## ORIGINAL RESEARCH

# Supporting international medical graduates in rural Australia: a mixed methods evaluation

**A Wright[1], M Regan[2], C Haigh[2], I Sunderji[3], P Vijayakumar[3], C Smith[4], D Nestel[5]**

[1]Latrobe Regional Hospital, Traralgon, Victoria, Australia

[2]School of Rural Health, Monash University, Traralgon, Victoria, Australia

[3]Imperial College, London, UK

[4]Department of Family and Community Medicine, University of Toronto, Toronto, Canada

[5]Gippsland Medical School, Monash University, Churchill, Victoria, Australia

## A B S T R A C T

**Introduction:** In Australia, international medical graduates (IMGs) make a substantial contribution to rural medical workforces. They often face significant communication, language, professional and cultural barriers, in addition to the other challenges of rural clinical practice. The Gippsland Inspiring Professional Standards among International Experts (GIPSIE) program was designed to provide educational support to IMGs across a large geographical region using innovative educational methods to ultimately build capacity in the provision of rural medical education. GIPSIE offered 5 sessions over 3 months. Simulation-based training was a prominent theme and addressed clinical knowledge, attitudes and skills and included a range of activities (eg procedural skills training with benchtop models, management of the acutely ill patient with SimMan, patient assessment skills with simulated patients). Diverse clinical communication skills were explored (eg teamwork, handover, telephone, critical information). Audiovisual review of performance was enabled through the use of iPod nano devices. GIPSIE was underpinned by a website offering diverse learning resources. Content experts were invited to lead sessions that integrated knowledge and skills reflecting local practice.

**Methods:** IMGs were recruited from hospitals ($n=15$) and general practices ($n=2$) across the region. It was aimed to evaluate the impact of GIPSIE on the clinical practice of IMG participants. Evaluation measures included pre- and post-program 15 item

multisource feedback (MSF), post-program questionnaires and, in order to address retention, telephone interviews exploring participants' responses 3 months after the program finished.

**Results:** Fifteen participants completed GIPSIE and rated the program highly, especially the simulation-based activities with feedback and later audiovisual review on iPods and the GIPSIE website. Suggestions were made to improve several aspects of the program. Participants reported increased knowledge, skills and professionalism after the program. Although overall MSF scores showed no statistically significant changes, there were positive directional changes for the items 'technical skills appropriate to current practice', 'willingness and effectiveness when teaching/training colleagues' and 'communication with carers and family'. These developments were also supported in free-text comments. Learning was reported to be sustained 3 months after the program.

**Conclusions:** GIPSIE was highly valued by participants who reported improvements in clinical knowledge and skills. A range of professional issues were raised and addressed. GIPSIE seemed to provide a platform for further development. Although new to many participants, simulation was embraced as an educational method. The relationship between regional clinicians and the medical school was pivotal to success. A feature of the study was tracking improvements in clinical practice as a consequence of participating in the GIPSIE program. Future work needs to focus on further promoting the transfer of learning to the workplace. However the sustainability of these programs requires significant commitment.

**Key words:** clinical skills, international medical graduates, program evaluation, simulation, training programs.

---

# Introduction

This article reports the development, implementation and evaluation of a professional development program for international medical graduates (IMGs) working in Gippsland. In Australia, IMGs constitute more than one-quarter of the medical workforce[1]. IMGs make a major contribution to the delivery of patient care in Gippsland, Victoria. Although the wealth of professional experience that IMGs bring is recognised and valued, there has been considerable discussion about their competence and need for educational support, especially at the beginning of their placement in Australia, and particularly when located in rural settings. In this project, clinicians across Gippsland worked with faculty from the Gippsland Medical School (GMS) to develop, implement and evaluate a program designed to support IMGs. The program was called Gippsland Inspiring Professional Standards among International Experts (GIPSIE).

An underpinning philosophy of the GIPSIE program was the desire to provide a learning environment that was flexible, supportive and motivating. It aimed to adopt the best evidence for education and health service and, wherever possible, this was contextualised for local practice. Generic program aims were to:

1. Provide IMGs with an opportunity to further develop knowledge, attitudes and skills for safe and effective clinical practice in Gippsland.
2. Develop individual IMG's self-awareness of strengths and areas for development.
3. Promote Gippsland as a region regarded as supportive of IMG education and training.

## Literature on international medical graduates

There are several recent literature reviews in Australia and abroad documenting IMG experiences and the content of orientation programs[2-5]. Here the focus is on the Australian literature. Most areas of medical practice are experiencing workforce shortages[6,7]. These shortages have been attributed to the increasing demands of an ageing population and a reduction in the hours worked by medical doctors and have led to the growing dependence on IMGs[7]. IMG recruitment has been a strategy of workforce planning to overcome shortages. Designated *areas of need* are heavily dependent on IMGs to maintain workforce[8]. However, there are

unanswered questions regarding the appropriateness of IMG training, orientation and support[8,9] for working in rural contexts. Emergency departments outside major cities rely on IMGs. However, there are no training or education standards for these departments, with most doctors feeling the need for further training[10]. IMGs usually come from cultures markedly different to that in rural Australia, and English is not their first language. IMGs are often poorly orientated to the local healthcare system and there is a paucity of resources to support their ongoing training and educational needs. Moreover, there is limited funding to support existing doctors in their efforts to teach and nurture this large and important group working in rural Australia.

**Needs of international medical graduates:** A survey of GPs in rural practice, both IMGs and Australian graduates, revealed similar perceptions regarding professional development needs, training opportunities, professional support, networking and financial support[6,11]. Another survey found that English language communication and understanding the Australian healthcare system were common areas of need[12]. A qualitative study of IMGs in general practice training found that language and communication, cultural issues, understanding the Australian healthcare system, clinical knowledge, consulting styles and registrar support were areas of challenge during transition to a new position[13].

McGrath described IMGs' needs as including the need for information, orientation to healthcare systems and workplaces, improved communication skills with both patients and co-workers, emphasising the requirement for standardised assessment of knowledge and skills, and education and training support[14]. IMGs have been found to have gaps in medical knowledge, clinical reasoning skills and communication skills[15].

**Orientation/support/education programs for international medical graduates:** Effective orientation can assist IMGs in the transition to practice in a new country, reduce isolation and enhance integration into new community[16]. In Australia there is no national approach to

support the integration of IMGs into the workforce[14]. A small study examined orientation of IMGs to a rural community and found that the median orientation length was one week, with preference among IMGs being for 2 weeks; 25% of the sample had no formal orientation, with only just over half being satisfied with their orientation[17]. Orientation topics given the highest importance by IMGs were clinical and financial issues, and the lowest importance was assigned to social topics, with confidence ratings matching these preferences[17]. Suggested improvements included a paid orientation, visits to several practices, more question time and more emergency medicine updates. The study also found that problems settling in could have been reduced with more information about the community, job information for spouses and the availability of a car[17].

An evaluation of a pre-employment program was undertaken with 66 IMG participants[5]. This 4 week, full-time program included communication, health and workplace skills; sessions on culture shock and the role of the junior doctor, with confidence and attitudes towards general duties and workplace skills measured[5]. Results included reports of greater understanding of staff and communication issues, familiarisation with the hospital environment, a more realistic understanding of their role and future professional development needs and the establishment of a peer network[5].

A systematic review of the literature about communication issues faced by IMGs was undertaken to provide training organisations with the background needed to understand the issues[18]. The findings of the literature review included the need for: IMGs to adjust to a change in status; clinicians to understand the high level of language proficiency required of IMGs; the development of IMGs' communication skills; clinicians to understand IMGs' expectations about teaching and learning; and IMGS to be able to interact with a variety of people[18].

## The GIPSIE program

**Educational theory and methods**: The GIPSIE program draws on theories of expertise, contextualised learning,

reflective practice and principles of adult learning. Expertise develops when individuals are given the opportunity for deliberate practice and feedback[19]. That is, learners are given the opportunity to actively seek to improve their performance together with expert judgments on their strengths and areas for development. Contextualisation of learning refers to the process in which learners are taught in the setting in which they are expected to practice[20,21]. This is sometimes referred to as *situated learning*. It was proposed to recreate settings in simulation-based education through environments that reflected the physical, psychological and social fidelity of clinical practice. Reflective practice encourages learners to understand their actions by 'reflecting' on their strengths and areas for development in specific scenarios, followed by developing strategies to maintain their strengths and improve less effective practices[22-24]. Adult learning principles ensured that the program was interactive and experiential, aligned with participants' current working practice and addressing their individual needs[25].

## Development of content

This research focused on commonly occurring clinical events to support participants in their everyday practice. Issues known to be challenging for IMGs were identified and explored. Content was developed in conjunction with local physicians, surgeons, emergency physicians and paediatricians. Additionally, the program drew on the Australian Curriculum Framework for Junior Doctors[26] and was aligned with material offered by the Postgraduate Medical Council of Victoria (PMCV)[27]. A summarised version of content is listed (Fig1); while participants' ratings of the learning objectives are given (Table 1), as are their ratings of the educational methods (Table 2). Further information is available on the **GIPSIE website**.

The key stages of GIPSIE are provided (Fig2). After multi-source feedback (MSF), the program began with a questionnaire-based learning needs analysis designed to ensure that program content was individualised, an important step in promoting receptiveness to learning. An immersion weekend workshop preceded 4 fortnightly evening meetings.

There were 24 contact hours and an additional 3 hours of observed clinical practice. A combination of massed and distributed learning was adopted, supported by web-based, self-directed and interactive learning methods between sessions to ensure continuity and application of learning.

## Simulated consultations

Participants were given an opportunity to participate in simulated patient (SP) encounters based on commonly occurring scenarios from local practice. Orientation to simulation was a feature of the program. While the SPs provided feedback from a patient perspective, clinical experts provided feedback on medical elements[28]. Simulated consultations enabled a wide range of topics to be addressed through realistic patient encounters. Interactions were videotaped using digital recording facilities and played back to participants for review. This approach is widely acknowledged as a powerful learning approach[29,30]. The iPod nano devices enabled participants to have later audiovisual access to their simulated encounters. This was considered particularly important given that English was not their first language and the opportunity to review performance was likely to be helpful. IMGs were provided with the chance to practise a range of communication skills relevant in patient and clinician interactions: reflective listening, empathic skills, and use of open-ended questions, as well as rapport building skills and dealing with difficult situations. The communication content of the program drew heavily on a previously published curriculum[31].

**Procedural and examination skills:** An approach was adopted to simulation-based education that integrates SPs with a simulator (eg suture pad) or medical equipment (eg ECG machine) within a simulated clinical setting. These hybrid simulations enable participants to integrate the complex range of psychomotor, interpersonal, professional, clinical decision-making and patient safety skills in an environment safe for learners and without harm to patients[28,32-35]. Two skills the PMCV lists as relevant for IMGs entering practice in Victoria were selected: suturing and ECG interpretation.
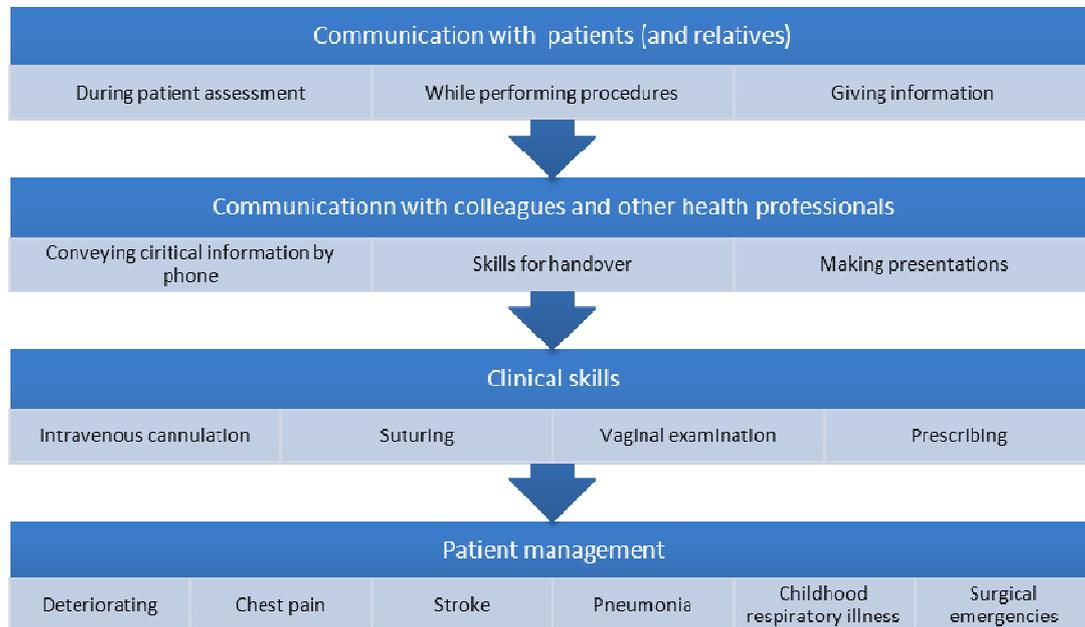
**Figure 1: Summary of content of the GIPSIE program.**
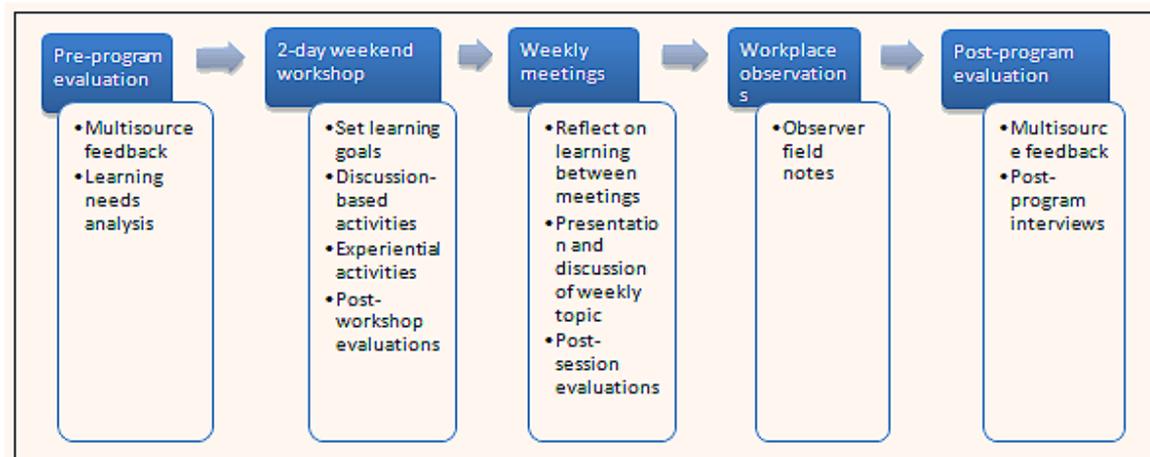
**Figure 2: Key stages of the GIPSIE program.**

**Management of deteriorating and acutely ill patients:** Participants had the opportunity to participate in a simulation scenario focusing on the management of an acutely ill patient. Scenarios required participants to have sufficient clinical knowledge and judgment to recognize a deteriorating patient, to explore principles of effective teamwork and to reinforce principles of patient safety. Again, audiovisual capture enabled later review. Opportunities were provided for simulation-based training for handover and telephone communication skills including conveying urgent information clearly and concisely.

**Table 1: Participants' *(n=17)* ratings of the degree to which they met learning objectives**

| Learning objectives | | Rating† | | | |
|---|---|---|---|---|---|
| | | Mean | SD | Min | Max |
| 1 | Outline the content of GIPSIE program | 4.6 | 0.9 | 3 | 6 |
| 2 | Outline the educational methods on the GIPSIE program | 4.9 | 0.6 | 4 | 6 |
| 3 | Discuss challenges facing IMGs in Gippsland | 5.1 | 0.6 | 4 | 6 |
| 4 | Identify personal learning needs for professional development | 4.8 | 0.7 | 4 | 6 |
| 5 | Identify key safety issues for prescribing in the ED | 4.6 | 0.7 | 4 | 6 |
| 6 | Identify ways to minimise prescribing errors | 4.6 | 0.9 | 3 | 6 |
| 7 | Describe the process for prescribing in the ED | 4.8 | 0.7 | 4 | 6 |
| 8 | Describe rationale for the PCI | 4.6 | 0.7 | 4 | 6 |
| 9 | Identify skills for opening a PCI | 4.8 | 0.5 | 4 | 5 |
| 10 | Identify skills for gathering information in a PCI | 4.6 | 0.5 | 4 | 5 |
| 11 | Identify skills for closing a PCI | 4.4 | 0.5 | 4 | 5 |
| 12 | Identify a patient with stroke | 5.0 | 0.5 | 4 | 6 |
| 13 | Identify different stroke symptoms | 5.1 | 0.6 | 4 | 6 |
| 14 | Identify different aetiologies of stroke | 5.0 | 0.8 | 4 | 6 |
| 15 | Identify stroke complications | 4.8 | 0.7 | 4 | 6 |
| 16 | Outline principles of information giving in a consultation | 4.4 | 0.5 | 4 | 5 |
| 17 | Identify key management issues in gynaecological emergencies | 4.9 | 0.8 | 4 | 6 |
| | Session 1 (*n*=12) | | | | |
| 18 | Identify presentation of commonly occurring cardiac conditions | 4.3 | .5 | 4 | 5 |
| 19 | Review management of commonly occurring cardiac conditions | 4.3 | .5 | 4 | 5 |
| 20 | Rehearse skills for communicating while performing IV cannulation | 4.3 | 1.0 | 3 | 5 |
| 21 | Identify communication challenges in taking a sexual history | 4.5 | 1.0 | 4 | 6 |
| 22 | Rehearse skills for communicating while performing a vaginal examination | 3.8 | .5 | 3 | 4 |
| | Session 2 (*n*=15) | | | | |
| 23 | Identify presentation of commonly occurring respiratory conditions in children | 4.6 | 0.5 | 4 | 5 |
| 24 | Review management of commonly occurring respiratory conditions in children | 4.6 | 0.5 | 4 | 5 |
| 25 | Discuss challenges in management of children in the ED | 4.4 | 0.8 | 4 | 6 |
| 26 | Identify communication challenges in taking a sexual history | 4.6 | 0.8 | 4 | 6 |
| 27 | Rehearse skills for communicating with children in consultations | 4.9 | 0.7 | 4 | 6 |
| | Session 3 (n=14) | | | | |
| 28 | Discuss commonly occurring surgical emergencies | 4.6 | 0.6 | 4 | 5 |
| 29 | Discuss management of patients with commonly occurring surgical emergencies | 5.0 | 0.7 | 4 | 6 |
| 30 | Rehearse and reflect on technical skills for resuscitation | 5.0 | 0.7 | 4 | 6 |
| 31 | Participate and reflect on teamwork during management of acutely ill patients | 4.6 | 0.9 | 4 | 6 |
| 32 | Rehearse and reflect on skills for communicating medical information via telephone | 5.0 | 0.7 | 4 | 6 |
| | Session 4 (*n*=15) | | | | |
| 33 | Identify patient management challenges in your practices | 4.5 | 0.8 | 3 | 5 |
| 34 | Review skills for making presentations | 4.7 | 0.8 | 4 | 6 |
| 35 | Identify your strengths in making patient presentations | 4.8 | 0.8 | 4 | 6 |
| 36 | Identify your areas for development in making patient presentations | 4.8 | 0.8 | 4 | 6 |
| 37 | Identify ways in which you will maintain and further develop your professional skills | 4.7 | 0.5 | 4 | 5 |

ED, Emergency department; IMG, international medical graduate; GIPSIE , Gippsland Inspiring Professional Standards among International Experts; PCI, patient-centred interviewing.

†Scale: 1 (not at all met) to 6 (completely met).

_____

**Table 2:  Participants' *(n=17)* ratings of the value of the educational methods**

| Educational methods | | Rating† | | | |
|---|---|---|---|---|---|
| | | Mean | SD | Min | Max |
| 1 | Workshop guide | 4.4 | 0.7 | 3 | 5 |
| 2 | Discussion groups | 4.4 | 0.7 | 3 | 5 |
| 3 | Lectures | 4.8 | 0.7 | 4 | 6 |
| 4 | Learning needs analysis review with tutor (incl. MSF results) | 4.4 | 0.7 | 3 | 5 |
| 5 | Observing simulations | 4.9 | 0.6 | 4 | 6 |
| 6 | Participating in the simulations | 4.9 | 0.4 | 4 | 5 |
| 7 | Feedback from simulated patients | 4.6 | 0.5 | 4 | 5 |
| 8 | Feedback from tutors on performance in simulation | 4.9 | 0.4 | 4 | 5 |
| 9 | Giving feedback to peers on performance in simulation | 4.5 | 0.5 | 4 | 5 |
| 10 | Receiving feedback from peers on performance in simulation | 4.5 | 0.8 | 3 | 5 |
| 11 | Orientation to the GIPSIE website | 4.4 | 0.5 | 4 | 5 |
| 12 | Writing reflections | 4.3 | 0.7 | 3 | 5 |
| 13 | Sharing personal learning in large group summary session | 4.5 | 0.5 | 4 | 5 |
| | Session 1 (*n*=15) | | | | |
| 14 | Session guide | 4.3 | 0.5 | 4 | 5 |
| 15 | Lecture | 4.3 | 0.5 | 4 | 5 |
| 16 | Observing simulations | 4.3 | 1.0 | 3 | 5 |
| 17 | Participating in simulations | 4.5 | 1.0 | 4 | 6 |
| 18 | Feedback from simulated patients | 3.8 | 0.5 | 3 | 4 |
| 19 | Feedback from tutors on performance in simulation | 5.0 | 0.8 | 4 | 6 |
| 20 | Giving feedback to peers on performance in simulation | 5.0 | 0.8 | 4 | 6 |
| 21 | Receiving feedback from peers on performance in simulation | 4.3 | 1.2 | 3 | 5 |
| 22 | Viewing simulations on iPods | 5.0 | 0.8 | 4 | 6 |
| 23 | GIPSIE website | 4.5 | 1.0 | 3 | 5 |
| | Session 2 (n=15) | | | | |
| 24 | Session guide | 4.6 | 0.5 | 4 | 5 |
| 25 | Lecture | 4.9 | 0.7 | 4 | 6 |
| 26 | Observing simulations | 5.0 | 1.0 | 3 | 6 |
| 27 | Participating in simulations | 4.7 | 1.1 | 3 | 6 |
| 28 | Feedback from simulated patients | 4.9 | 1.1 | 3 | 6 |
| 29 | Feedback from tutors on performance in simulation | 4.7 | 0.8 | 4 | 6 |
| 30 | Giving feedback to peers on performance in simulation | 4.6 | 0.8 | 4 | 6 |
| 31 | Receiving feedback from peers on performance in simulation | 4.4 | 0.8 | 4 | 6 |
| 32 | Viewing simulations on iPods | 5.0 | 0.8 | 4 | 6 |
| 33 | GIPSIE website | 5.1 | 0.7 | 4 | 6 |
| | Session 3 (*n*=15) | | | | |
| 34 | Session guide | 5.4 | 0.9 | 4 | 6 |
| 35 | Lecture | 4.8 | 0.8 | 4 | 6 |
| 36 | Telephone communication simulations | 5.0 | 0.7 | 4 | 6 |
| 37 | SimMan simulations | 5.2 | 0.8 | 4 | 6 |
| | Session 4 (*n*=15) | | | | |
| 38 | Session guide | 4.5 | 1.1 | 3 | 6 |
| 39 | Lecture | 4.3 | 1.2 | 3 | 6 |
| 40 | Case presentations | 4.8 | 0.8 | 4 | 6 |
| 41 | Discussions on case presentations | 5.2 | 0.8 | 4 | 6 |

GIPSIE , Gippsland Inspiring Professional Standards among International Experts; MSF, multisource feedback.

†Scale: 1 (not at all helpful) to 6 (completely helpful).

**GIPSIE website:** An important goal was to develop a learning community within Gippsland. The website aimed to provide flexible learning before, during and after sessions that was accessible anytime and anywhere. Website content included a communication board, learning paths, case of the week, image of the week, quizzes, newsletters, web links and more.

### Research questions

The research questions were:

- To what extent is it possible to support professional development of IMGs in a regional setting?
- What aspects of the GIPSIE program were effective?
- What aspects need improvement?

# Methods

### Recruitment of participants

Directors of medical services in Gippsland were asked to identify potential participants. GIPSIE was introduced to participants locally and then by letter of invitation. Positions were allocated sequentially, with an ability to commit to the entire program and representation across several institutions being the criteria for inclusion.

There were 4 main instruments in the evaluation:

1. Demographics and experience of Gippsland (pre-program)
2. Baseline learning needs forms (pre-program)
3. Multisource feedback (pre- and post-program)
4. Participants' response to program (workshop and end-of-session evaluations, and telephone interviews).

**Demographics and experience of Gippsland (pre-program):** A questionnaire was developed to record age, sex, experience of living and working in Gippsland, career goals and experience of a range of educational methods.

Responses included ratings of satisfaction and free text responses.

**Baseline learning needs forms (pre-program):** Participants identified their expectations and learning goals for the GIPSIE program in a questionnaire. Responses were in free-text format.

**Multisource feedback (pre- and post-program):** Based on an **MSF form** used in the UK for junior doctors, the IMG nominated colleagues to make judgments on facets of clinical practice. A six-point scale recorded level of competence. Participants were also asked to self-assess using this form, so they could start to construct a picture of how they see themselves compared with the perceptions of others.

**Participants' responses to the program:** Immediately after sessions and at the end of the workshop, participants were asked to rate the degree to which they met learning objectives and the educational methods used. Six-point rating scales were used (from 1 = 'not at all met or not at all helpful' to 6 = 'completely met or helpful') and free text, where participants were asked to identify what worked well and what needed to be improved. Three months after GIPSIE, a telephone interview explored participants' experiences of the program emphasising the transfer of learning.

### Data analysis

Quantitative data were entered into SPSS v17.0 (www.spss.com) for analysis. Descriptive statistics summarised data. Individual differences pre- and post-program were identified using the Wilcoxon signed-rank test. Statistical significance was established at $p<0.05$. Qualitative data (free-text comments and interview data) were thematically analysed independently and then agreement negotiated by the researchers (DN, AW, CH). An external evaluator (CS) reviewed de-identified data to ensure rigorous evaluation.

## Human Research Ethics approval

Human Research Ethics Committee approval was obtained from Standing Committee on Ethics in Research involving Humans (SCERH) following the project (# CF08/2794 – 2008001457).

# Results

### Participant baseline information

Seventeen participants registered for the program (10 male and 7 female), aged 27 to 51 years (mean=35). Participants came from 12 countries (Sri Lanka, the Philippines, Colombia, India, Bulgaria, Bangladesh, Iran, Afghanistan, Vietnam, China, Egypt and Bosnia) and spoke 14 languages (other than English). Participants had been in Australia between 2 and 120 months (mean=46) and in Gippsland for 2 to 42 months (mean=13). Thirteen had previously attended educational programs designed for IMGs. Four had prior experience with part-task trainers, eight with manikins and 11 with SPs. Participants reported their experience as minimal. Two participants had prior experience of MSF and three of analysis of learning needs. Seven had experience of using video review. On a six-point scale, their mean rating of enjoyment of workplace was 4.7 (range=2; SD=0.6) and perceived support in their workplace was 4.3 (range=3; SD=0.9).

### Challenges of being an international medical graduate in Gippsland

Participants identified several challenges that can be broadly classified into overlapping categories: professional issues including education, assessment and communication; and cultural issues, specifically including working in Gippsland.

**Professional issues:** All of the challenges identified had a professional component. Those who were previously consultants encountered challenges in having to prove themselves in their new, more junior capacity. Relearning

skills was confronting and not without difficulty. Similarly, working under supervision was sometimes threatening, although almost always appreciated. Constructive and positive supervision was highly valued.

Participants were confused by the selective use of protocols in Australian healthcare settings. They reported a need for greater support at work especially after hours, and suggested that more could be done to encourage doctors who have completed the rotation to support incoming IMGs.

Participants highlighted the value of the opportunity to share their experiences of their new roles and communities. They raised issues on dealing with administration, mentoring, study support and racism. Major terrorist activities had heightened local sensitivities. There was overwhelming support for improved orientation or induction to the workplace.

Participants wanted more education and assessment that acknowledged their prior experience and full registration as 'Australian' doctors. They described a need to 'refresh' their knowledge because, as 'senior' doctors elsewhere they had not performed many procedures that were now part of their daily work. Although confident in identifying many of their patients' presenting conditions, they were unfamiliar with local treatment regimens.

Communication with patients, their relatives, peers and consultants (in person, by telephone or in writing) was a critical issue for each participant. Jargon and colloquialisms were problematic. Communicating with consultants was a particular problem and telephone communication was also difficult.

**Cultural issues:** Several aspects of culture were identified as challenging including the workings of the local hospital unit/emergency department, its relationship with the rest of the hospital, participants' own roles and responsibilities and those of others in the healthcare team and the broader Australian healthcare system. The process of patient referral was also different from the systems participants were familiar

with. Although largely viewed positively, living in a rural environment was identified as new. Most participants had come to Gippsland from an urban area. Participants wanted orientation to the local community.

Reasons for working in Gippsland related almost always to job opportunities and, for some, a preference for living and working in a regional and rural setting. Participants reported they enjoyed Gippsland for the people, its geography and recreational opportunities while they disliked the lack of public transport, winter weather, limited multiculturalism and educational opportunities for children, and some of the heavy industry. Just over half the participants intended to stay in Gippsland and gave reasons such as opportunities for work and training. For those who did not want to stay, their reasons included no opportunities for their partner to work, restricted training opportunities and a limited social network.

## Baseline learning needs

Pre-program each IMG recorded their personal program goals. These were adjusted after they had received their summarised MSF, and in discussion with a faculty member. Dominant themes within the participants' goals included development of general management of patients and specific clinical skills (eg lumbar puncture, central line insertion, chest drains). Communication was consistently identified as a goal, including communicating with patients and their relatives and with colleagues, in person and in writing; and specifically, insight into the use of colloquialisms and acronyms. Additionally, participants aimed to improve their understanding of hospital operations and the broader Australian healthcare system. Thus, the IMGs could clearly articulate specific skills and knowledge that would assist them to work more effectively in their current clinical contexts.

## Multi-source feedback

Fifteen participants completed the program and only their results are included in the MSF results. Pre-program, participants identified colleagues to complete the MSF. The same colleagues were contacted post-program to complete

the MSF again. Forms were obtained from two to eight colleagues per participant at the points of testing; summary data are provided (Table 3). As a group, participants were considered to be *safe and competent* (mean scores exceeding 4) across all variables before and after GIPSIE. However, the range of scores suggested that some participants were *less than safe and competent* or *borderline* (mean scores at 2 or 3, respectively). Using the Wilcoxon signed-rank test to detect individual differences before and after the program, statistically significant and positive changes were identified for three variables: (i) technical skills appropriate to current practice; (ii) willingness and effectiveness when teaching/training colleagues; and (iii) communication with carers and family.

Pre-program, MSF free text comments proved especially valuable in identifying participants' strengths. Examples include willingness and enthusiasm to learn, ability to communicate with colleagues, diligence and an ability to work hard. Specific elements of behaviours that were reported to need development included communication with patients, their families and colleagues, English language (including heavily accented English), planning and organising care, documentation, selecting appropriate tests, clinical knowledge, adherence to hospital protocols and improving confidence.

Post-program, many more strengths were identified than areas for development. These aspects also addressed items raised at the pre-test. Strengths included personal qualities, clinical ability, and communication with patients, their families and colleagues. Assessors who completed forms post-program often phrased their comments as improvements. Examples of development included time management and conflict resolution (with staff). This indicates that GIPSIE was successful in providing an infrastructure for IMGs to develop required knowledge, attitudes and skills that underpin safe and effective clinical practice in a rural setting. Examples of MSF feedback for one participant are provided (Fig3).

**Table 3: Summary results of multisource feedback for all participants pre- and post-program (*n*=15)**

| Feedback | Pre-test | | | | | Post-test | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *n* | mean | SD | min | max | *n* | mean | SD | min | max |
| Good clinical care | | | | | | | | | | |
| Ability to diagnose patient problems | 102 | 4.2 | 0.9 | 2 | 6 | 84 | 4.1 | 0.5 | 3 | 6 |
| Ability to formulate appropriate management plans | 102 | 4.2 | 0.8 | 2 | 6 | 85 | 4.1 | 0.6 | 2 | 6 |
| Awareness of their own limitations | 101 | 4.3 | 0.8 | 2 | 6 | 85 | 4.2 | 0.7 | 2 | 6 |
| Ability to respond to psychological aspects of illness | 94 | 4.4 | 1.0 | 2 | 6 | 85 | 4.1 | 0.7 | 3 | 6 |
| Appropriate utilisation of resources (eg ordering investigations) | 102 | 4.3 | 0.8 | 3 | 6 | 85 | 4.1 | 0.7 | 3 | 6 |
| Maintaining good medical practice | | | | | | | | | | |
| Ability to manage time effectively/prioritise | 100 | 4.3 | 0.8 | 2 | 6 | 86 | 4.0 | 0.7 | 3 | 6 |
| Technical skills (appropriate to current practice)* | 100 | 4.3 | 0.7 | 3 | 6 | 86 | 4.2 | 0.7 | 3 | 6 |
| Teaching and training: appraisal and assessing | | | | | | | | | | |
| Willingness and effectiveness when teaching/training colleagues* | 71 | 4.3 | 1.0 | 2 | 6 | 75 | 4.2 | 0.7 | 3 | 6 |
| Relationships with patients | | | | | | | | | | |
| Communication with patients | 98 | 4.4 | 0.9 | 2 | 6 | 83 | 4.3 | 0.7 | 3 | 6 |
| Communication with carers and/or family* | 98 | 4.4 | 0.9 | 2 | 6 | 83 | 4.2 | 0.7 | 3 | 6 |
| Respect for patients and their right to confidentiality | 102 | 4.5 | 0.7 | 3 | 6 | 85 | 4.3 | 0.7 | 3 | 6 |
| Working with colleagues | | | | | | | | | | |
| Verbal communication with colleagues | 113 | 4.4 | 0.9 | 2 | 6 | 87 | 4.2 | 0.7 | 2 | 6 |
| Written communication with colleagues | 100 | 4.3 | 0.8 | 3 | 6 | 86 | 4.3 | 0.6 | 2 | 6 |
| Ability to recognise and value the contribution of others | 113 | 4.5 | 0.8 | 2 | 6 | 88 | 4.3 | 0.8 | 1 | 6 |
| Accessibility/reliability | 108 | 4.6 | 0.8 | 3 | 6 | 88 | 4.5 | 0.7 | 2 | 6 |
| Overall, how do you rate this doctor's performance? | 113 | 4.3 | 0.8 | 2 | 6 | 87 | 4.3 | 0.7 | 2 | 6 |

Wilcoxon signed-rank test for individual differences,  *$p<0.05$

---

*Participant evaluations of GIPSIE sessions from weekend workshop and end of sessions*

**Learning objectives:** Participants' ratings of the degree to which they met learning objectives are summarised (Table 1). There were 37 learning objectives. Participants rated the degree to which they met the learning objectives from 3.8 to 5.1 (SD 0.5-1.0; maximum score=6). Mean scores exceeding 5.0 were for the objectives:

*Discuss challenges facing IMGs in Gippsland; Identify a patient with stroke; Identify different stroke symptoms;* and *Identify different*

*aetiologies of stroke*; *Discuss management of patients with commonly occurring surgical emergencies; Rehearse and reflect on technical skills for resuscitation; and Rehearse and reflect on skills for communicating medical information via telephone.*

The first learning objective is generic and could apply to any program designed to support IMGs. The others relate to clinical and professional skills typifying emergency situations which junior doctors and IMGs in a new clinical context are likely to experience.

**Pre-program**

**Areas of strength**

*Dr X has demonstrated that he has the assessment and clinical skills to undertake the role of an Emergency Dept HMO.*

**Areas for development**

*X needs to address his communication skills both with the patient and their families and his colleagues in the workplace.*

*X has unfortunately demonstrated on some occasions some practices and decisions that have been inappropriate and required intervention from senior nurses.*

*X has not always responded to these situations in a positive manner and has not been prepared to discuss with staff at the time what is considered correct hospital policy or procedure for the situation.*

*I believe that as has been demonstrated with previous IMG candidates that X has the ability to acknowledge the skills, experience and knowledge of all his colleagues in the emergency dept both nursing and medical and this will assist him in improving his own skills and practice for his future career pathways.*

**Post-program**

**Areas of strength**

*Knowledgeable*

*Prioritise and manage patient well*

*X cares almost too much for his patients. This may take an emotional toll in the future. He is a fantastic doctor though*

*Progressing well after 12/12. Extremely thorough.*

*X is an exceptional communicator with colleagues and patients, maintaining professional relationships all times. Especially compassionate with the care of his patients, respecting their rights and values.*

*X is one of the most considerate, patient and caring doctors. I have worked with him for a long time. His focus is the best care for his patient. A pleasure to work with and would highly recommend him as a competent doctor.*

*Asks for second opinion if he is unsure about anything that may affect the patient outcome*

*Nice colleague to work with*

*X has grown into a very capable and reliable doctor.*

*X has learnt to back himself and stand up when he feels he is right.*

*X has developed well in all areas of practice.*

**Areas for development**

*Communication and conflict resolution amongst peers*

*Time management (own)*

*X is a very valued member of our team but does not at times receive the support he requires.*

**Figure 3: Example of free text comments for one participant in multi-source feedback.**

**Educational methods:** A summary of participants' ratings of the value of educational methods in supporting them to meet learning objectives is provided (Table 2). Participants' ratings were between 4.3 and 5.3 (SD 0.4-1.1; maximum score=6). Mean ratings fell within a narrow band. Scores that equalled or exceeded 5.0 were:

*Feedback from tutors on performance in simulation* (session 1);*giving feedback to peers on performance in simulation* (session 1)*; observing simulations* (session 2); *viewing simulation on iPods* (sessions 1 & 2); *the GIPSIE website* (session 2); *session guide* (session 3); *SimMan simulations* (session 3); *telephone communication simulations* (session 3); and *discussion of case presentations* (session 4).

**Strengths of the program:** Free text showed that participants enjoyed the experience enormously. They valued the variety of learning methods, focused individualised instruction and feedback, the experience of participating and observing simulated consultations (including the opportunity to integrate all elements of performance), audiovisual review of their own performance and the opportunity to explore clinical knowledge and skills in an integrated manner. Didactic sessions were also highly appreciated.

**Areas for improvement of the program:** The main area for improvement included constraints on time to complete all activities. Suggestions were made to align scenarios more closely with participants' needs to pass the Australian Medical Council (AMC) examinations. Participants wanted more of what they valued above including individual feedback, access to materials before the session, opportunities for all participants to rotate through all simulations, improved peer feedback and better quality audio in the observation rooms.

### Telephone follow up

Key themes from telephone interviews conducted 3 months after completing the program revealed overwhelming satisfaction. Participants were impressed with the allocation of resources to support their learning. Some participants remained uncertain of the purpose of GIPSIE. They had come to the program for diverse reasons and expected support for passing examinations. With respect to content, participants varied in their needs. Some wanted a combination of clinical management and communication while others preferred communication only. Clinical management was reported not to necessarily target the right level or align with participants' practices. For educational methods, the most highly valued experience was role-play, real time feedback on their performance and the communication skills sessions. Participants enjoyed and reported benefits from simulation, especially SPs. They wanted more scenario-based learning. They appreciated the opportunity to work in small groups. They wanted more and longer sessions. The use of the iPod to review audiovisual clips was valued, and for some it was the first opportunity to see themselves performing. Although valued, online learning was not always accessible and connection speeds were too slow. Elements of the website were considered hard to use and not updated. However, participants proposed the website be made available to all clinicians, a move that would create a virtual network of resources and expertise relevant to medical practice in Gippsland. All participants would recommend the program. Participants enjoyed the networking during the course but this has not been sustained. Finally, participants requested more guidance on making sense of MSF results.

## Discussion

The GIPSIE program is supportive of the development of professional and clinical skills for IMG participants in Gippsland. This is evidenced by the participants' responses to GIPSIE sessions and their self-reported improvements expressed during telephone interviews conducted 3 months later. The MSF results also indicate

that for some variables the program was especially valuable (technical skills, teaching skills and communication with patients' relatives). These changes were also detected 3 months after the program suggesting retention of learning. Free text on MSF forms from colleagues of the participants present an overwhelmingly positive outcome. Additionally, GIPSIE appeared to provide benefits that are not easily measured but likely to have a powerful impact on retention, professional development and safety. That is, the development of a collegial culture in which clinicians feel comfortable to seek help when help is needed, rather than working beyond their competence.

The massed and distributed nature of the program enabled the development of a supportive learning community. The collaborative approach between local clinicians and GMS was a unique strength of the program. Without continued program support, this learning community is likely to fade.

The learning needs of IMG participants in the GIPSIE program reflect those identified in the literature and related to communication and all aspects of clinical practice[12-14,20,21,36]. The challenges of being an IMG in Gippsland related to cultural, professional and social differences are also reflective of the broader experience[7,11,12,20]. The content and educational methods were appropriate for the participants even though they were a disparate group of learners.

Participants consistently expressed a need for support in passing high-stakes examinations. Although this was not the goal of the program, the supportive learning community contributed to the development of effective study approaches.

GIPSIE differed to orientation programs because it was not undertaken prior to commencing employment roles. The program was also characterised by its range of educational activities, in particular the learning needs analysis, the website and simulation-based activities. A

feature of the evaluation methodology is the MSF which aimed to capture data that showed change in actual practice, rather than simply participant response to the program.

## Multisource feedback

The positive comments in free text cannot be confidently attributed to GIPSIE alone. The opportunity to learn in the workplace is likely to have been an important variable in developments. It had been hoped that participating in GIPSIE would instil a culture of learning, facilitating participants to seek help and guidance from peers and others in the workplace, and to recognise that it is important and acceptable to acknowledge areas that require development so others can support their learning. It was also interesting that participants became better teachers after GIPSIE, perhaps acknowledging that they too had something important to offer their peers and colleagues. An aim had been to instil a culture of learning.

## Simulation-based education

Participants considered the simulation-based education a positive feature of GIPSIE. Despite minimal experience of simulation-based education, participants quickly responded positively to the range of simulation methodologies, including observing, active involvement, providing or receiving feedback. They consistently rated this type of learning as the most effective educational method of the GIPSIE program. The careful orientation to simulation-based activities is likely to have facilitated success. Although valued, feedback from simulated patients needed further development.

## Web-based delivery of modules

Although participants valued the web-based delivery of educational materials, particularly during the weekly sessions, there were constraints on their subsequent uptake. Busy clinical practice and other responsibilities

outside work reduced involvement. Access to materials was often not available in workplaces where they would most likely benefit from access to resources 'just in time' (ie access the the right knowledge, attitudes and skills when it is needed). The GIPSIE website has enormous potential as a regional learning resource. Development of online resources to demonstrate clinical practice is highly desirable. There is potential for much greater use of the capabilities of web-based learning. Blogs, wikis and other interactive methods have been shown to be beneficial in other educational settings[37,38]. Despite the challenges most participants experienced in web-based learning, participants proposed that the GIPSIE website be made available to a wider group of clinicians (and students). Promoting this culture of non-hierarchical learning was a very positive outcome.

The GIPSIE website could provide access to needed just-in-time resources, but it also could sustain a virtual community of IMGs with supportive faculty. The forthcoming National Broadband Network could be exploited to revitalise this resource. The website could also be expanded to provide information about local Gippsland communities and events in order to provide direction to IMGs attempting to assimilate into areas of Gippsland. This medium could be used to track participants' attempts to apply knowledge, skills and attitudes addressed by GIPSIE within the clinical context by means of added features, for example blog posts reporting what challenges are encountered and how these might be overcome in the workplace.

### Limitations

Although very comprehensive, there are limitations to the evaluation. The sample is small and highly selective and, therefore, may not reflect a broader IMG population. GIPSIE was developed and implemented by faculty committed to supporting IMG education and so may not readily transfer to other settings. Self-report was used as one measure of progress. There is evidence that such data can be unreliable when participants lack

insight or may be influenced by other factors (eg social desirability)[39,40]. However, this was addressed by adopting other evaluation measures such as MSF.

### Future directions

The sustainability of programs such as GIPSIE requires significant human and physical infrastructure. High quality 'patient-safe' training is resource-intensive. Building further capacity across the region will be a major goal given the pressures under which medical and other healthcare professionals are already working. However, this is viewed as a positive challenge and if the infrastructure is in place – web site, high quality learning materials, simulation facilities and expertise to support simulation-based education – then the task will be easier. Providing simulation scenarios that align with the AMC's Anthology of Medical Conditions[41] would ensure systematic coverage of important clinical practice. Offering additional sessions would be educationally sound and provide opportunities to refresh skills and develop new ones in a 'safe learning environment' away from the pressure of clinical practice but still in a familiar place with supportive colleagues. This would also provide a forum to maintain the network. Given that some of the IMGs intend to remain in Gippsland this is a potentially critical longer term support. Future evaluation strategies could also adopt online capture of participants' responses to the program and reflections on clinical practice. Innovative work has been conducted with IMGs using this technique[42].

## Conclusions

The GIPSIE program provided a proof of concept that it is possible to support the professional development of IMGs working in a rural clinical context. This support was developed and tailored to address self and other identified learning needs. Having an educational hub at the Gippsland Medical School with attendant resources supported this endeavour. The program also facilitated

the development of a network of directors of medical services in Gippsland representing a wide range of service provision challenges facing these IMGs.

Several aspects of the program should be highlighted – the content of teaching, and that learning was focussed on the learners' areas of need – as having the potential to maximise its impact. The design of the program being consistent with the principles of contemporary evidence-based medical education was likely to have contributed to its success. Participants enjoyed the experience, reported sustainable gains in learning, and wanted more of the same to enhance their development as effective and efficient practitioners.

GIPSIE required a significant investment of resources both on the part of learners and teachers. It would be useful to explore ways to sustain the returns from this initial implementation by recruiting GIPSIE graduates to provide structured support to new IMGs if the program is funded to continue. Also, because assessment clearly drives learning, some program content could address components of the AMC examination, a clearly identified concern for many participants.

## Acknowledgments

## References

1. Medical Training Review Panel, Australian Government Department of Health and Ageing. *Overseas Trained Doctor Subcommittee Report*. Canberra, ACT; Medical Training Review Panel, 2004.

2. Confederation of Postgraduate Medical Education. *International medical graduates*. Melbourne, VIC: Confederation of Postgraduate Medical Education Councils, 2004.

3. Hawthorne L, Birrell B, Young D. *The retention of overseas trained doctors in general practice in regional Victoria*. Melbourne, VIC: Rural Workforce Agency Victoria, 2003.

4. Swierczynski M. Induction courses for international doctors. *BMJ* 2002; **325(S159):** 00-00.

5. Sullivan E, Willcock S, Ardzejewska K, Slaytor E. A pre-employment programme for overseas-trained doctors entering the Australian workforce. *Medical Education* 2002; **36:** 316-621.

6. Alexander C, Fraser JD. Education, training and support needs of Australian trained doctors and international medical graduates in rural Australia: a case of special needs? *Rural and Remote Health* **7(2):**681. (Online) 2007. Available: www.rrh.org.au (Accessed 29 November 2011).

7. Spike NA. International medical graduates: the Australian perspective. *Academic Medicine* 2006; **81(9):** 842-846.

8. Arkles RS, Hill PS, Jackson Pulver L. Overseas - trained doctors in Aboriginal and Torres Strait Islander health services: many unanswered questions. *Medical Journal of Australia* 2007; **186(10):** 528-530.

9. Birrell RJ. Australian policy on overseas-trained doctors. *Medical Journal of Australia* 2004; **181(11-12):** 635-639.

10. Arvier PT, Walker JH, McDonagh T. Training emergency medicine doctors for rural and regional Australia: can we learn from other countries? *Rural and Remote Health* **7(2):**705. (Online) 2007. Available: www.rrh.org.au (Accessed 29 November 2011).

11. Alexander C, Fraser J. Professional career needs of GPs and registrars working in northwestern NSW. *Australian Family Physician* 2005; **34(12 Suppl):** 7-9.

12. Hays R. Self assessed learning needs of rurally based IMGs. *Australian Family Physician* 2005; **34(4):** 295.

13. McDonnell L, Usherwood T. International medical graduates - challenges faced in the Australian training program. *Australian Family Physician* 2008; **37(6):** 481-484.

14. McGrath BP. Integration of overseas-trained doctors into the Australian medical workforce. *Medical Journal of Australia* 2004; **181(11-12):** 640-642.

15. Nasmith L. Programs for international medical graduates. *Canadian Family Physician* 1993; **39:** 2549-2553.

16. Curran V, Hollett A, Hann S, Bradbury C. A qualitative study of the international medical graduate and the orientation process. *Canadian Journal of Rural Medicine* 2008; **13(4):** 163-169.

17. Carlier N, Carlier M, Bisset G. Orientation of IMGs: a rural evaluation. *Australian Family Physician* 2005; **34(6):** 485-487.

18. Pilotto LS, Duncan GF, Anderson-Wurf J. Issues for clinicians training international medical graduates: a sytematic review. *Medical Journal of Australia* 2007; **187(4):** 225-228.

19. Ericsson K. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Academic Medicine* 2004; **79(10):** S70-S81.

20. Lave J, Wenger E. *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press, 1991.

21. Wenger E. *Communities of practice: learning, meaning and identity*. Cambridge: Cambridge University Press; 1998.

22. Boud D, Keogh R, Walker D. Promoting reflection in learning. In: R Edwards, A Hanson, P Raggat (Eds). *Boundaries in adult learning*. New York: Routledge, 1996.

23. Schon D. *The reflective practitioner: how professionals think in action*. London: Temple Smith, 1983.

24. Schon D. *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass, 1987.

25. Knowles M. *The adult learner: a negelected species*. Houston, TX: Gulf, 1973.

26. Confederation of Postgraduate Medical Education Councils. *Australian Curriculum Framework for Junior Doctors*. Available: http://curriculum.cpmec.org.au/ (Accessed 6 December 2011).

27. Postgraduate Medical Council of Victoria. *Working in Victoria's Public Hospitals: An Orientation manual for International Medical Graduates* v10. (Online) 2009, updated 2011. Available: http://www.pmcv.com.au/img/orientation/orientation-manual (Accessed 6 December 2011).

28. Kneebone R, Nestel D. Learning clinical skills - the place of simulation and feedback. *Clinical Teacher* 2005; **2(2):** 86-90.

29. Maguire P, Fairbairn S, Fletcher C. Consultation skills of young doctors: I -Benefits of feedback training in interviewing as students persist. *BMJ* 1986; **292:** 1573-1578.

30. Maguire P, Pitceathly C. Key communication skills and how to acquire them. *BMJ* 2002; **325:** 697-700.

31. Nestel D, Kneebone R, Barnet A. Evaluation of a clinical communication programme for perioperative and surgical care practitioners. *Quality and Safety in Healthcare* 2010; **19:** 1-7.

32. Kneebone R, Bello F, Nestel D, Yadollahi F, Darzi A. Training and assessment of procedural skills in context using an Integrated Procedural Performance Instrument (IPPI). *Studies in Health Technology and Informatics* 2007; **125:** 229-231.

33. Kneebone R, Kidd J, Nestel D, Asvall S, Paraskeva P, Darzi A. An innovative model for teaching and learning clinical procedures. *Medical Education* 2002; **36(7):** 628-634.

**34**. Kneebone R, Nestel D, Bello F, Darzi A. An Integrated Procedural Performance Instrument (IPPI) for learning and assessing procedural skills. *Clinical Teacher* 2008; **5:** 45-48.

**35**. Higham J, Nestel D, Lupton M, Kneebone R. Teaching and learning gynaecology examination with hybrid simulation. Clinical Teacher 2007; **4:** 238-243.

**36**. Nasmith L. Programs for international medical graduates. *Canadian Family Physician* 1993; **39:** 2549-2553.

**37**. Chumley-Jones HS, Dobbie A, Alford CL. Web-based learning: sound educational method or hype? A review of the evaluation literature. *Academic Medicine* 2002; **77(10 Suppl):** S86-93.

**38**. Ruiz JG, Mintzer MJ, Leipzig RM. The impact of E-learning in medical education. *Academic Medicine* 2006; **81(3):** 207-212.

**39**. Duffy FD, Holmboe ES. Self-assessment in lifelong learning and improving performance in practice: physician know thyself. *JAMA* 2006; **296(9):** 1137-1139.

**40**. Eva KW, Regehr G. Self-assessment in the health professions: a reformulation and research agenda. *Academic Medicine* 2005; **80(10 Suppl):** S46-54.

**41**. Australian Medical Council (Ed.). *Anthology of medical conditions*. Canberra, ACT: Australian Medical Council, 2003.

**42**. Crompvoets S. Using online qualitative research methods in medical education. *International Journal of Multiple Research Approaches* 2010; **4(3):** 206-213.

---

**Correction**:  On 26 February 2013 the second author's surname was corrected.