Vertical Integration in Teaching And Learning (VITAL): an approach to medical education in general practice

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ABSTRACT

- There is increasing demand to provide clinical and teaching experiences in the general practice setting.
- Vertical integration in teaching and learning, whereby teaching and learning roles are shared across all learner stages, has the potential to decrease time demands and stress on general practitioners, to provide teaching skills and experience to GP registrars, and to improve the learning experience for medical students, and may also help meet the increased demand for teaching in general practice.
- We consider potential advantages and barriers to vertical integration of teaching in general practice, and provide results of focus group discussions with general practice principals and registrars about vertical integration.
- We recommend further research into the feasibility of using vertical integration to enhance the capacity to teach medical students in general practice.

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For editorial comment, see page 66. See also pages 124 and 129

There is an increasing demand to deliver medical education in general practice. With the trend for hospitals to evolve into highly specialised centres with high throughput and short patient stay,[1] there is an associated shift in medical education (along with the patients) from the hospital environment to the community setting. The latter affords medical students and doctors the opportunity to see and manage common problems and chronic diseases, to put preventive health care into practice, to see patients in the context of their family environment, and to experience continuity of care — major medical curriculum learning objectives that are not so readily met in the hospital setting.

In response to a shortage of medical practitioners, Australia has seen a substantial increase in the number of medical students and new medical schools. From 2005 to 2012, the number of domestic medical graduates is projected to increase by 81% (1348 to 2442), and international graduates by 92% (260 to 500).[2] A flow-on effect will be a difficulty in finding placements for junior graduates, which have traditionally been entirely in hospitals. A proposed solution is for prevocational graduates to be rotated through a general practice term; this is already occurring in some regions.[3]

This shift of medical education into the community is inevitably having a significant impact on general practice service delivery and resources. It is crucial that an expanded educational role for general practitioners does not become burdensome nor cause "burnout" for already busy practitioners, especially when it is predicted that the GP workforce will likely face continued chronic shortages.[4] While recruiting more GPs to educate medical students will help increase the number of community placements for students (it is estimated that only 48% of GPs work in a medical practice that provides training for medical students or GP registrars[5]), other approaches are also needed to overcome the problem.

Vertical integration in general practice education

The concept of vertical integration can mean many things. General Practice Education and Training (GPET), the Commonwealth body funded to administer vocational general practice training in Australia, defines the vertical integration of GP education and training as "the coordinated, purposeful, planned system of linkages and activities in the delivery of education and training throughout the continuum of the learner's stages of medical education", with the learner's stages including medical school, prevocational hospital training, vocational training, and continuing professional development.[6] Formed in 2001, GPET has developed a national framework which supports one of its objectives: to promote the vertical and horizontal integration of general practice education and training at a regional level.[6] GPET suggests that the application of this framework, which may be used by governments, other education providers and policy-makers, will require flexibility and diversity in the use of vertical integration models.[6]

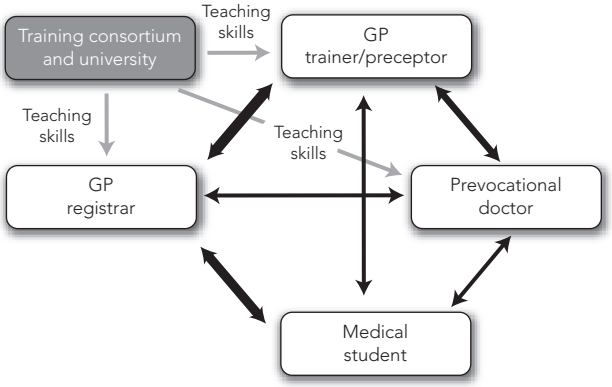
A model that supports the concept of learning as a symbiosis,[7] and could be considered in the application of GPET's national framework, is the sharing of teaching and learning roles across all the learner stages. It is of note that the current curriculum of the Royal Australian College of General Practitioners includes, for the first time, a statement on teaching as a core component of the GP and GP registrar role.

While much medical student training in the hospital setting is provided by registrars (with benefits reported for both students and registrar equivalents when teaching skills courses have been provided[8,9]), this is seldom the case in general practice. Although GP registrars are present in many practices that take students, most of the training is given by experienced GPs. Possible reasons for this include the historical separation of medical student and GP training, with no coordination of practices used for these two educational purposes; the limited time spent by medical students in general practice in traditional medical programs, and hence less need for student teaching in general practice (which has changed with modern medical curricula which require substantial general practice contact); the limited time scale to develop effective teaching models in this clinical context; and the broad clinical nature of general practice, in which a relatively inexperienced doctor may take longer to feel competent.

Advantages of vertical integration

While the factors influencing the teaching and learning of medical students in the clinical setting are well known, little published literature directly addresses vertical integration of teaching in Australian general practice. However, in a report on case studies on vertical integration for two working groups established by GPET, Glasgow and Trumble reported potential advantages of vertical integration in general practice; those specifically relevant

1 The VITAL (Vertical Integration in Teaching and Learning) in General Practice Model



to the sharing of teaching and learning roles across the learner phases include:

- increased collegiality between students, interns, registrars and GPs;
- enhanced credibility of teachers — medical students can engage with teachers who are closer and possibly more "connected" to their situation;
- creation of an environment for learners to share learning activities with their teachers, and thus to watch their teachers learn;
- enhancement of the expertise, enthusiasm and satisfaction of teachers by having them involved in different stages of the continuum of the education process; and
- realisation of efficiencies.[10]

In addition, we expect that sharing the teaching load would lead to:

- time efficiencies for the practice, particularly the GP trainer;
- broadening of the range of learning experiences for students, prevocational graduates, registrars and GP trainers/preceptors;
- enhancement or acquisition of teaching skills for registrars and GP trainers/preceptors;
- development of high-quality teaching practices and GP role models for students and registrars, which might in turn generate enthusiasm for general practice as a specialty vocation; and
- the potential to supervise increased numbers of students and registrars within the practice.

We also expect that the provision of training in teaching skills and the relationship between experienced GPs and GP registrars as fellow teachers would enhance the overall quality of teaching provided to medical students.

Barriers to vertical integration

Glasgow and Trumble also reported a range of potential barriers to vertical integration including:

- limited physical resources, including space and information technology infrastructure;
- "change weariness" for those providing and receiving education;
- lack of financial resources, such as ongoing support for maintaining current program delivery and for innovative program development; and
- program issues, such as dealing with large variability in prior learning experiences of students and registrars.[10]

We also anticipate the following potential challenges:

- variable commitment and teaching skills of GP trainers/preceptors;
- variable commitment and teaching skills of registrars and prevocational graduates, which may in turn increase the burden for GP trainers/preceptors;
- ensuring fair teaching loads and appropriate remuneration for non-salaried registrars; and
- evaluating the quality and quantity of teaching and learning experiences of all participants.

Most of these challenges also apply to hospital-based teaching; the lack of integration and potential medical workforce shortages within hospital-based postgraduate education have received significant attention recently.[11,12]

Applying theory to practice

In preparation for a working trial of vertical integration in the general practice setting, we have developed a conceptual model — the VITAL (Vertical Integration in Teaching And Learning) model (Box 1). VITAL is based on educational theory about vertical integration and on our hypothesis that teaching conducted by GP registrars will help link the different stages of learning and alleviate some of the pressures on the teaching workforce.

The bidirectional arrows in the model indicate that, in any interaction, learning occurs for both the parties involved. The width of the arrows reflects the load of teaching between individuals; this amount varies according to their skills, expertise and motivation. In this model, while the GP trainer/preceptor retains a commitment to teaching junior doctors and medical students, he or she is not the sole person contributing to this teaching load; the teaching load is shared among all involved.

With approval from the Behavioural and Social Sciences Ethical Review Committee of the University of Queensland, we conducted a series of focus groups to "scope" the project (Box 2). Information from the literature and our focus groups guided the development of a pilot project which is currently testing the feasibility of GP registrars' involvement in teaching medical students. Both qualitative and quantitative data are being collected to guide development of a more detailed trial.

The VITAL model represents a possible implementation strategy for the GPET national vertical integration framework. We hope that it will inform the development of a formal educational trial comparing vertical integration of teaching against current, standard teaching arrangements. It is an approach that may help to address the increased demand placed on medical education in the general practice setting. However, a range of approaches are needed to address the increasing shift of medical education into the community — approaches that provide quality educational experiences for participants at all levels, while maintaining quality service delivery to patients and avoiding negative impacts on resources.

Competing interests

None identified.

2 Focus group discussions on vertical integration of teaching and learning in general practice

Aims of the focus groups

- To assess the feasibility of the VITAL project and to aid recruitment of participants.
- To expand on relevant issues described in the literature that may potentially affect the efficacy of the project.

Participants

Three groups participated:

- Eight general practitioner registrars who were more than 6 months into their general practice-based training;
- Four GP trainers/preceptors who had taken four or more medical students during 2006; and
- Seven GP trainers/preceptors who had taken fewer than four medical students during 2006.

Methods and analysis

Focus group questions were derived from key findings in the published literature. The focus groups followed a semi-structured interview format.

The focus groups with the GP trainers were conducted by teleconference and were tape recorded. Detailed contemporaneous notes were taken by an observer (S J G). The registrar focus group was face to face at a training meeting.

Each set of meeting notes was read by two of the authors (S J G, G K M). A grounded theoretical approach was taken, where the observer does not enter the research with propositions to be tested, but rather propositions are constructed on the basis of careful observation and analysis of the evidence gathered.[13] Themes and sub-themes were generated by an iterative process.

Emergent themes

Working conditions and remuneration

Working conditions and remuneration were the key issues for GP registrars. They were concerned that teaching would slow their patient rate and thus affect their income (usually a fixed percentage of fees generated or a minimum weekly salary, whichever is greater), while the GP trainers/preceptors would be the ones most likely to receive the Practice Incentive Program (PIP) payments. (Practices that teach medical students are eligible for a PIP payment from the Australian Government of $100 per session of teaching, with a maximum of two sessions per day.[14]) Prior agreements to address these potential problems were considered essential.

Need to be trained in teaching

GP registrars described a need to acquire teaching skills. They saw considerable benefit for medical students in being taught by those who were closer to them in experience. They felt themselves able to promote general practice in a more meaningful way to medical students.

GP trainers/preceptors agreed on the need for focused training in overseeing the teaching program in their practice and in giving feedback to GP registrars on their teaching skills.

Registrar participation

GP trainers/preceptors recognised that not all registrars would be capable of taking part — voluntary participation would be essential. However, they did see the potential for enormous benefits for medical students and registrars, with increased self-esteem and new skills, and a benefit for themselves in having more time available.

GP trainers/preceptors regarded the setting up of a clear infrastructure as vital. Gaining the willing cooperation of others in the practice was also seen as critical to the success of such a program. ◆

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References

1 Sen Gupta T, Spencer J. Why not teach where the patients are? *Med Educ* 2001; 35: 714-715.
2 Joyce CM, Stoelwinder JU, McNeil JJ, Piterman L. Riding the wave: current and emerging trends in graduates from Australian university medical schools. *Med J Aust* 2007; 186: 309-312.
3 Grace K, Bradford CJ. Community and general practice terms for prevocational junior medical officers: experience and development in South Australia and Western Australia. *Med J Aust* 2007; 186 (7 Suppl): S28-S30.
4 Joyce CM, McNeil JJ, Stoelwinder JU. More doctors, but not enough: Australian medical workforce supply 2001–2012. *Med J Aust* 2006; 184: 441-446.
5 Australian Health and Welfare General Practice Statistics and Classification Unit, University of Sydney, NSW. General practitioners in teaching practices. *Aust Fam Physician* 2004; 33: 682.
6 General Practice Education and Training. A framework for vertical integration in GP education and training Canberra: GPET, 2004.
7 Worley P, Prideaux D, Strasser R, et al. Empirical evidence for symbiotic medical education: a comparative analysis of community and tertiary-based programmes. *Med Educ* 2006; 40: 109-116.
8 Bensinger LD, Meah YS, Smith LG. Resident as teacher: the Mount Sinai experience and a review of the literature. *Mt Sinai J Med* 2005; 72: 307-311.
9 Busari JO, Scherpbier AJ. Why residents should teach: a literature review. *J Postgrad Med* 2004; 50: 205-210.
10 Glasgow N, Trumble S. Final report on the case studies on vertical integration for the AAAGP/ADGP GPET working party. Canberra: General Practice Education and Training, 2003.
11 Foote AM. Medical education registrars: new thoughts on old problems [letter]. *Med J Aust* 2007; 186: 431-432; author reply: 432.
12 McGrath BP, Graham IS, Crotty BJ, Jolly BC. Lack of integration of medical education in Australia: the need for change. *Med J Aust* 2006; 184: 346-348.
13 Strauss A, Corbin J. Basics of qualitative research. Techniques and procedures for developing grounded theory. 2nd ed. Thousand Oaks, Calif: Sage Publications, 1998.
14 Medicare Australia. Practice Incentives Program (PIP). http://www.medicareaustralia.gov.au/providers/incentives_allowances/pip.htm (accessed Apr 2007).

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