, Hamstra SJ, et al. Barriers to use of simulation-based education. *Can J Anaesth* 2005; 52: 944-50.
- 10 Gleason AJ, Daly JO, Blackham RE. Prevocational medical training and the Australian Curriculum Framework for Junior Doctors: a junior doctor perspective. *Med J Aust* 2007; 186: 114-16.
- 11 Dent AW, Crotty B, Cuddihy HL, et al. Learning opportunities for Australian prevocational hospital doctors: exposure, perceived quality and desired methods of learning. *Med J Aust* 2006; 184: 436-40.
- 12 Huberman AM, Miles MB, ed. The qualitative researcher's companion. An expanded source book. Thousand Oaks CA: Sage, 2002.
- 13 Jolly BC. The new curriculum framework and assessment practices: current challenges for postgraduate years 1 and 2. *Med J Aust* 2007; 186: S33-6.
- 14 Wong K. Registrars cannot provide full teaching for juniors. *Med J Aust* 2006; 185: 54.
- 15 Lake FR. Teaching on the run tips: doctors as teachers. *Med J Aust* 2004; 180: 415-16.
- 16 Krosnick JA. Survey research. *Annu Rev Psychol* 1999; 50: 537-67.

(Received 22/05/07, revised 27/11/07, accepted 31/01/08) □