darcy associates
consulting services
ABN 24 249 677 670

Best Practice Clinical Learning Environments Within Health Services for Undergraduate and Early-Graduate Learners

Final Report

February 2009

Foreword

A note about language and terminology

This report documents a project aimed at synthesising a single set of guiding principles for establishing and maintaining high quality clinical learning environments that can be applied across all health professions and in all health service delivery settings. As might be expected, the challenges of collecting data for seven health professions from eight Victorian universities, dozens of health services and hundreds of learners were considerable.

As it transpired, one of the most challenging aspects of the project was the preparation of this report – particularly the best practice framework contained therein – specifically the use of appropriate language and terminology.

There is no single, agreed set of terms in relation to clinical education used across the spectrum of health professions. Indeed, even within professions, several terms may be used to refer to the same type of activity, reflecting different educational models used by different training providers. For example, a *clinical placement* at one university may be referred to as a *clinical rotation* by another university. Alternatively, a clinical *placement* may include a number of *rotations* to different wards or specialist streams. Furthermore, while both undergraduate students and early-graduates may undertake *rotations*, *placement* is a term not usually used in relation to early-graduates.

There are similar problems when referring to the individuals who deliver education. In some professions, a *clinical educator* is a generic term for any clinician who imparts knowledge and skills to learners; in other professions, a *clinical educator* is a very specific and defined role. There are also *clinical teachers*, *clinical facilitators* and *clinical support* and a clinical *teacher* in one setting may be referred to as a clinical *facilitator* in another setting.

Even use of the term *clinical* is problematic for professions such as social work, where many aspects of the work do not involve seeing patients (or *clients*) in settings that would be classified as 'clinical'.

There is a reasonably clear and accepted distinction between *student* (a person enrolled in a course that will lead to a professional qualification) and *graduate* (a person who has completed their professional qualification). However, *trainee* is not consistently used across professions. Furthermore, while *education* is usually used in relation to structured entry-level professional courses for students and *training* is a less structured activity that occurs post-qualification, the two terms are often used interchangeably. To add to the complexity, terms such as *education continuum* and *professional education* blur the distinction that *education* refers to student learning activities.

Feedback received from the Stakeholder Reference Group on the draft framework was sometimes contradictory in relation to appropriate terminology and usage, suggesting there is no simple solution to this issue in presenting the following report. Regardless of which term is used (and however many alternatives or equivalents are listed), it is not possible to be totally inclusive of all target audiences and stakeholders without making the report and framework unreadable.

Therefore, the language used throughout this report is deliberately generic. That is, unless a very specific meaning is intended, broad terms have been used and terms have been used in their broadest meaning. Where needed, specificity has been indicated by the inclusion of specific adjectives or other qualifiers. For example, the term *learner* is used throughout the report; unless it has been used in conjunction with *undergraduate* or *early-graduate* or *professional*, then it should be read as potentially applying to learners at any level. Similarly, words such as *education*, *educator*, *training*, *placement*, *rotation* and *patient* should be interpreted in their broadest sense and seen as being inclusive of discipline-specific variations or equivalents as appropriate.

Table of Contents

Abbreviations

AASW	Australian Association for Social Workers
ACT	Australian Capital Territory
ALS	Advanced Life Support
ANMC	Australian Nursing and Midwifery Council
ANOVA	Analysis of Variance
AV	Audio visual
BLS	Basic Life Support
BPCLE	Best Practice Clinical Learning Environment
CDP	Career Development Programme
CEDU	Continuing Education and Development Unit
CEO	Chief Executive Officer
CEPD	Centre for Education and Practice Development
CLEAR	Clinical Learning Environment Approval Rating
CLEI	Clinical Learning Environment Inventory
CLES	Clinical Learning Environment Scale
CNED	Clinical Nursing Education Department
COAG	Committee of Australian Governments
CPC	Clinico-Pathological Conference
CPE	Continuing Professional Education
CRC	Community Rehabilitation Centre
CS	Clinical Support
CSC	Clinical Skills Centre
CSN	Clinical Support Nurse
CSP	Commonwealth Supported Place
CT	Clinical Teacher
DHS	Department of Human Services
DREEM	Dundee Ready Education Environment Measure
EFT	Equivalent Full-Time
GMC	General Medical Centre
GMS	Gippsland Medical School
GNP	Graduate Nurse Programme
GNYP	Graduate Nurse Year Programme
GP	General Practice
HITH	Hospital in the Home
HMA	Healthcare Management Advisors
HMO	Hospital Medical Officer
HR	Human Resources
HREC	Human Research Ethics Committee
IMG	International Medical Graduate
IRC	Inpatient Rehabilitation Centre
IQR	Inter-quartile range

LAMP	Latrobe and Monash Partnership
LRH	Latrobe Regional Hospital
MAP	Monash at Peninsula
MEU	Medical Education Unit
NBV	Nursing Board of Victoria
NS	Non-statistically significant
OSCE	Objective Structure Clinical Examination
OT	Occupational Therapy
PDN	Professional Development Nurse
PHEEM	Postgraduate Hospital Education Environment Measure
PLE	Positive Learning Environment
PMCV	Postgraduate Medical Council of Victoria
QA	Quality Assurance
QOTFC	Queensland Occupational Therapists Fieldwork Collaborative
RMIT	Royal Melbourne Institute of Technology
RTO	Registered Training Organisation
SDU	Staff Development Unit
SPSS	Statistical Package for the Social Sciences
SRG	Stakeholder Reference Group
SRH	School of Rural Health
TAFE	Technical and Further Education
UK	United Kingdom
US	United States

Executive Summary

The Department of Human Services (DHS) has developed a comprehensive strategy aimed at enhancing the capacity and quality of clinical placements in medicine, nursing and allied health in Victoria. This strategy promotes an integrated approach to allocation and use of existing resources, innovation and efficiency in the development of new resources, and planning and funding for clinical placements. Within this context, in May 2008 the department commissioned the *Best Practice Clinical Learning Environments* (BPCLE) project, to examine the nature of successful clinical placements for the purposes of developing a best practice framework. It was envisaged this framework would be used by universities and other training providers, health services, educators and learners (both undergraduate and early-graduate) to inform policies, practices and behaviours that improve clinical training experiences for all concerned.

This report details the outcomes and findings of the BPCLE project, which was conducted in four phases over a six-month period. Phases I and II focussed on data collection from across the Victorian clinical education system, to provide a basis for selection of the most appropriate settings in which to conduct case studies. Phases III and IV focussed on data collection and analysis for the case studies and higher level analysis of all data leading to the development of the best practice framework.

This report is presented in eight sections.

Section 1: Introduction – provides context and background for the BPCLE project and describes the approach adopted for the conduct of the project and the methodology used.

Section 2: Literature Review – presents the findings of a thorough analysis of the academic and other literature on clinical learning environments. Findings are presented under three main headings, namely *methods used to study clinical learning environments*, *factors contributing to a clinical learning environment* and *clinical learning environment models*.

Section 3: Interview and Survey Findings – presents the results of the data collection activities involving university clinical education coordinators and undergraduate and early-graduate learners. Semi-structured interviews were conducted with clinical education coordinators from 23 Victorian university programmes covering medicine, nursing and five allied health disciplines (occupational therapy, physiotherapy, podiatry, social work and speech pathology). The consensus of opinion amongst these stakeholders on what constitutes a *positive learning environment* and *best practice* in clinical learning environments is presented. In addition, online surveys were conducted for undergraduate learners (accessed through universities) and early-graduate learners (accessed through health services). Correlation analyses and one-way analysis of variance tests involving the survey data are described. Finally, all of these data were used to select four sites for case study.

Section 4: Case Studies – presents the detailed case study reports for the four selected sites, namely Austin Health, Barwon Health, Latrobe Regional Hospital and Peninsula Health.

Section 5: Best Practice Framework for Clinical Learning Environments – the findings from the case studies, interviews with university clinical education coordinators and the literature review were used to develop a draft best practice framework for clinical learning environments. The draft framework was circulated to a Stakeholder Reference Group (comprising stakeholders from health services, universities and other health professional organisations) for comment. The feedback informed revisions to the draft framework and the revised framework is presented in this section, which is written as a stand-alone document to facilitate its dissemination and implementation.

Section 6: Discussion and Recommendations – provides a brief summary of the major findings of the project and presents five recommendations (see below).

Section 7: Bibliography – includes all references cited in the literature review, as well as references cited elsewhere in the report.

Section 8: Appendices – includes supplementary data for Section 3 (Interview and Survey Findings), as well as a summary of the content of the two surveys used to collect data from the undergraduate and early-graduate learners.

The report and the best practice framework contained therein are timely contributions to the effort to enhance capacity and quality in clinical education in Victoria. The Council of Australian Governments (COAG) agreement of November 2008 included a large increase in funding to support clinical education, reflecting national concern over this issue. The existence of a framework for best practice in clinical learning environments will provide a tool for Victorian health services to assess their current arrangements for delivery of clinical education and allow them to make informed, evidence-based requests to government for additional funds to supplement and improve those arrangements.

Summary of recommendations

Recommendation 1:

This report should be publicly available.

Recommendation 2:

The best practice framework should be implemented in a staged process over the next three years.

Recommendation 3*:*

The best practice framework should be tested for its applicability in non-hospital settings and for health professions not included in this project.

Recommendation 4:

DHS should develop an online resource for health services to support the implementation of the framework and encourage exchange of resources and information.

Recommendation 5:

Health services should use the framework to determine and prioritise their staffing, infrastructure, other resources and support requirements to achieve or maintain best practice in their clinical learning environments. These requirements should be communicated to DHS and to the training provider partners and should serve as the basis for ongoing partnership agreements and funding negotiations.

1 Introduction

1.1 Clinical learning in the context of health professional education

1.1.1 Training of health professionals in Australia

Training of health care professionals in medicine, nursing and allied health disciplines is, in the first instance, driven by the post-secondary education sector, which is responsible for the development of educational curricula for these courses. The major players are universities, as well as Technical and Further Education (TAFE) institutes and other Registered Training Organisations (RTOs). Funding for courses run by public tertiary institutions principally comes through Commonwealth supported places (CSP) for students and eight of the nine universities in Victoria offer courses in one or more health care professions.

The majority of university-based health courses – and some courses offered by other RTOs – include clinical training as an essential component of their curricula. The requirement for clinical training is stipulated in the guidelines of the relevant registration or accreditation bodies. As the standards set by these bodies in relation to undergraduate clinical practice education have been extensively reviewed elsewhere[1] and are outside the scope of this report, they will not be reviewed here.

In most health professions, the need for clinical training extends beyond the undergraduate years well into professional practice, particularly if further specialisation is undertaken. Importantly, the compulsory nature of clinical placements means that a significant share of responsibility for training future health professionals lies with health services, with registered clinicians being the main effectors of educational delivery in those settings.

In recent years, the Commonwealth government has responded to current and projected shortages in the national health workforce by dramatically increasing the number of CSPs in medicine, nursing and allied health courses. Victoria has campaigned successfully to secure a significant proportion of these places and as a result, has seen substantial growth in the number of CSPs allocated to its undergraduate health courses. The increase is necessary to provide the pipeline of health professional graduates needed in Victoria in the next two decades. However, it represents a significant additional impost on an already over-burdened health service sector due to the corresponding increase in the number of clinical placements required to appropriately train these students and the increased number of post-qualification trainees in the system.

1.1.2 Clinical placements in context

Clinical education is teaching and learning that is focussed on – and usually directly involving – patients in clinical settings[2]. Clinical learning experiences, usually delivered to undergraduate students through *clinical placements*, provide students with an opportunity to integrate and apply knowledge, skills and attitudes taught in the classroom or laboratory in a clinical setting. Clinical placements also provide students with the opportunity to learn skills more difficult to teach in a classroom, such as professional conduct and how to establish rapport with a patient.

Clinical placements are unlike any other learning activity a health care trainee will undertake. Although placements may be planned or structured, the fact they rely on patients as their primary method of teaching means they can and do change rapidly and unexpectedly. There are benefits for students in participating in these situations, such as contributing to a team environment and learning to deal with uncertainty. However, clinical placements also provoke anxiety in some students. This anxiety comes from many sources, including lack of confidence in their own knowledge and ability, stress at the prospect of being observed and difficulty in adjusting to an environment where they are expected to *do* rather than *think*[3].

The term *clinical placement* covers a significant variety of activities. Among different health professions clinical placements vary considerably in their format and duration, as well as in

their philosophical underpinnings and educational approaches. Indeed, it has been noted that there is little evidence of interdisciplinary collaboration in the determination of appropriate clinical training requirements, resulting in sub-optimal use of existing resources[3]. Within health professions, there is also considerable variation, with different university courses working from different educational and supervision models and scheduling placements at different stages in their courses and for different periods of time[3].

Not only do clinical placements vary across disciplines they also vary across settings. For example, there will be a broader range of patient illness/injury (and greater opportunity to observe rare conditions) in a large metropolitan hospital compared with a smaller regional health service. On the other hand, a placement in a rural GP clinic will expose the learner to more procedural activity than would a placement in a metropolitan clinic. Similarly, the larger the health service, the more opportunities there are to work within cross-disciplinary teams.

While the total number of hours of clinical education varies considerably between health courses (ranging from less than 500 to over 2,500), placements are part of a *continuum* of education and training for most health professionals. This is illustrated in Figure 1, where the clinical education component of the undergraduate/early-graduate training is represented as a *patchwork* of experiences. The diagram most closely represents the process for training medical practitioners, but analogous stages exist in many other health professions.

Figure 1 shows that clinical education is a continuum that starts during a formal course offered by a university (or other RTO) and continues post-qualification, usually in a less formally structured format. After those early postgraduate years, further vocational or specialist education may occur (depending on the profession); all disciplines engage in ongoing professional education/development that continues throughout professional practice.

Figure 1 also shows there is an expectation that all health professionals will emerge from their individual patchwork of learning experiences with a common set of attributes (as shown at the top of the diagram, to the right of the arrowhead). However, there are many variables that contribute to the overall outcome, such as the learner's own attributes, the attributes of the clinical educators s/he encounters, the resources and patient mix of each education site and other attributes of the curriculum and learning environment.

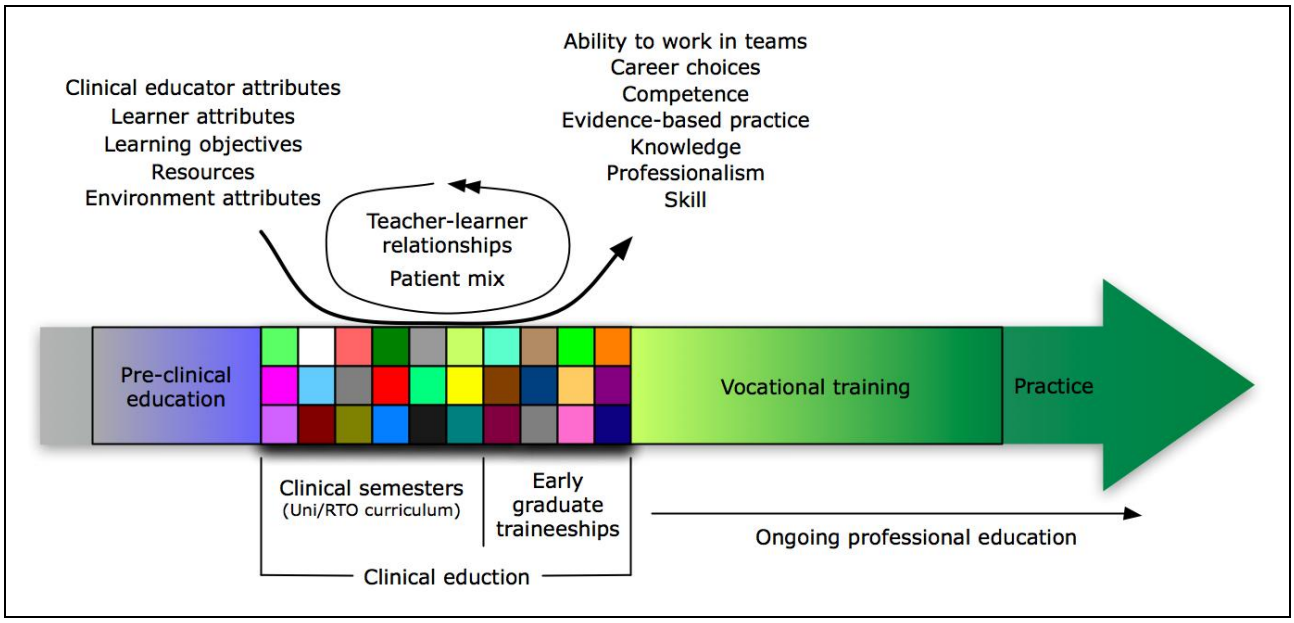

Figure 1: Clinical education within the continuum of health professional education and training

There are two important implications from the model shown above. Firstly, it is unlikely that the education, training, experience and exposure of any two individuals will be identical (even within the same health professional course offered by the same educational institution). Secondly, assessing the relationship between individual clinical education experiences and the

practitioner that emerges from the training is not straightforward. Indeed, most health professions have moved to adopt competency standards as a way of ensuring that graduates who have had very different educational experiences nevertheless meet minimum practice requirements. About half of those professions that have competency standards actively use them as the basis for clinical placements[3].

1.1.3 Clinical placements: meeting the needs of the system

As discussed earlier, clinical placements are an integral component of the training of health care professionals and current registration/accreditation requirements will ensure that this form of clinical education will continue into the foreseeable future. In this regard, clinical placements are important because they meet the needs of the individual professions, providing mechanisms for clinical skills training, for professional socialisation and for integrated learning. For similar and interrelated reasons, clinical placements meet the needs of the universities and RTOs that are funded to provide health professional education. Some of the skills training and integrated learning can be achieved in other settings, for example using simulation or computer-based learning modules. Indeed, there have been moves to incorporate alternative clinical teaching methods into those parts of the curriculum where the requirement for a real clinical environment is not absolute. However, without clinical placements for their students, the education providers would have difficulty delivering their accredited curricula. Of course, as more education providers have entered the arena in each of the health disciplines, this has increased the competition for an already scarce resource.

Although many health services are not convinced clinical placements represent value to their organisation and believe the presence of learners reduces staff productivity[4], clinical placements are essential as they are an integral part of training the health workforce of the future. A major issue for health services is that at a time when there are very large (and growing) demands on their resources for provision of education and training of learners, the health services are also required to increase the productivity of their staff (in terms of patient care). Therefore, while clinical placements represent the future viability of the health system, it is important to find the balance that allows clinical training to meet the needs of the system *within the resourcing capacity* of the health services that comprise the system.

Finally – and most importantly – clinical placements meet the needs of the system because they assist significantly in achieving the desired workforce outcomes. If one were to ask the question "what – in general terms – is the objective of a clinical placement?" the most likely answer would be along the lines *to develop attributes in the learner that will result in a graduate who can contribute productively to the health care system*. In this context, *contribute productively* comprises three main elements:

- *Whether* the graduate works – that is, does the individual complete their training and join the health workforce to practice their profession?
- *How* the graduate works – that is, does the graduate have the necessary knowledge, skills and competency to practice their profession to appropriate standards?
- *Where* the graduate works – that is, is the graduate willing and able to practice their profession in an area of workforce need?

Of course, as illustrated in Figure 1, each clinical placement is only a small part of the overall educational experience of a student. While each placement may be predicated on the same general objective, direct correlation between a single clinical placement experience and the attributes and choices of the graduate is difficult to make. On the other hand, the cumulative impact of the experiences is likely to be important. For example, if a learner has the opportunity to work with the very best exemplars of knowledge, skill and competence in every one of their placements, it is reasonable to expect the learner will also achieve more highly overall than if their exemplars were of a lower standard.

Similar consideration might be given to other elements that contribute to the overall experience a learner has in a clinical setting. Thus, a clinical placement that offers the optimal configurations of staff (both numbers and mix of disciplines), physical and technological

infrastructure, resourcing, patient mix and professional culture is likely to be of more benefit to the learner than one that does not.

It is within this context that the concept of a *positive learning environment* becomes important, because clinical placements show learners what their working life might look like. People tend to gravitate towards those situations that remind them of (or potentially re-create) positive experiences; so positive learning environments can have a significant impact on career choices[5]. Indeed, if none of the clinical placements were positive experiences, a learner might drop out of the course (or leave the profession) altogether. We might also expect that a clinical educator who finds the learning environment in their health service to be positive is more likely to remain at that location. Therefore, the creation and maintenance of positive learning environments can influence workforce recruitment and retention, even if the effect is cumulative. In fact, understanding that the effect is cumulative makes it all the more important to aim for positive learning environments in every setting.

Positive learning environments are also very important for early-graduate learners for similar reasons. Although the early-graduate is a staff member, not a student, s/he is nevertheless on a steep learning curve with the newly added pressure of being professionally responsible for patient care and outcomes. An environment that is supportive of them as they work towards their learning goals is more likely to encourage an early-graduate to stay.

The *positive learning environment* concept is not new, although it has only really been investigated to any significant extent amongst the health professions in the training of nurses[3]. Although it is not a difficult concept to understand at an intuitive level, it is a complex concept to define, in part because it is a relative term. That is, the elements that might make a learning environment positive from a clinical educator's perspective might not be the same elements that make it positive from a learner's perspective.

Taking all these points together, we might consider that a *best-practice teaching and learning environment* will be one that is built on optimal combinations of these factors, which is not to say that all of the factors will necessarily be optimum in their own right. Interestingly, while the concept of *best-practice* is routinely applied to activities within health services, the concept has never been systematically applied to clinical placements or the clinical learning environments in which they are conducted.

As discussed earlier in Section 1.1.1 (Training of health professionals in Australia), health services are currently under significant pressure in respect of delivering clinical education to undergraduate and early-graduate trainees across the spectrum of health professional disciplines. This situation is likely to worsen due to a range of factors, including workforce shortages, large increases in the numbers of students and early-graduates, more education providers entering the arena, significant variability in course structures and educational models, changing models of patient care, and limited funding. In this context, elucidation of best-practice in a clinical teaching and learning environment may provide a roadmap for improving the quality of clinical placements and the efficiency of resource usage within the constraints of the system.

1.2 Background to this project

This project is part of a comprehensive strategy developed by the Department of Human Services (DHS) aimed at enhancing the capacity and quality of clinical placements in medicine, nursing and allied health in Victoria. The department's strategy, articulated in a document published in October 2007 (*Clinical Placements in Victoria: Establishing a Statewide Approach*[6]), promotes an integrated approach to allocation and use of existing resources, innovation and efficiency in the development of new resources, and planning and funding for clinical placements. To achieve its objectives, the department identified a number of key strategic initiatives for 2007–2009 that address issues within five initiative clusters: *planning and evidence*, *capacity building*, *funding*, *relationships and governance* and *innovation*. A number of projects have already been undertaken, particularly in relation to mapping the

training requirements of each health profession and the capacity of the system to accommodate them.

This project, which investigates best practice in clinical learning environments, complements the work to date that has focussed on capacity issues. It also acknowledges that issues of *quality* go hand-in-hand with issues of *quantity* in the development of strategies to deal with increased numbers of undergraduate and early-graduate learners.

In commissioning this project, the DHS was seeking to understand the elements that create a positive learning environment for both undergraduate and early-graduate learners. From this, the objective was to develop a framework that could guide health services (in conjunction with other stakeholders) in shaping their particular circumstances (staffing structures, physical resources and other cultural factors) into clinical learning environments that produce the best possible outcomes for learners, health services and – ultimately – patients. Such a framework (and its associated measures) would also provide DHS with indicators to guide policy development and strategic planning around funding and innovation for future clinical training initiatives.

DHS issued the request for quotation for the project in April 2008 and the contract was awarded in June 2008. The project commenced on 1 July 2008 and the final report was submitted in January 2009.

1.3 Approach

1.3.1 Project conduct and oversight

The project was undertaken by Darcy Associates Consulting Services, who assembled a project team of four consultants led by Dr Donna Cohen. Dr Cohen was responsible for project management, liaison with DHS and was the primary point of contact for project participants and stakeholders.

Oversight of the project was provided by a small DHS Project Group comprising staff from the Service and Workforce Planning Branch and one member from the Nurse Policy Branch. The group included individuals with responsibility for matters relating to medical, nursing or allied health education and training.

1.3.2 Project scope

Terminology

Historically, entry-level health professional courses have been offered as undergraduate university programmes open to school-leaver applicants. There is a growing trend towards graduate-entry courses, which lead to bachelors, masters or even doctoral qualifications. However, most entry-level courses are still offered at undergraduate level and the majority of the higher degree courses produce entry-level practitioners. To avoid confusion between entry-level courses that are offered as postgraduate awards and postgraduate courses for qualified practitioners, the term *undergraduate* is used to refer to entry-level professional courses. Similarly, *student* refers to a person enrolled in any of those courses.

The term *early-graduate* refers to an individual who has completed their entry-level professional qualification within the last two years (see discussion on page 7).

Education and *training* are used interchangeably and use of either term covers all possible meanings of both terms.

The term *clinical learning environment* is used in the broadest sense of the word 'environment', to encapsulate the range of factors that impact on the learning experience. *Clinical rotation* is used to denote the time spent by learners in particular clinical settings. This includes what are more commonly referred to as 'clinical placements' for undergraduate

learners, as well as 'rotations', 'specialty placements' and 'training programmes' for graduate learners. Clinical rotations may be of any duration, ranging from a few days to several months.

The term *clinical* is used throughout this report, since the primary focus of this project is the clinical learning environment. However, it is recognised that some professions (particularly social work) place their learners in non-clinical settings, as well as in clinical settings. To the extent that the principles and concepts discussed in this report relate to non-clinical workplace experiential learning, the term *clinical* should be taken to include those settings.

Selection of health professions to be included in the project

As the best practice framework is intended to apply to all health professions, ideally, all health professions would have been invited to contribute data to the project. However, inclusion of all allied health disciplines would have required a very large number of consultations in both the university and health service data collection components of the project. Some of the disciplines have very small numbers of learners and therefore the inclusion of these disciplines would have yielded relatively little data compared with the effort expended in collecting it.

Therefore, in consultation with the DHS Project Group, it was agreed the project would collect data from seven health professions: medicine, nursing and five allied health disciplines, namely occupational therapy (OT), physiotherapy, podiatry, social work and speech pathology. These allied health disciplines were selected as they were the same disciplines included in the study conducted by Healthcare Management Advisors (HMA) in 2007[4] and represent the overwhelming majority of allied health clinical placement activity. No doubt, the professions that were not included have unique requirements and perspectives in relation to clinical education of their learners. However, it was expected that the seven selected professions would cover most of the relevant issues. Any other issues were considered likely to be so discipline-specific that they would probably not result in changes to the framework.

It was also decided to restrict the focus in nursing to Division 1 nurses only. This decision, taken in consultation with the DHS Project Group, was made for practical purposes. The inclusion of Division 2 trainees would have significantly increased the training provider interview component of the project beyond the time available for this activity. Furthermore, inclusion of TAFE sector issues would have introduced an additional dimension that could not properly be addressed in the project timeframe. These issues may need to be taken into account in implementing the framework.

Choice of clinical learning environments

Clinical education takes place to a greater or lesser extent in most sectors of the health system. This includes hospitals (public and private, acute and subacute), aged care facilities, rehabilitation services, area mental health services and community health services, as well as GP and other private practice clinics. Different professions use these health service settings to different extents. While all seven of the selected professions use hospitals to some extent, some of the allied health disciplines make much greater use of non-hospital settings, particularly community health services.

From a feasibility perspective, conducting this project across all health service settings would have been unmanageable. In Victoria, there are approximately four hundred public hospitals, aged care, rehabilitation, area mental health and community health services in total. To develop a framework based on input from all settings, it would have been necessary to conduct at least one case study in each setting. In turn, this would have necessitated collecting learner survey data from all settings to inform the decision about where to conduct case studies. This was not considered feasible in the time available. The alternative – making a random choice about the inclusion of selected sites – was not considered, as it was at odds with the evidence-based approach to the project.

Under the circumstances, it was decided to keep the project scope focused in relation to the clinical learning environment that would be investigated. It was reasoned that concentrating on one type of setting – public acute hospitals – would make it possible to collect sufficient data with sufficient power on which to base the development of a best practice framework

intended to work in that setting. Even with such a focus, there was expected to be enough variation between hospitals in different geographic and socio-economic settings to make the development of a single framework that works in all hospitals a challenging proposition. Assuming such a framework could be developed, it was decided that its applicability to other settings could be investigated subsequently, with appropriate modifications incorporated as required.

The hospitals selected for inclusion in this project were drawn from the Postgraduate Medical Council of Victoria (PMCV) report on clinical education requirements (2003)[7]. This report identified 21 hospitals that provide the majority of clinical skills training (undergraduate and postgraduate) in Victoria. Nine more hospitals were added to the list based on their receipt of Training and Development Grant funding for early-graduates from DHS. Therefore, this group of 30 hospitals includes the major undergraduate and postgraduate clinical training providers in Victoria.

As it transpired, data was collected from more than 30 hospitals (see Section 3.2 - Learner surveys), owing to the organisation of health networks in Victoria. For example, contacting Bayside Health (for The Alfred Hospital) resulted in information being passed to staff at Caulfield General Medical Centre, who then provided input to the project.

No specialist hospitals (such as Peter MacCallum Cancer Centre or the Royal Eye and Ear Hospital) were invited to participate in this project.

Definition of early-graduate

Recognising that clinical education continues beyond structured undergraduate courses, the DHS had requested the project examine the quality of clinical learning environments for early-graduate as well as undergraduate learners.

There is no literature-based definition of *early-graduate* and therefore this term was defined empirically for the purposes of this project.

In medicine, graduates must undertake an internship year post-qualification to obtain their full registration as a medical practitioner. The intern year is at Hospital Medical Officer 1 (HMO1), level. The second and third postgraduate years (HMO2 and HMO3), are usually pre-vocational training, although HMO3 does represent the start of vocational training for some medical specialties.

In nursing, most hospitals offer a one-year structured Graduate Nurse Programme (GNP), with a growing number of hospitals now offering a post-GNP specialist year.

Most allied health disciplines do not have a formal post-qualification period, although pharmacy and radiography graduates must undertake a one-year internship for their registration. In social work, the Australian Association for Social Workers (AASW) requires graduates to have at least two years experience before they can supervise learners.

Based on this information, the first *two years* post-graduation was selected as the definition of *early-graduate*, as this period encompasses all the formal and informal postgraduate arrangements for the various health professions. Nevertheless, it is recognised that two years is an arbitrary time point in a system where practitioners are expected to be part of a life-long learning continuum.

1.3.3 Project phases

The project was conducted in four phases across six months (Jul – Dec 2008, inclusive). The first two phases (Jul – Aug) were focussed on data collection from across the Victorian clinical education system, to assist in identifying appropriate settings for case studies. The next two phases (Sep – Dec) were focused on data collection and analysis for the case studies and higher order analysis leading to the development of the best-practice framework and final report.

The major tasks of each phase are set out in Table 1.

Table 1: Project phases and major tasks

Project phase	Major tasks
Phase I	▪ Literature review ▪ Initial contact with university programmes and hospital disciplines ▪ Development of surveys
Phase II	▪ Semi-structured interviews with university clinical education coordinators ▪ Collection and analysis of data from undergraduate students and early-graduate health professionals via online surveys
Phase III	▪ Development of case study protocol ▪ Selection of case study sites ▪ Conduct of case studies
Phase IV	▪ Analysis of all data ▪ Development of draft best practice framework ▪ Revision of draft framework based on feedback from Stakeholder Reference Group (SRG) ▪ Preparation of final report

1.4 Methodology

1.4.1 Literature review

Academic literature relevant to this project was identified through searches of online databases, including Ovid, Medline Ovid and PubMed and education-related databases. Web-based non-academic literature, including reports from previous studies, was obtained through searches using the Google internet search engine.

The following search terms were used:
- learning environment
- clinical learning environment
- placement environment
- clinical placement
- clinical placement environment
- education environment
- preceptor

These search terms were used singly or in combination with the following:
- medicine or medical
- nursing
- occupational therapy
- physiotherapy
- podiatry
- social work
- speech pathology
- best practice
- inventory
- survey

1.4.2 Development of contact database and initial stakeholder contact

The intention of this project was that the development of a best practice framework for clinical learning environments would be based on data collected from three major stakeholder groups, namely, health service staff involved in clinical education, university-based clinical education coordinators, and learners. Furthermore, access to undergraduate and early-graduate learners

would require the assistance of university and health service clinical coordinators, respectively. Therefore, development of a comprehensive database of contacts comprising university and hospital-based clinical education coordinators was a major priority of the project.

University contacts

Eight of Victoria's nine universities deliver one or more of the seven health professional courses included in the project, for a total of 24 relevant university programmes. For each of the 24 programmes, contact information was obtained from the university website for the Head of School/Department and (if available) the person identified as the Clinical Education Coordinator (or equivalent). An email was sent to each head of programme and/or clinical education contact, outlining the project and requesting an opportunity to have a brief phone conversation to discuss participation. During this phone conversation, the identity of the appropriate contact person was confirmed, the project was explained in greater detail (including the nature of participation) and, if the programme accepted the invitation to participate, a date and time for the semi-structured interview (Phase II) was arranged.

Hospital contacts

As discussed earlier, 30 hospitals were targeted initially for inclusion in the project. These hospitals were: Alfred Hospital, Austin Health, Bairnsdale Regional Health, Ballarat Health Services, Barwon Health, Bendigo Health Care Group, Box Hill Hospital, Central Gippsland – Sale, Dandenong Hospital, Echuca Regional Health, Goulburn Valley Health, Latrobe Regional Hospital, Maroondah Hospital, Melbourne Health, Mercy Hospital for Women, Mildura Base Hospital, Monash Medical Centre, Northeast Health Wangaratta, Northern Hospital, Peninsula Health, Royal Children's Hospital, Royal Women's Hospital, South West Healthcare – Warrnambool, St Vincent's Hospital, Swan Hill District Hospital, West Gippsland Healthcare – Warragul, Western District Healthcare – Hamilton, Western Hospital, Wimmera Healthcare – Horsham and Wodonga Regional Health Service.

Initially, the websites of the 30 hospitals were reviewed to obtain general contact information and any specific contact information for individual disciplines/departments and (possibly) individuals responsible for early-graduate clinical training. This approach yielded minimal information and gave way to a more direct approach of calling each hospital to identify the relevant individuals and their email addresses. This produced a contact database comprising more than 200 records.

At this point, an initial email was distributed to explain the project, request alternative contact persons if appropriate and invite participation in the project. Every effort was made to follow up failed email addresses and out-of-office replies and a second email was sent to non-responders a week later. A final email was sent to any remaining non-responders two weeks after the initial contact attempt.

Regardless of whether they accepted the invitation to participate in the major data collection aspects of the project, all health service contacts who responded were invited to participate in a *virtual SRG* that would provide feedback on the draft best practice framework (as part of Phase IV).

1.4.3 Ethical review

At the commencement of the project, an outline of the proposed protocol was provided to the DHS Human Research Ethics Committee (HREC), which indicated the project constitutes a quality assurance (QA) activity and therefore does not require review and approval by an HREC, under the *National Statement on Ethical Conduct in Human Research* (2007).

Project information was also provided to the HRECs of Austin Health and Southern Health upon request. Both ethics committees concurred with the decision of the DHS HREC, namely that the project constitutes a QA activity and does not require HREC approval.

1.4.4 Survey development

Surveys have been used extensively in the literature relating to clinical learning environments, both as a mechanism for identifying issues of importance to learners and subsequently as a tool for rating learner satisfaction with a particular environment (see Section 2 – Literature Review). In this project, the purpose of surveying undergraduate students and early-graduate health professionals was to obtain their rating of a recent training experience in a hospital clinical learning environment. The set of responses for a given hospital would thereby provide a *snapshot* of that hospital's clinical learning environment from a learner's perspective. Since the issues and expectations for the undergraduate and early-graduate learners were not likely to be the same, it was decided that different surveys would be required for the two learner cohorts.

Four validated instruments were used as the starting point for development of the two surveys:

- Dundee Ready Education Environment Measure (DREEM)[8]
- Postgraduate Hospital Education Environment Measure (PHEEM)[9]
- Clinical Learning Environment Inventory (CLEI)[10]
- Clinical Learning Environment Scale (CLES)[11]

All these instruments are collections of statements (or *items*) that respondents rate on a five-point Likert scale. The surveys explore discrete aspects of the clinical learning experience, such as perceptions of teaching, learning, atmosphere, social support, etc, with a number of items addressing each aspect. As such, each item is categorised, although items from each category are distributed throughout the survey, not presented as a group of related items. Thus, it is possible to obtain both an overall rating of a clinical learning environment and a breakdown of that rating into the component aspects.

In most reports where these instruments have been used, the survey is modified (mainly in respect of terminology) to ensure it is appropriate for a specific professional group. However, for this project it was necessary to develop one survey that could be used for all learners, regardless of profession or individual experience. Therefore, the four instruments were reviewed to identify items relevant to the current project and 'not applicable' options were included for some of the items that might be relevant to some, but not all, respondents. The resulting hybrid survey instruments most closely correspond to the DREEM and PHEEM instruments, respectively, with some additional or deleted items.

The surveys were set up using the Survey Monkey platform[12], which allows respondents to complete the instrument anonymously and online.

Pilot versions of the two surveys were developed. In these versions, respondents were able to indicate if they did not understand the statement or to make other comments in relation to the process of completing the survey. To obtain participants for the pilot, a small number of university clinical education coordinators were asked to invite a few students to complete the pilot version of the survey. Similarly, a contact at the Peter MacCallum Cancer Centre was asked to invite a small number of early-graduate staff to complete the pilot[a].

Information obtained from the pilot was used to modify the two surveys, which were finalised following consultation with DHS (see Appendix 1 and Appendix 2 for undergraduate and early-graduate survey questions and their categorisation).

1.4.5 Interviews with university clinical education coordinators

Interviews were scheduled through the university contact person during the initial phone conversation. Each programme was invited to include as many participants in the interview as they deemed appropriate.

[a] The Peter MacCallum Cancer Centre was invited to do this, since this hospital was not to be included in the main project

Interviews were semi-structured and participants were provided with an indicative list of discussion topics beforehand. Topics included:

- Definition and elements of a *positive learning environment*.
- The university's role in ensuring clinical learning environments are positive learning environments.
- How students are prepared for their clinical learning experiences.
- Definition of *best practice clinical learning environment*.
- Examples of excellence/innovation in hospital settings.

Interviews generally lasted about one hour (slightly longer for those instances where many people participated) and were recorded with the permission of the participants. Dot point summaries were prepared for each interview (and were provided back to participants upon request) and the responses were compared across disciplines and organisations.

1.4.6 Collection and analysis of survey data

The surveys were open from Monday 21 July to Sunday 10 August, inclusive. An email was sent to all university and hospital contacts for them to forward to their students or early-graduate staff, respectively. This email included information about the project and provided a direct link to the relevant survey URL for learners who wished to participate.

Data was downloaded from the surveys after the closing date; records that were less than 80% complete were set aside. For the undergraduate survey, the item *I would return to this site for future placements or work* was considered central to further analysis; one response was removed because it did not have an answer to this item. The remaining records were edited for consistency of nomenclature in the *hospital name* field. The 'cleaned' data was then imported into the Statistical Package for the Social Sciences (SPSS) for analysis.

Responses were coded on a scale of 1-5 (positive statements) or 5-1 (negative statements) across the five-point Likert scale. For each individual response, the total score for each category of statements was compiled (= *category score*); category scores were then summed to give a total score (the Clinical Learning Environment Approval Rating = CLEAR score). For those items where a 'not applicable' answer was allowed (13 statements in the undergraduate survey, three statements in the early-graduate survey), if the respondent answered 'not applicable', the item was removed from further consideration for that respondent. Since this would result in scores that would not be directly comparable, CLEAR scores were expressed as a percentage value, being the total score as a percentage of the total possible score for applicable questions. Finally, individual responses were compiled on a hospital-by-hospital basis, to ascertain the proportion of CLEAR scores for that hospital that were in the low (CLEAR = 26-50%), middle (CLEAR = 51-75%) or top (CLEAR = 76-100%) range; undergraduate and early-graduate responses were considered separately.

Further analysis of survey responses, including correlation analysis and one-way analysis of variation (ANOVA), was undertaken.

1.4.7 Selection of case study sites

Only hospitals with at least five responses for both the undergraduate and early-graduate surveys were considered as potential case study sites.

The following data was tabulated for each eligible hospital:

- Number of survey respondents.
- Proportion of respondents that rated the site in the low (CLEAR = 26-50%), middle (CLEAR = 51-75%) or top (CLEAR = 76-100%) range.
- Recommendations made by university clinical education coordinators during interview.
- The willingness of individual departments/disciplines at the hospital to participate in the case study (particularly those relating to the seven disciplines included in this project).
- Geographic location (i.e. metropolitan, outer-metropolitan, rural/regional).

Although it was important to select hospitals that performed well by the CLEAR score criterion, it was also necessary to ensure that a good cross-section of Victorian hospitals were selected for case study. Therefore, hospitals were only compared with other hospitals in the same geographic category and this allowed metropolitan, outer-metropolitan and regional case study sites to be selected. The four selected hospitals were then contacted to confirm their willingness to be involved and an appropriate time for the site visit was arranged.

1.4.8 Conduct of case studies

The objective of the case studies was to detail real-world examples of how public hospitals around Victoria establish and maintain their clinical learning environments, and to identify policies and practices that constitute best practice. For each of the case studies, data were collected through a site visit, review of the website and review of hospital documentation (including annual reports, policy and protocol documents, and other health service data). The major source of data was the site visit, with other sources of information mainly used to provide context.

Site visits were conducted over four or five consecutive days and were arranged and coordinated by a delegated hospital staff member, based on a set of requests provided by the consultants.

Interviews were requested with:
- The Chief Executive Officer (CEO)
- The Human Resources (HR) Manger/Director
- Directors of Undergraduate Education (medicine, nursing, allied health)
- Directors of Early-Graduate Education (medicine, nursing, allied health)

Group discussions were requested with:
- Clinical education coordinators (mixed disciplines)
- Clinical educators (mixed disciplines)
- Undergraduate students (mixed disciplines)
- Early-graduate staff (mixed disciplines)

In addition to interviews and group discussions, tours of educational facilities were requested. A request to observe formal and/or informal teaching sessions was also made, although it was acknowledged that observation of any ward-based teaching might not be appropriate due to the presence of patients. As far as possible, the entire week's activities were scheduled prior to commencing the site visit.

The case studies represented an opportunity to collect very specific information about clinical education practices and policies. The starting premise for the case studies was that learners had indicated through the surveys that they liked their clinical learning experience at those sites and rated those hospitals well. Therefore, the objective was to find out why.

The surveys also provided very specific information about the learning environment at each of the four sites, so case studies were also viewed as an opportunity to further interrogate those specific results. Finally, the case studies also represented an opportunity to assess the practicability of what constitutes a *positive learning environment* and *best practice*, which emerged during the earlier interviews with university clinical education coordinators.

Therefore, participants were asked about how clinical education is organised and carried out and to provide context, they were asked to characterise the organisational culture of the hospital with respect to education. They were asked their views on what makes a positive learning environment and the definition of *best practice* in a clinical learning environment. Similar issues were canvassed with all participants with a view to obtaining multiple perspectives on each issue. Notwithstanding these questions as a starting point, discussions were mostly allowed to proceed in whatever direction they took (relating to education), rather than being held to a pre-determined set of topics, particularly since the major emphasis was on finding out what actually happens at the hospital, from a clinical education point of view.

Dot point summaries of all interviews and group discussions were prepared based on notes taken during each session. Following the completion of the site visit, each case study was written up as a narrative report, incorporating information gathered during the site visit and from other sources. The draft report was provided to the hospital to confirm the accuracy of information presented.

1.4.9 Development of best practice framework

The best practice framework was developed using all of the data collected in the earlier phases, although most emphasis was placed on the case study findings and interviews with university clinical education coordinators.

The findings from each of the case studies were tabulated and compared. Themes that were common – particularly those that were common across sites or disciplines – were identified for further interrogation. Policies and practices that related to the issues raised by university coordinators were noted. From this analysis, a number of elements that appear to contribute to a quality clinical learning environment were identified. Those supported by the literature and/or data collected via the learner surveys were included in an initial draft of the framework. This draft was further developed to include explanatory information and a set of indicators that might assist in monitoring the implementation and use of the framework (including structural, process and outcome measures).

After an initial round of consultation and refinement involving the DHS Project Group, the draft best practice framework was circulated to the SRG (see Section 1.4.2 - Development of contact database and initial stakeholder contact). SRG contacts were encouraged to distribute the draft framework widely amongst their colleagues (including those outside the seven specific disciplines), to obtain feedback from as broad a group of stakeholders as possible. A two-week deadline for feedback was set.

The 26 responses received from the SRG were tabulated according to the section of the framework comments referred to. Over 250 individual comments were extracted from these responses. Each comment was considered on its own merit, as well as in the context of the other feedback received. All comments were provided to the DHS for information. Modifications to the draft framework were made in consultation with the DHS.

2 Literature Review

2.1 Introduction

As this investigation into best practice clinical learning environments was limited to hospital-based learning in the disciplines of medicine, nursing, physiotherapy, OT, social work, speech pathology and podiatry, the literature review was conducted with a similar focus. Accreditation issues relevant to clinical education were not part of the remit of this project and, as these requirements have been extensively reviewed elsewhere[1], they were not included in this literature review.

From a cursory examination of the literature, it was immediately apparent the majority of relevant published research relates to medical student placements. There is also a relatively large amount of research within nursing, possibly reflecting the major shift in nursing educational models that occurred in the 1980s. However, there is limited (if any) specific literature available on speech pathology, podiatry and social work clinical education and only a very small amount related to physiotherapy and OT.

The majority of academic research has been undertaken in the UK, and to a lesser extent in the US, Canada and Australia. Non-academic research in this field has been conducted in a number of countries. It generally involves quality assurance/quality improvement activities undertaken by governments, training organisations, health service providers or professional bodies, aimed at improving undergraduate, early-graduate and ongoing professional clinical training. While there is only very limited information available about the projects themselves, the project outcomes are generally published in the form of guidance for clinical educators and/or training providers[13].

2.2 Findings from the literature

The literature review yielded information in three major domains, namely:

- The methods that have been used to investigate clinical learning environments;
- The factors that are considered important in creating effective clinical learning environments; and
- The extent to which this information has been assembled into frameworks, protocols or models of best practice.

2.2.1 Methods used to study clinical learning environments

Across all disciplines, similar approaches have been used to investigate clinical learning environments. Interviews, focus groups and questionnaires/surveys have been commonly used, as have observations of teaching/learning, activity log cards and review of clerkship documents [3, 9, 14-20].

The most popular method appears to be student survey. Many learning environment surveys (both clinical and non-clinical learning environments) are based on research published in the 1960s and 1970s by Walberg[21] and Moos[22], (credited as the founders of learning environment research[23]).

As the majority of surveys were based on the same original research, they tend to have a similar structure, focusing on the three basic elements of a human environment as defined by Moos[22], namely:

- Relationships;
- Personal development; and
- System maintenance and change.

Within medicine, a commonly used instrument has been the Dundee Ready Educational Environment Measure (DREEM)[9, 24] and its postgraduate counterpart, the Postgraduate Hospital Educational Environment Measure (PHEEM)[9]. These instruments are validated

questionnaires developed to measure the educational environment of undergraduate and postgraduate learners, respectively. They provide a *profile* of a clinical learning environment, highlighting strengths and weaknesses and enabling comparative analysis of students' perceptions of clinical learning environments[9]. Researchers and education providers have begun to use DREEM and PHEEM in an attempt to determine the quality of the educational environment across multiple teaching sites[15].

Within nursing, the Clinical Learning Environment Inventory (CLEI)[10] has been used widely to assess nursing student perceptions of learning environments, particularly within Australia. It is based on several previous student learning environment surveys[10]. Another commonly used tool in nursing clinical learning environments is the Clinical Learning Environment Supervision instrument (CLES)[25]. Its development involved literature reviews/searches of other survey instruments[25].

One research method that has had limited use to date involves asking participants to record their feelings and experiences in a journal[26]. However, recent changes in the system of nursing clinical placements in the UK have seen this methodology used more often, as students on clinical placements have been expected to keep journals on the clinical placements as part of the education process[27].

As well as relying on the same or similar survey instruments, most studies of clinical learning environments adopted similar approaches to protocol design. This is generally attributed to the complexities of the environment, rather than poor research design[28]. For example, most reports only investigated the perceptions of one cohort of learners in relation to one environment. Studies rarely assessed several cohorts or several environments attended by the same cohort. Nor did they correlate student outcomes (e.g. performance in assessment) to the student's perception of the environment. A Monash University report prepared for the DHS in 2005 suggests that, in those instances where such correlations have been made, the quality of the learning environment reported by learners was not indicative of Objective Structured Clinical Examination (OSCE) outcomes[28]. This was in contrast to studies of classroom learning environments, where survey results were often compared to assessment outcomes and student perceptions of the classroom learning environment were found to correlate well with student assessment outcomes[29].

2.2.2 Factors contributing to a clinical learning environment

For the most part, research into clinical learning environments has been conducted for the purpose of identifying factors (or issues) that contribute to and shape the clinical learning environment. Interestingly, although a clinical learning environment includes all aspects of a health care setting that a learner may encounter[30], most studies have focussed on students and teachers (in particular what makes a good clinical educator[19]), and not on other aspects of the environment such as the clinic and its facilities. Indeed, most of the survey instruments don't include items to assess the non-interpersonal aspects of the environment and few of the surveys interrogate how the training organisation supports the clinical placement, or how the clinical placement provider and the training organisation interact[20].

Issues that were commonly found to be associated with negative perceptions of the environment include:[2, 31-33]:

- Lack of clear objectives
- Unrealistic expectations
- Inadequate planning
- Passive observation rather than active participation by learners
- Inadequate supervision
- Lack of feedback
- Lack of formal training in teaching skills (of educators)

Many of these issues relate to communication, suggesting communication is a key factor in effective clinical education. In line with this, Andrews *et al* (2006) proposed a new model of clinical supervision focusing on the level of communication between staff and students[20]. In

particular, the authors noted the need for students and clinical placement staff to receive feedback (positive and negative) on their clinical placement. Similar observations were made by Lofmark and Wikblad, who noted feedback is *obstructive when absent and facilitative when present*[34].

Other issues that were identified as contributing to the perception of the learning environment included factors likely to impact on the ability of staff to teach, such as *time pressure*; *competing clinical, research, administrative and teaching duties*; *large student numbers*; and *lack of recognition/reward for educators*[2, 35]. Australian and Hong Kong student nurses also identified *teaching innovation* as being important to them and their perception of the learning environment[36-38].

Interestingly, while the literature includes many papers identifying the issues, there is very little information on how these aspects of the clinical learning environment might be optimised or improved. For example, a review by Parsell and Bligh (2001) highlights the problems associated with clinical teaching (variability, lack of continuity, unpredictability and lack of planning[31]) but does not suggest solutions. One literature review in the mid-1990s did attempt this, compiling the results of many studies and suggesting guidelines for teaching in a clinical setting[39]. The guidelines targeted three main aspects of clinical education:

- Provide continuity – This primarily refers to students being able to provide continuity of care to patients, but necessarily includes continuity of the student experience. Longer attachments or specific opportunities for patient follow-up were suggested as mechanisms to achieve this[40].
- Self-directed learning – Students should be engaged in a continuous self-directed and collaborative learning environment that can extend into their career as a practitioner.
- Improved teaching – This included initiatives to help teachers to:
    - Target instruction better;
    - Use time more appropriately;
    - Be responsive to learners' needs;
    - Be highly selective in what they teach;
    - Observe and give feedback to students; and
    - Create a supportive environment for learning.

The importance of the clinical educator and interpersonal interactions

A number of authors emphasise that clinical staff who supervise and teach learners are central to the effectiveness of the clinical learning environment. For example, Prideaux *et al.* note that good clinical teaching involves providing role models for good practice, making good practice visible and explaining it to trainees in a manner that enables them to practice[41]. Others point out the clinical educator's job is complex and multidimensional, including clinical, supervisory, teaching and support roles[31]. Furthermore, good teaching requires the clinical educators understand interpersonal relationships and the purpose and process of clinical learning[2, 32, 42-44].

Not only are interpersonal relationships important for good teaching, they are a major factor in the student's perception of the environment. In particular, positive interpersonal and professional interactions correlate well with positive learning environments[45]. In light of this, in the UK there have been a number of changes to the model of nursing training to build positive interpersonal interactions into the system.

For example, students are assigned a *mentor* at each clinical placement. Mentors are separate roles to others on the ward and are expected to ensure students attain certain standards of practice. Interestingly, despite the mentor having a specified role, nursing students interchangeably used other terms such as *assessor*, *supervisor*, *coordinator*, *preceptor* and *practice facilitator* to describe their mentor[45]. Furthermore, the guidelines do not describe the qualities or requirements of a good mentor and as a result the students' experience is somewhat variable[20, 46]. Indeed, despite the guidelines suggesting mentors undertake a two-day course on mentorship, these courses are not considered adequate preparation[45].

The UK system of nurse training also requires training organisations (universities) to provide *link tutors* who are responsible for linking student learning between various sites. They are expected to work in partnership with practice educators, nurses, other lecturers, mentors and other professionals to ensure that the students' placement experiences and outcomes meet the intended goals and objectives[27]. As with mentors, link tutors are intended to make the student experience more positive. It has even been noted that in the absence of a good mentor, the role of the link tutor becomes more important[20].

Link tutors are also expected to be a point of contact for the student, particularly for feedback about their clinical placement[20]. Thus, the link tutor also has a role ensuring the placements remain student focused and in keeping staff and mentors up to date with current teaching practices, thereby ensuring best practice teaching is maintained[20].

Aside from staff who have a direct and specific role in clinical education, students' experience of clinical placements is also influenced by the ward manager. The ward manager sets the tone and influences the attitudes of the entire ward, not just in relation to teaching, but also in terms of standards of patient care and general ward atmosphere. As such, ward managers have the potential to have the greatest impact on the clinical learning environment of students[20, 47].

The contribution of students to the clinical learning environment

Notwithstanding the site-related factors, learners themselves contribute to the clinical learning experience and therefore learner issues must be considered when creating an optimal clinical learning environment.

For example, learners of different ages and experiences learn differently[32, 44, 48, 49]. Mature students have a preference for self-directed learning compared with younger students and as a result perform better in such tasks[42, 43, 48]. Although the age difference within one learner cohort may not be that great, across cohorts (e.g. first year versus third year), streams (e.g. graduate-entry versus school-leaver) and levels (e.g. undergraduate versus early-graduate) there will be significant differences in the age of learners that need to be accounted for in structuring the clinical learning environment.

Similarly, it has been found that the experience of students plays a role in their ability to cope with and respond to stress[49]. For instance, students in their early training tended to make use of *direct coping mechanisms* (e.g. asking questions), whereas students in their final years and early-graduates tended to use more *emotional mechanisms* (e.g. behaviours that reinforce personal attitudes and beliefs)[49]. Besides noting these differences when teaching, the literature suggests clinical educators should encourage students to use direct coping mechanisms. Amongst nursing students, emotional coping mechanisms have been associated with higher stress and burnout rates[50], whereas direct coping mechanisms have been associated with lower stress[51].

Stress amongst students has been found to be a major factor in their ability to learn effectively and one way to reduce stress is to make students feel welcome while on placement. A study conducted in Australia by Chan in 2001 suggested nursing students welcomed (indeed preferred) environments that recognised their individuality, provided adequate support and allowed a degree of flexibility[36]. Nursing students were most satisfied with environments that respected them and where they were considered part of the team. Conversely, they were unsatisfied when their efforts were not acknowledged[36].

Students also become less anxious soon after becoming involved or occupied with ward activities. Hence, a good practice model would encourage students to become involved as soon as possible, resulting in reduced anxiety and improved performance[38]. In light of this, analysis of how student time is spent when on placement is quite revealing. A literature review conducted by Monash University for DHS identified several studies that suggested time devoted to clinical educational ranged from zero to 25 percent[28] of total ward time. Not only was time limited, it was also erratic; on a typical week of clinical attachments, some students were receiving approximately 12 hours of bedside teaching, while others were receiving

none[28]. Another study highlighted in the same report found that of six attending physician teams studied, only three visited the bedside for educational purposes[28].

Research investigating how time is spent within teaching rounds showed that 63% of the time was spent in the conference room, 26% in hallways and only 11% at the bedside[28]. The authors note that despite teaching rounds leaving little time for bedside teaching, they continue to be a focus for education[28]. These factors (limited time spent on clinical education, limited time spent at the bedside and erratic access to bedside teaching) may be contributing to students feeling ill-prepared for practice.

Interestingly, some research with early (now practicing) graduates, reflecting on their current role and student experiences, indicates students felt that no-one and nothing could have prepared them for the transition from student to practitioner[26].

Given the variability in the quality of clinical learning environments, there is a trend towards preparing students for variation and equipping learners with skills that enable them to make the best use of whatever learning opportunities they encounter[32, 42, 43]. As one author noted, if the aim of clinical placements is to prepare students for practice, then providing students with the skills to make the best of limited learning opportunities will also prepare them to be life-long learners[20].

The role of patients

One clinical learning environment variable that has received only limited attention in the literature is *patients*. Kauffman[32] describes the traditionally passive role of patients in the teaching process and although a number of studies mention patients, most do not deal with the issue in much detail. Parsell and Bligh[31] recommend the careful selection of patients so that clinical learners early in their training are exposed to articulate and communicative patients with more common illnesses, before encountering more difficult clinical situations when more experienced.

2.2.3 Clinical learning environment models

Although a significant amount of research has been undertaken in reviewing clinical learning environments, including many articles investigating student's and teacher's perceptions of these environments[38, 52, 53], very little emphasis has been placed on creating or suggesting a model for best practice. Researchers have placed emphasis on identifying and addressing poorly perceived aspects of environments, aligning student and teacher perceptions[53] or focused on specific teaching modalities[54], rather than defining what a best practice environment might comprise. Where models have been proposed, these tend to be a set of minimum standards developed by hospitals or training organisations, as opposed to frameworks aimed at achieving an optimal level of educational experience.

Flinders University in South Australia has developed a model for clinical learning environments that can be adapted to all practice settings[55]. The model is fairly generic and not particularly detailed[55]. At the other end of the spectrum, the Queensland Occupational Therapists Fieldwork Collaborative (QOTFC) website documents (in considerable detail) how to establish and maintain a suitable clinical learning environment[56]. The site also provides advice and information for OT clinical educators, covering the entire clinical placement process[56]. Interestingly, although the level of detail is very different, the two models agree on many key points. For example, the Flinders University model suggests the need for a placement manual[55]. The QOFTC model also indicates the need for a placement manual and sets out in detail what this manual should include[56].

The Australian Nursing and Midwifery Council (ANMC, formerly the Australian Nursing Council) has guidelines for nursing and midwifery education in Australia[57]. However, these guidelines do not provide specific advice on the most appropriate or effective environments for delivering clinical education. The ANMC also has guidelines on delegation and supervision for nurses and midwives[58], but there is very little detail in relation to supervision of students. Similarly, the Nurses Board of Victoria (NBV) has guidelines on delegation and supervision[59] and shifts

undertaken during clinical placements[60]. None of these guidelines specifically address the clinical learning environment.

In 2007, the ACT Government commissioned a review of allied health clinical placements in the ACT (Allied Health Clinical Education Placements in ACT Health[61]). Although a best practice framework was not developed as a result of this process, the review identified several issues that need to be addressed for the system to operate more efficiently at a time when clinical placements are at a premium. Recommendations included the need for allied health-specific clinical educators and clinical placement coordinators. Formal education for clinical supervisors was also recommended, as was the use of innovative education techniques. Importantly the report recommended clinical education and training for allied health staff be considered as part of ACT Health's core business[61].

Over twenty years ago, the UK Department of Health released a paper *Project 2000: A new preparation for practice*[62], which has governed the UK nursing clinical placement environment since 1986. More recently, the English Nursing Board and the UK Department of Health have published *Placements in Focus: Guidance for education in practice for health care professionals*[63]. This guide was developed to help institutions develop, maintain and enhance the quality of clinical placements, and is considered to be an appropriate model of good practice for a range of institutions and health professions[63]. It appears this broad applicability and acceptance was achieved through an extensive panel of *critical readers*, covering hospitals, universities and professional bodies[63].

The *Placements in Focus* document describes four components of best practice clinical placements, namely: providing placements, the learning environment, student support and assessment. Further detail is provided for each component in the form of *underlying principles* towards achieving best practice and specific *guidance*, with responsible individuals (e.g. programme planners) or organisations (e.g. placement providers) identified for each. In terms of the level of detail, *Placements in Focus* lies somewhere between the Flinders University model and the QOTFC guidelines. However, all three models are similar in that they provide guidance on activities before, during and after clinical placement and place a strong emphasis on interpersonal relationships and good communication[55, 56, 62].

An Bord Altranais, the statutory body responsible for the regulation of nursing and midwifery practice in Ireland, has created *Guidelines on the key points that may be considered when developing a quality clinical learning environment*[64]. These evidenced-based guidelines cover:

- Professional conduct – the importance of clinical placements in training nurses and the role experienced nurses play in establishing a quality environment.
- Factors that influence the clinical learning – structures, processes, staff attitudes to learners, communication and other factors that facilitate or inhibit learning while on placements.
- Designing and managing the clinical learning experience – providing appropriate quality and quantity of learning opportunities.
- Assessment of learning – how learning is best assessed and the need for different tools to assess different skills.
- Documentation – by students of their various learning experiences to aid their learning process.

Although these guidelines are not as detailed as many described above, they do come close to describing a best practice clinical learning environment and how it might be achieved and maintained[64].

3 Interview and Survey Findings

This section details the results of the data collection processes involving university clinical education coordinators, as well as surveys of undergraduate and early-graduate learners.

3.1 University clinical education coordinator interviews

Of the 24 university programmes relevant to this project, 23 programmes accepted the invitation to participate in the various data collection activities. Semi-structured interviews were conducted with the clinical education coordinators for these 23 programmes. In all but one instance, interviews were conducted face-to-face (the exception being the Monash University Nursing programme, where the interviews were conducted by teleconference) and were recorded with the permission of the participants (only one programme refused permission). The following table summarises the number of university staff who participated in the interviews for each programme.

Table 2: Participation in semi-structured interviews with university programmes

	Medicine	Nursing	Occupational Therapy	Physiotherapy	Podiatry	Social Work	Speech Pathology
Australian Catholic University		2					
Deakin University		2	5			2	
La Trobe University		1	1	1	1	1	2
Monash University	8	2*	2	2		1	
RMIT University		2				2	
University of Melbourne	7	2		7		2	
Victoria University		1				1	

* The two participants from the Monash University Nursing programme, one from the Gippsland Campus programme and one from the Peninsula Campus programme, were interviewed separately owing to scheduling issues.

From these interviews, it was possible to draw out a number of responses that were common to most (if not all) of the disciplines in respect of three major questions:

- What are the elements of a positive learning environment (PLE) in a clinical setting?
- What constitutes *best practice* in a clinical learning environment?
- What is the role of the university in creating a PLE?

The elements of a PLE identified by the university coordinators could be categorised under the following seven headings:

A welcoming environment, where students receive an appropriate orientation/induction; students are included in activities; they feel wanted and valued (not a burden); and there are facilities and amenities provided for the students.

A culture of learning, which values lifelong learning and evidence-based practice and understands there is a two-way flow of knowledge; where allowance is made for the *inefficiency* of learning (with respect to hospital productivity outcomes); where the educational roles and activities of staff are valued.

A safe environment (in terms of emotional and professional safety, more so than physical safety), where learners feel it is safe to ask questions and make mistakes; where it is safe to participate and take risks; a non-judgemental environment.

Appropriate learning opportunities, mainly in respect of clinical activities but also including non-clinical areas such as staff administrative duties, which provide challenging, active learning for students; "an environment that effectively brings together learner, teacher and patient in the same space".

Clarity of objectives, where clinical educators have knowledge of the course the students are enrolled in and the expected knowledge and proficiency level of each cohort of students; where assessment is understood and factored into the clinical education.

High quality clinical education staff, who display appropriate interpersonal attributes; are appropriately trained for the task; have experience and confidence; are adequately prepared; are reflective, flexible and good at handling problems; are committed to education and their profession; and provide a good role model for students.

Well-prepared students, who demonstrate professionalism, are willing and able to adapt their learning style to new environments, have done their own preparation, and are willing to ask questions and take risks.

There was considerable overlap between the elements that constitute a *positive learning environment* and the definition of a *best practice clinical learning environment*. The relationship between the two appears to be: *an environment that provides a positive learning experience is necessary but not sufficient for best practice in a clinical learning environment*. Thus, a *best practice clinical learning environment* is one that has all the elements of a PLE and is characterised by the following hallmarks:

- Best clinical practice, reflecting evidence-based practice.
- An organisational culture that values learning.
    - Education is valued – there is a commitment to teaching rather than it being seen as a burdensome obligation.
    - Educators are valued – appropriate recompense is paid for teaching; time is quarantined for teaching; backfill is provided to avoid overloading staff or compromising patient care.
    - Students are valued.
    - There is a career structure for educators.
    - Education is included in all aspects of planning.
    - Use of facilities and resources are optimised for all educational purposes.
- Well-documented policies and procedures and good communication practices.
- Opportunities for inter-disciplinary and external contextualisation.
- An appropriate ratio of students to educators – determined empirically for each discipline.
- Prepares practice-ready graduates, who have had a range of experience and have developed more than baseline competence.
- High quality staff.
- High quality resources and general facilities.

There was also agreement on the role of university in creating positive learning environments in clinical settings, which is principally:

- Adequate preparation of students.
- Appropriate allocation of students to sites, done with the involvement of the site.
- Provision of appropriate resources (including professional development opportunities) for clinical educators.

3.2 Learner surveys

The two online learner surveys remained open for a three-week period, during which time a total of 739 and 378 responses were collected for the undergraduate and early-graduate surveys, respectively. About 20% of surveys were incomplete (i.e. not every item was answered) and so a data rule was introduced, requiring at least 80% of core (i.e. non-optional) questions to have been answered for the survey response to be counted as 'valid'. This

resulted in 599 valid undergraduate responses (81.1% of the total sample) and 311 valid early-graduate responses (82.3% of the total sample). These responses were imported into SPSS Version 12 for analysis.

3.2.1 Demographics of the survey respondents

Survey respondents were a self-selected group, presumably a small percentage of those who received information distributed by the universities (undergraduate respondents) or the health services (early-graduate respondents). The following tables summarise the demographics of the two samples, in terms of gender, profession, university at which they were enrolled (for undergraduates), and health service at which they were employed (early-graduates) or at which they undertook the clinical placement (undergraduates).

Table 3 shows the gender and professional discipline breakdown of all respondents. Eighty percent of undergraduate and ninety percent of early-graduate respondents were female.

Table 3: Discipline and gender breakdown of survey respondents

	Female	Male	Total
Undergraduate survey respondents			
Medicine	106	72	178
Nursing	249	26	275
Occupational Therapy	40	1	41
Physiotherapy	45	18	63
Podiatry	21	6	27
Social Work	12	0	12
Speech Pathology	3	0	3
Total	**476**	**123**	**599**
Early-graduate survey respondents			
Medicine	31	15	46
Nursing	118	11	129
Occupational Therapy	46	5	51
Physiotherapy	40	1	41
Podiatry	5	0	5
Social Work	17	2	19
Speech Pathology	20	0	20
Total	**277**	**34**	**311**

Table 4 shows the breakdown of undergraduate survey respondents according to the university at which they were enrolled. It is not known why there were no responses received from students enrolled at RMIT University, particularly the nursing students.

Table 4: Undergraduate survey respondents by university

University	Number of respondents	Percent of total
Australian Catholic University	60	10.0
Deakin University	121	20.2
La Trobe University	85	14.2
Monash University	167	27.9
RMIT University	0	0.0
The University of Melbourne	125	20.9
Victoria University	41	6.8
Total	**599**	**100.0**

Table 5 shows the breakdown of early-graduate respondents by the health service they nominated as the site about which they answered the survey questions (which may not be the site at which they are currently employed). This table also shows the number of undergraduate respondents for each of these sites, which accounts for 79 percent of the valid undergraduate survey responses. Appendix 3 shows the full breakdown of hospitals nominated by the undergraduate respondents.

Table 5: Health service sites nominated by early-graduate survey respondents

Health service site	Number of early-graduate respondents	Number of undergraduate respondents
Austin Health	26	42
Ballarat Health Service	13	7
Barwon Health	9	34
Bayside Health - Alfred Hospital	8	46
Bayside Health - Caulfield GMC	12	5
Bendigo Health Care Group	3	9
Cabrini Hopetoun Rehabilitation Hospital	1	18
Central Gippsland - Sale	7	5
Eastern Health - Angliss Hospital	4	7
Eastern Health - Box Hill Hospital	4	21
Eastern Health - Maroondah Hospital	6	9
Eastern Health - Peter James Centre/Wantirna Health	3	5
Echuca Regional Health	1	1
Goulburn Valley Health	3	6
Latrobe Regional Hospital	5	14
Melbourne Health	34	39
Mercy Hospital Werribee	3	7
Northeast Health Wangaratta	11	2
Northern Hospital	10	14
Peninsula Health	15	20
Royal Children's Hospital	20	10
South West Healthcare	7	3
Southern Health - Dandenong Hospital	8	17
Southern Health - Monash Medical Centre	7	36
St Vincent's Health	43	60
Swan Hill District Hospital	1	1
West Gippsland Healthcare Group	4	5
Western District Health Service	8	-
Western Health - Sunshine Hospital	8	11
Western Health - Western Hospital	10	14
Western Health - Williamstown Hospital	4	3
Wimmera Health Care Group	7	-
Wodonga Regional Health Service	3	1
Miscellaneous (no response; Queen Elizabeth Centre; Specialist Children's Services)	3	-
Total	**311**	**472**

As it transpired, survey responses were received in relation to all 30 hospitals that were selected for inclusion in the project, from either (or both) undergraduate or early-graduate learners. Indeed, through the mechanism of distribution of information about the survey to early-graduates, other hospitals in the various health networks were also represented in the early-graduate responses (see Table 5). Similarly, as the information about the survey was distributed to all undergraduate students in the participating university programmes, survey

responses were received in relation to many more settings than the 30 targeted hospitals (over 95 in total; see Appendix 3). However, not all of the original 30 targeted hospitals had at least one response in both surveys and only 31 of all hospitals cited had a least one response for both the undergraduate and early-graduate surveys. Only 17 of the sites had at least five responses for both surveys.

3.2.2 Scoring the responses

Initially, all items (survey statements) within all valid responses were scored on a scale of 1-5 (positive items) or 5-1 (negative items) across the five-point Likert scale. Items were sorted according to category and the individual item scores were summed to arrive at *category scores* and the category scores were summed to give an overall score (the Clinical Learning Environment Approval Rating = CLEAR score).

For those items where a 'not applicable' answer was allowed (13 items in the undergraduate survey, three items in the early-graduate survey), if the respondent answered 'not applicable', the item was removed from further consideration for that respondent. Since this would result in scores that would not be directly comparable, CLEAR scores were expressed as a percentage value, being the total score as a percentage of the total possible score for applicable questions.

Finally, individual responses were compiled on a hospital-by-hospital basis, to ascertain the proportion of CLEAR scores for that hospital that were in the low, middle or high range (undergraduate student responses were considered separately from the early-graduate responses).

The distribution of CLEAR scores and category scores for undergraduate and early-graduate respondents is presented in the box plots shown in Figures 2 and 3.

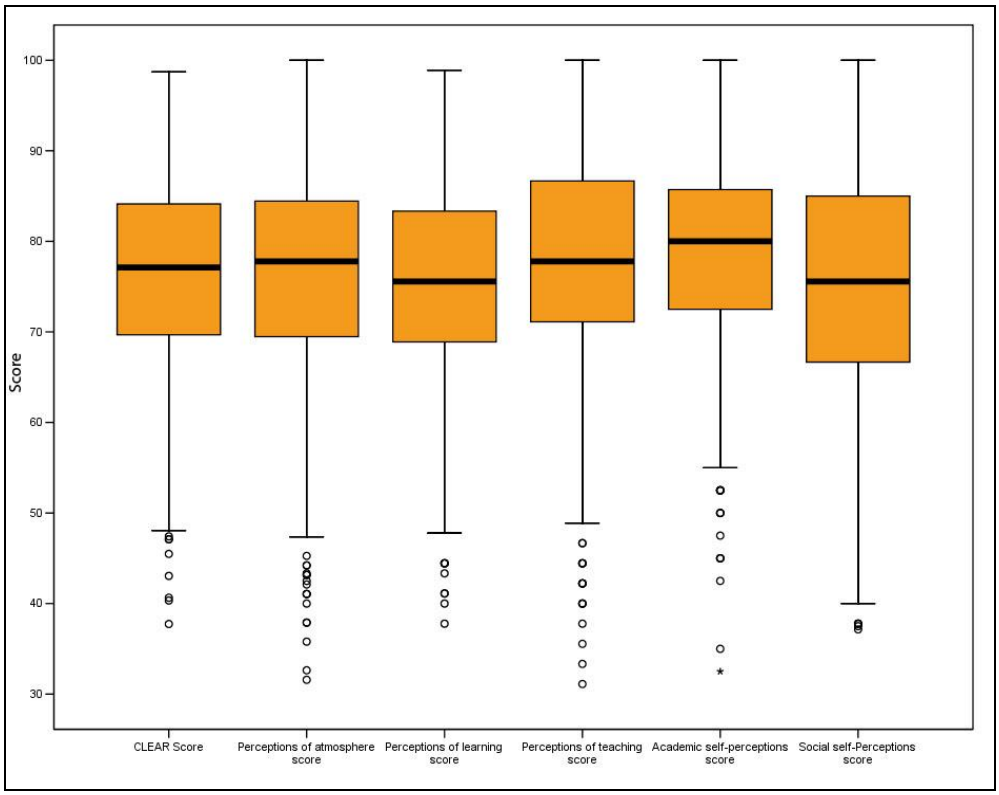

Figure 2: Box plot showing range of CLEAR scores and category scores for the undergraduate survey

In these box plots, the median is represented by the dark horizontal line in the individual orange boxes, whereas the upper and lower boundaries of the orange boxes represent the

third and first quartiles[b] respectively. The lines extending above and below the orange boxes are the inter-quartile range (IQR) of the data multiplied by 1.5. The IQR is a measure of the dispersion of a sample of data and is equal to the difference between the third and first quartiles. Data more than 1.5 IQR below the lower boundary of a 'box' is regarded as an outlier (indicated as an O in the figures), while data more than 3 IQR below the lower boundary of a 'box' is regarded as an extreme outlier (indicated as an * in Figure 2).

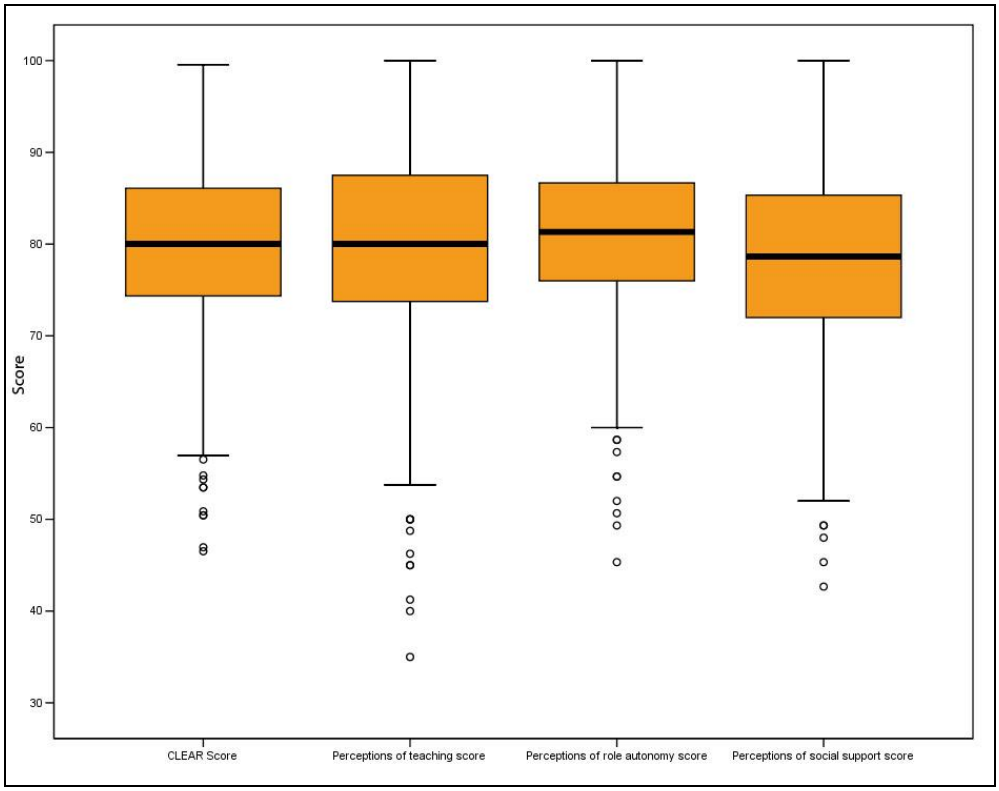

Figure 3: Box plot showing range of CLEAR scores and category scores for the early-graduate survey

It can be seen from this analysis that while there was a sizeable spread of CLEAR scores across the range of hospitals, the majority of CLEAR scores were quite tightly clustered in the range 70-85 (undergraduate) or 75-85 (early-graduate). The category scores were similarly tightly clustered, with only a small variation in the mean scores between the various categories.

3.2.3 Correlation analysis

A series of correlation analyses were undertaken to assess the association between CLEAR scores and each of the categories of items. Correlation is statistically the measure of the association between two variables, and is established by the calculation of a correlation coefficient[c]. Correlation coefficients can range between -1 and +1. A correlation of -1 denotes a perfect negative relationship between two variables, such that as the value of one variable increases, the other decreases. A correlation of +1 indicates that a perfect positive relationship exists between two variables, where an increase in one variable is matched by an increase in the other. A correlation of zero indicates that no relationship exists between two variables. The closer a correlation coefficient is to +1 or -1 the more closely the two variables being assessed are related. The correlations calculated for the five categories in the undergraduate survey are

[b] A quartile divides a sorted sample of data into four equal parts, so that each one represents a quarter of the sampled population. The first quartile indicates the point below which 25% of the sample lies, while the third quartile indicates the point below which 75% of the sample lies.
[c] Correlation was assessed by calculation of the Spearman's rho statistic as the survey involved the use of ordinal data.

presented in Table 6. The correlations calculated for the three categories in the early-graduate survey are presented in Table 7.

Table 6: Correlation between individual undergraduate categories and overall CLEAR

	Correlation coefficient	Significance
Correlation between **perceptions of atmosphere** and overall endorsement of placement site.	0.938	p <0.001
Correlation between **perceptions of learning** and overall endorsement of placement site.	0.938	p <0.001
Correlation between **perceptions of teachers** and overall endorsement of placement site.	0.849	p <0.001
Correlation between **academic self-perceptions** and overall endorsement of placement site.	0.794	p <0.001
Correlation between **social self-perceptions** and overall endorsement of placement site.	0.849	p <0.001

Table 7: Correlation between individual early-graduate categories and overall CLEAR

	Correlation coefficient	Significance
Correlation between **perceptions of teaching** and overall endorsement of employment site.	0.937	p <0.001
Correlation between **perceptions of role autonomy** and overall endorsement of employment site.	0.910	p <0.001
Correlation between **perceptions of social support** and overall endorsement of employment site.	0.914	p <0.001

This analysis shows that, for the undergraduate survey, the highest positive correlation with the overall approval rating was seen for *perceptions of atmosphere* and *perceptions of learning*. The lowest positive correlation with the overall approval rating was with *academic self-perception*. Amongst the early-graduate responses, a similar level of positive correlation was found with all three categories of items.

Correlation coefficients were also calculated (for both the undergraduate and early-graduate surveys) between individual survey items and CLEAR scores. The five items that demonstrated the highest correlation with overall endorsement in the undergraduate and early-graduate surveys respectively are presented in Table 8. A full list of the correlations between all items and placement/employment site endorsement is presented in Appendix 4 for undergraduates and Appendix 5 for early-graduates.

Table 8: Statements showing highest positive correlation with CLEAR score

	Correlation coefficient	Significance
Undergraduate survey		
The atmosphere motivated me as a learner.	0.769	p <0.001
The good aspects outweighed the bad aspects of the placement.	0.754	p <0.001
The teaching help develop my confidence.	0.722	p <0.001
The teaching encouraged me to be an active learner.	0.711	p <0.001
The placement time was put to good use.	0.710	p <0.001

	Correlation coefficient	Significance
Early-graduate survey		
Senior colleagues promote an atmosphere of mutual respect.	0.748	p <0.001
My senior colleagues have good mentoring skills.	0.740	p <0.001
Senior staff utilise teaching opportunities effectively.	0.738	p <0.001
My senior colleagues have good teaching skills.	0.731	p <0.001
My senior colleagues demonstrate good professional standards.	0.720	p <0.001

3.2.4 Selection of case study sites

The primary purpose of the undergraduate and early-graduate surveys was to assist in the identification of sites for subsequent case study. Therefore, the CLEAR scores for each respondent for each hospital were compiled and median scores were determined (undergraduate and early-graduate scores were considered separately). Hospitals were then ranked according to their median CLEAR scores in each survey. The proportion of CLEAR scores falling in the low (CLEAR = 26-50), middle (CLEAR = 51-75) and top (CLEAR = 76-100) range was also tabulated for each hospital. The ratings were broken down by discipline to allow a more detailed understanding of how the different learners perceived each hospital environment. Only hospitals with greater than five responses in both the early-graduate and undergraduate surveys were included in this analysis. This information, together with other criteria, was used to select case study sites (see Section 1.4.7 - Selection of case study sites).

Once the case study sites were selected, correlations between individual survey items and the overall level of endorsement were calculated for each site, to identify key issues relevant to that site and to inform the conduct of each case study. The five survey items that demonstrated the strongest positive correlation with overall endorsement at each of the selected case study sites is presented in Table 9.

Table 9: Highest survey item correlations for case study sites

Site and survey item	Correlation coefficient	Significance
Austin Health: Undergraduate survey item		
The atmosphere motivated me as a learner.	0.776	p<0.001
The good aspects outweighed the bad aspects of the placement.	0.750	p<0.001
This placement was well timetabled.	0.735	p<0.001
I was clear about the learning objectives of the placement.	0.653	p<0.001
Much of what I learned seems relevant to a career in healthcare.	0.648	p<0.001
Austin Health: Early-graduate survey item		
The quality of early-graduate clinical supervision is good.	0.833	p<0.001
My senior colleagues demonstrate good professional standards.	0.814	p<0.001
Senior staff utilise teaching opportunities effectively.	0.789	p<0.001
The orientation/induction I received to this workplace was adequate.	0.761	p<0.001
Senior colleagues provide me with constructive feedback on my strengths and weaknesses.	0.758	p<0.001

Site and survey item	Correlation coefficient	Significance
Barwon Health: Undergraduate survey item		
The teaching and learning activities provided me with the opportunity to fulfil the objectives of the placement.	0.890	p<0.001
The placement helped me to further develop clinical reasoning skills.	0.842	p<0.001
I felt comfortable socially in teaching sessions.	0.838	p<0.001
The atmosphere during the teaching sessions involving patients was conducive to learning.	0.836	p<0.001
The atmosphere motivated me as a learner.	0.819	p<0.001
Barwon Health: Early-graduate survey item		
My senior colleagues establish clear expectations.	0.845	p<0.04
I have an appropriate level of responsibility in my current position.	0.828	p<0.05
I have good collaboration with other professionals of my discipline at my level.	0.828	p<0.05
I feel physically safe in my work environment.	0.828	p<0.05
I get a lot of satisfaction out of my present job.	0.828	p<0.05
Latrobe Regional Hospital: Undergraduate survey item		
The teaching helped to develop my confidence.	0.862	p<0.001
I was introduced to relevant members of the team.	0.821	p<0.001
The amount of supervision I received was about right.	0.818	p<0.001
I felt my ideas and opinions were respected by the teachers.	0.811	p<0.001
The teachers had good "bedside manner".	0.799	p<0.001
Latrobe Regional Hospital: Early-graduate survey item		
I have allocated time for professional development in this position.	0.918	p<0.05
I have good collaboration with other professionals of my discipline at my level.	0.918	p<0.05
I feel I am able to ask questions I would like to.	0.918	p<0.05
My senior colleagues demonstrate good professional standards.	0.918	p<0.05
I get a lot of satisfaction out of my present job.	0.918	p<0.05
Peninsula Health: Undergraduate survey item		
If I had problems with my clinical placement, I could discuss these with someone at the hospital during the placement.	0.902	p<0.001
The good aspects outweighed the bad aspects of the placement.	0.879	p<0.001
I felt I was being well prepared for my profession.	0.867	p<0.001
The teachers provided constructive criticism.	0.867	p<0.001
The placement time was put to good use.	0.853	p<0.001
Peninsula Health: Early-graduate survey item		
My senior colleagues are accessible.	0.905	p<0.001
Other facilities provided for staff (e.g. tea room, lounge, etc) are adequate.	0.864	p<0.001
My senior colleagues have good teaching skills.	0.862	p<0.001
I get a lot of satisfaction out of my present job.	0.848	p<0.001
Senior colleagues promote an atmosphere of mutual respect.	0.842	p<0.001

3.2.5 Analysis of Variance

A series of One-way Analysis of Variance (ANOVA) were performed to investigate patterns of responses in the undergraduate and early-graduate surveys[d]. Analysis of variance is a statistical procedure for identifying whether the differences between means (averages), for groups or variables, is statistically significant. This is done by separating the variance in the data into that attributable to random error and that which is a consequence of true differences between means, to produce a calculated *F statistic*[e]. The statistical significance of the calculated F statistic is indicated by the 'p value' (the smaller the p value, the more statistically significant a result is considered to be; non-statistically significant results are indicated by 'NS'). Identification of a statistically significant effect in an ANOVA often leads to further (*post hoc*) tests to identify differences between groups.

Analysis of variance is best understood by considering a hypothetical example. Suppose three hospital sites are being compared, with the following mean CLEAR scores:

Hospital	Mean CLEAR score[f]	Standard deviation
Site 1	76.51	7.358
Site 2	73.65	10.723
Site 3	82.97	9.730

Analysis of variance would show there is a significant difference in the mean CLEAR score across the three sites [$F(2,87)=5.414$, $p<0.05$]. However, even though the mean scores are clearly different, the range of scores that produced each mean might not be significantly different from each other. If this were the case, further analysis carried out on the CLEAR scores for sites 1, 2 and 3 might demonstrate that the CLEAR scores for site 3 were significantly higher than those for site 2, but there is not a significant difference between responses from staff at site 1 and staff at sites 2 or 3. Thus, while there can be significant differences across a group (i.e. from one end of the range to the other), it may not be possible to see significant differences when comparing any two elements within the group to each other.

Returning to the results of the two surveys, when the CLEAR scores in the undergraduate survey were analysed using ANOVA, it was determined that scores did not vary significantly between hospital sites [$F(18,420)=1.610$, NS]. On the other hand, analysis of the CLEAR scores for the early-graduate survey revealed that responses varied significantly across the hospital sites [$F(15,219)=1.758$, $p < 0.05$]. However, *post hoc* analysis of the early-graduate responses failed to identify significant differences between specific sites.

This suggests that undergraduate respondents showed similar levels of endorsement/approval of hospital sites, whilst early-graduates varied (significantly) with regard to their overall endorsement of hospital sites. However, scores relating to individual sites did not differ significantly from each other.

Analysis of the pattern of CLEAR scores recorded across disciplines similarly failed to identify significant variation in undergraduate responses [$F(6,432)=1.946$, NS], whilst significant variation was found across disciplines in the early-graduate survey [$F(6,228)=4.581$, $p<0.001$]. Further analysis of the early-graduate scores showed nurses (mean (M)=80.02, standard deviation (SD)=9.592), OTs (M=82.81, SD=10.981), physiotherapists (M=82.08, SD=8.062) and speech pathologists (M=85.77, SD=7.071) reported high levels of positive

[d] Analysis were only undertaken for those sites that had recorded greater than eight individual survey responses

[e] Analysis of Variance results in the calculation of an F statistic, which is presented in the following format [F(degrees of freedom between groups (groups-1), degree of freedom within groups(total sample size minus the number of groups)=score, significance/NS (Non (statistically) Significant result)

[f] The scores provided were selected for the purpose of the current example and are not actual CLEAR scores derived from either the undergraduate or early-graduate surveys.

endorsement of employment sites, with each of these being significantly higher than the levels of satisfaction/endorsement reported by medical staff (M= 73.75, SD=8.703).

One-way ANOVAs were also undertaken examining the categories of statements in the undergraduate and early-graduate surveys, to determine whether there were significant differences in particular aspects of the experience at each site, or whether different disciplines perceived these aspects differently. This analysis involved review of the scores in each of the categories recorded at individual sites and then separate analysis of the scores provided by individual disciplines. Results for analysis of the undergraduate and early-graduate surveys are presented in Table 10 and Table 11, respectively.

Table 10: ANOVA for placement site and discipline conditions across the undergraduate survey

Category	ANOVA (placement sites)	ANOVA (discipline)
Perceptions of learning	F(18,420)=1.582, NS	F(6,432)=1.737, NS
Perceptions of teaching	F(18,420)=1.546, NS	F(6,432)=1.483, NS
Perceptions of atmosphere	F(18,420)=1.211, NS	F(6,432)=1.322, NS
Academic self-perceptions	F(18,420)=2.106, p<0.01	F(6,432)=4.805, p<0.001
Social self-perceptions	F(18,420)=1.381, NS	F(6,432)=3.141, p<0.005

(NS= not significant at 0.05 level)

In the undergraduate survey, ANOVA found significant variation in the level of endorsement of items relating to academic self-perceptions over both the placement site and discipline conditions (see Table 10). While there was significant variation in the endorsement of items relating to academic self-perceptions across the placement sites, further analysis failed to identify meaningful differences between sites. In relation to the pattern of endorsement of items relating to academic self perceptions across disciplines, *post hoc* analysis showed significantly higher mean levels of endorsement of these items by nursing (M=80.45, SD=11.032) and physiotherapy students (M=80.87, SD=8.279), with their scores being significantly higher than those of medical students (M=74.80, SD=10.026).

Significant variation in the pattern of endorsement of items relating to social self-perceptions was also apparent across disciplines (see Table 10). However, further analysis only identified a difference between the nursing (M=77.20, SD=13.034) and medicine (M=72.77, SD=11.473) students, with nursing students showing a significantly higher mean level of positive endorsement of social support items than medical students.

In the early-graduate survey, perceptions of social support was found to vary significantly across placement sites (see Table 11); however, further analysis failed to identify significant differences in the scores between individual sites.

Table 11: ANOVA for placement site and discipline conditions across the early-graduate surveys

Category	ANOVA (placement sites)	ANOVA (discipline)
Perceptions of teaching	F(15,219)=1.444, NS	F(6,228)=3.828, p<0.001
Perceptions of role autonomy	F(15,219)=1.555, NS	F(6,228)=5.233, p<0.001
Perceptions of social support	F(15,219)= 2.126, p<0.01	F(6,228)=4.548, p<0.001

(NS= not significant at 0.05 level).

Endorsement of items in all of the categories was found to vary significantly across disciplines in the early-graduate survey (see Table 11). Subsequent analysis of the responses to items relating to perceptions of teaching found that OTs (M=83.55, SD=14.078) and speech pathologists (M=88.63, SD=10.282) showed a significantly higher level of positive endorsement of teaching items than medical practitioners (M=74.11, SD=9.529). Results for perceptions of role autonomy similarly showed significantly higher means levels of endorsement by nurses (M= 82.05, SD=8.631) OTs (M=81.89, SD=10.289) and physiotherapists (M=83.60, SD=8.655) when compared with medical practitioners (M=74.38, SD=8.538). Nurses (M=78.71, SD=10.422), OTs (M=82.95, SD=10.055) and speech

pathologists (M=84.65, SD=8.864) also demonstrated significantly higher mean levels of endorsement of items relating to perceptions of social support when compared with medical practitioners (M=72.73, SD=9.953).

In summary, for the early-graduate survey, medical staff demonstrated a lower level – in some cases a statistically lower level – of positive endorsement of items relating to their overall impression of employment sites, as well as in all categories (teaching, role autonomy and social support). These results could be interpreted as a higher level of dissatisfaction with early-graduate employment positions amongst medical staff when compared with early-graduates of other disciplines. However, this inference is only reflective of the areas assessed by the current survey.

3.3 Summary

The data collection processes described in this section were undertaken for two main purposes. Firstly, data collected from learners and university clinical education coordinators would be used as the basis for selection of case study sites. Secondly, interviews with university staff would provide an important perspective on clinical learning environments to inform the development of the best practice framework. Due to the limitations of the survey (previously discussed), it was not considered as a major data source for the creation of the framework.

These purposes aside, the online learner surveys produced a large amount of data that potentially provides insights into individual clinical learning environments and learner experiences within them. However, as participants in the learner surveys were self-selected, it is not clear how representative the responses are of learner populations more broadly at those sites and this necessarily limits how the survey data are interpreted. It is clear from the limited ANOVA tests applied to the data that there are significant variations in the ratings learners give to individual sites and there are observable differences between learners of different disciplines. There are also differences in the way learners rate different aspects of their experience. These findings probably warrant further investigation and individual health services may find it useful to undertake a more systematic application of one of the validated survey instruments as a quality assurance exercise and to help identify any aspects of their clinical learning environments that might be well served by additional resources.

4 Case Studies

4.1 Overview

Based principally on data collected through online surveys of undergraduate and early-graduate learners, four hospitals were selected for case study:

- Austin Health (The Austin Hospital)
- Barwon Health (The Geelong Hospital)
- Latrobe Regional Hospital
- Peninsula Health (Frankston Hospital)

Between them, these four hospitals provide a good cross-section of Victoria's public hospital system in relation to size, geographical location, demographics of catchment population and overall resourcing and infrastructure. However, these hospitals are not meant to 'represent' other hospitals with similar circumstances and characteristics and each case study should be viewed only as a window to the practices of that particular hospital. Furthermore, the case studies are not intended as an example of what other hospitals *should* do, but instead provide insight into what these four hospitals *are* doing. Indeed, if not for the time constraints of the project, many other hospitals would have been worthy of case study, providing equally impressive examples of innovation and high quality practice as the four hospitals that were selected. Nevertheless, as the case study sites were selected because they rated favourably with learners (amongst other criteria), it was expected the practices observed at those sites would reflect current best practice in Victoria.

Ideally, case studies should be conducted over an extended period of time, to allow the observation of different phases in the educational cycle (preparation, delivery, debrief and evaluation, refinement) and multiple learner cohorts. However, this was not possible in the context of this project and this reduces to some extent the breadth of conclusions that can be drawn. There are five specific limitations worth noting.

- The case study only documents the input of those individuals who were available to participate in the one week timeframe of the site visit. This is necessarily only a limited sample of both staff and learners and it is not known whether the views expressed by those who did participate are a representative cross-section of all views.
- The only educational activities observed were those that happened to be scheduled for the week of the site visit.
- Opportunities for the consultant to interact with staff and learners were structured, limited and somewhat scripted and participation by staff and learners reflected a degree of self-selection. That is, participants were more likely to be individuals who felt motivated to attend discussion sessions and provide input. If the case study were conducted over a longer period of time, there would be many *ad hoc* opportunities to interact and this may have presented a different 'face' of the organisation to the observer.
- There were no opportunities to speak with patients. The inclusion of patients as informants in the project would have required a full application to a human research ethics committee and this was not feasible in the timeframe.
- The four case study site visits were undertaken by three members of the Project Team, with one of the team members handling two of the site visits. Therefore, only one of the team members had first-hand experience of more than one site.

Despite these limitations, the case study site visits provided a wealth of information about the delivery of clinical education *at the coalface*. Furthermore, as the following case study reports document, different hospital sites and health professions already have a great deal in common in their approach to clinical education.

4.2 Austin Health Case Study (Austin Hospital)

4.2.1 Introduction

The site visit for the Austin Health case study took place over five consecutive days commencing on 29 September 2008. There were seven one-on-one interviews conducted with key informants including the CEO, the chief medical officer, the acting HR director, various heads of departments and course co-ordinators. In addition, there were small group interviews with the directors of both undergraduate and early-graduate education, as well as eight small focus groups (total of nearly 40 participants) with clinical education co-ordinators, clinical educators and undergraduate and early-graduate learners. Only medicine, nursing, OT, physiotherapy and speech pathology representatives contributed to this case study; podiatry and social work, although invited to participate, did not do so. A tour of the Austin Hospital facilities most relevant to education delivery was arranged, as well as opportunities to attend various tutorials in the clinical skills centre. Case presentations in the education centre lecture theatre and additional tutorials in the education centre were also observed.

4.2.2 Austin Health at a glance

Austin Health, which comprises the Austin Hospital, Heidelberg Repatriation Hospital and the Royal Talbot Rehabilitation Centre, is the major provider of tertiary health services, health professional education and research in the northeast of Melbourne[65]. The Austin Hospital, located in Heidelberg, was first established in 1882, with its most recent re-opening being in 2005 after a major redevelopment. The redeveloped hospital now comprises 400 acute beds, a 30-bed intensive care unit, one of the state's largest emergency departments, a 26-bed spinal unit and 55 mental health beds. The hospital also features a unique teaching, training and research precinct located largely on Level 4 of the Austin Hospital Tower, as well as teaching space and laboratory facilities on each level of the Austin Hospital[65].

There were in excess of 221,000 patients treated at the Austin Hospital (including the Repatriation Hospital) during the 2007-2008 financial year. This includes hospital admissions, emergency department attendances and patient treatments in specialist outpatient clinics[66]. The hospital employs about 7,200 staff, including 1,752 equivalent full-time (EFT) nurses and 154 EFT allied health staff.

4.2.3 An overview of clinical education at the Austin Hospital

The Austin Hospital has a reputation of being one of Australia's leading teaching, training and research hospitals and its facilities are some of the newest and best in the country. The Medical Education Unit (MEU) provides training, education and assessment programmes for over 400 junior medical staff (interns, HMO2 and HMO3) and the Clinical Nursing Education Department (CNED) offers educational programmes and support to nursing staff and students.

An affiliation with the University of Melbourne commenced in 1965 when the Austin Hospital Clinical School was established[65]. Austin Health now hosts the university's departments of medicine, surgery, psychiatry, psychology and physiotherapy, representing the largest number of students studying health professions on a single site outside of a university[65]. Austin Health also has strong links, particularly in nursing, to the geographically proximal La Trobe University (Bundoora Campus) and RMIT University (Bundoora Campus).

4.2.4 Resources and Infrastructure

There has been a significant investment in educational infrastructure in recent years, reflecting the high priority given to clinical education by the Austin Hospital and its university and government partners. Much of the fourth floor of the hospital is dedicated to teaching facilities, with an education centre that incorporates a lecture theatre, a number of tutorial rooms (of varying seating capacities) with full audio-visual (AV) facilities, as well as a large open foyer-like area that is used for educational functions.

Level 4 also accommodates the well-serviced HMO lounge and overnight accommodation, HMO services and the undergraduate student common room (funded by the University of Melbourne and La Trobe University) available to all medicine, nursing and allied health students.

All of these facilities were built in 2005 and are modern, clean and provide a very pleasant environment.

In addition to the education centre, there is a Clinical Skills Centre (CSC) located on Level 7, which was opened five weeks before the case study site visit. The CSC is a resource for the clinical (including communication skills) education of all undergraduates, early-graduates and staff from all disciplines across the hospital. Its development and maintenance is a financial collaboration between a number of stakeholders. The space for the centre was donated by the hospital, the capital works were partly funded by the DHS, and two universities (La Trobe and Melbourne) contribute to the recurrent budget of the centre, covering the cost of consumables and a part-time (0.6 Equivalent Full-Time; EFT) lab technician.

The CSC incorporates three laboratories. The dry lab is set up to simulate a four-bed ward found in the hospital, while the wet lab is available for teaching clinical techniques such as suturing and can accommodate approximately 15 learners at a time. The third laboratory is a SimMan lab, which can be set up to simulate a four-bed ward and cater for simulation learning. In addition to the three labs, there are two tutorial rooms and a trainer's office that is effectively a preparation room for tutorials. Currently there are no AV facilities available in any of the labs or tutorial rooms, as there is no budget for these resources.

The MEU and the CNED are the major non-infrastructure educational resources at the Austin Hospital. They are co-located in the education centre, bringing together the full range of staff involved in educational activities, including directors, managers, deans and clinical educators. This arrangement was set up to make communication much easier and friendlier, as everyone can just "pop their head into an office". The MEU, a team of 5.5 EFT staff led by the Director of Medical Education, is largely responsible for the ongoing education of junior doctors, although the unit also provides resources for undergraduate medical education. The CNED has 20 EFT staff and serves as a resource for all levels of nursing education.

The other major resource available to all learners and staff is the hospital library located on Level 4, which is spacious and well resourced.

Patients are seen as a very important resource in the clinical learning environment of the Austin Hospital. As would be expected for a large metropolitan hospital, the case load offers learning opportunities involving a wide range of medical conditions and types of patients. Educators take a proactive approach to ensuring this resource is appropriately tapped into, seeking out learners (particularly early-graduates) to encourage them to (at the very least) observe an interesting, medically challenging or unusual case when one presents. Learners at all levels and across all disciplines spoke in very positive terms about the breadth of clinical learning opportunities available at the hospital.

4.2.5 The organisational culture at the Austin Hospital

The CNED – with its budget of $2.5 million per year – the MEU and CSC are all indicative of an organisational culture that values learning and is prepared to invest in education. Indeed, this investment was described as ultimately being "an investment in our workforce". Senior staff also noted the strong academic and research culture that exists at the Austin Hospital is very clearly linked with promoting excellence and evidence-based best practice clinical practice.

Virtually every individual who made input into the case study described the *expectation to teach* as an integral component of each clinical appointment, regardless of discipline. Educators indicated they value the opportunity to teach, they put time into preparing to teach and value the students. Perhaps the most interesting aspect of the educators' attitude was that it was not seen as being remarkable at all ("It is just what we do… we look after patients and teach students"). Despite this institutional approach to education, teaching and learning activities were almost always in addition to a full clinical load.

The value placed on education at the Austin Hospital extends well beyond the formal teaching of undergraduate students and there is an organisational expectation that early-graduates have to learn on the job. Across all disciplines, there was universal agreement amongst educators and senior staff that graduates are not work-ready immediately following graduation and the ongoing education of staff is factored into the overall education agenda. For those professions with formal vocational training programmes, all recruits get the support they require to succeed; for example, the Austin Hospital had a high pass rate (greater than 80%) for the most recent physician training exams, compared to 50-60% at most other hospitals.

Another interesting aspect of the organisational culture relates to recruitment of staff. On a number of occasions, senior staff mentioned a strategic decision to employ "nice" staff when recruiting. This is seen as being more important than employing the best or the brightest. The rationale for this approach is that "nice" people are better at looking after patients, colleagues and students and this contributes to a better working and learning environment in the hospital. Furthermore, interview participants – from students right through to the Chief Medical Officer – indicated that the strong educational culture at the Austin Hospital is influential in student (and staff) recruitment and retention.

Balanced, open communication was another aspect of the organisational culture that was apparent throughout the site visit. Communication appeared to work well between levels in the organisation and individuals contributing to case study discussions were as comfortable talking about the difficulties encountered with current educational models and practices as they were in speaking about the hospital's educational innovations.

4.2.6 Undergraduate clinical education

The Austin Hospital places students across its full range of health professional disciplines, accommodating students enrolled in undergraduate courses at a number of universities, particularly Melbourne, La Trobe, Deakin, Charles Sturt, Monash and RMIT.

Medicine

At the present time, the Austin Hospital places more than 90 medical students each year. The majority of these students (~60) are in their first clinical year, while approximately 35 are in their final clinical semester (pre-internship).

The positive attitude towards clinical education of undergraduate medical students at the Austin Hospital is supported by the strong exclusive relationship between the University of Melbourne and Austin Health. University positions such as the Dean of Clinical Medicine, physically based in an office within the MEU, provide tangible support for the relationship. Co-location with hospital education co-ordinators allows greater harmonisation of activities, helping to make the clinical learning environment positive for both students and staff. The result is that clinical staff actually approach the Dean of Clinical Medicine, requesting an opportunity to teach. Clinicians see tangible benefits around teaching, including an honorary university title, library access, opportunities to set up networks and collaborations and career progression.

Austin Hospital staff expressed the view that a significant amount of the clinical education of undergraduates is performed on a *pro bono* basis. It was generally accepted this has worked historically for better or worse, but it was also agreed this model of education has shortcomings with regards to consistency, probably does not represent best practice and is not sustainable into the future.

Students described an undergraduate clinical educational model, which largely involved observation in a group of eight students. Students are allocated to a group in the first year of their medical degree which is their clinical group for their entire degree. The dynamics of the group of students was said to be important to the clinical placement experience. When working well, these groups provided a good peer support mechanism. The clinical sub-dean was acknowledged by students as an important support person at the Austin, in particular on the rare occasion that the group has difficulties. Within the undergraduate medical education

model, students indicated that they do not get the opportunity to interact with patients until their final undergraduate semester. Some found this frustrating and described feeling "like a third wheel", whereas others indicated that observation in a safe environment over a number of years allowed them to build knowledge and confidence prior to being hands on with patients.

During the pre-internship semester, students have three five-week clinical placements within medicine, surgery and general practice. Students are allocated to a unit, intern and registrar and go on ward rounds. In addition, they attend tutorials, seminars and case presentations. The students indicated their clinical learning is largely dependent on the medical team they are allocated to, in particular, how interested the consultant, registrar and intern are in taking the time and opportunity for clinical education while on ward rounds. For the most part, students commented that consultants, registrars and particularly interns were encouraging, happy to teach and often gave them an opportunity to get involved. However, there were a small number of instances reported by students in which they felt there was time available for clinical education, but the senior clinicians appeared uninterested in teaching.

Nursing

The undergraduate nurse education programme across the Austin Heath network is very large, with approximately 1,200 students from 17 universities undertaking placements there each year. The general view of the health service is that student nurses are highly valued and this is made clear to the students from their very first day, when they welcomed by either the Director of Nursing or another senior nurse.

Undergraduate nursing clinical education is supported at the Austin Hospital by the CNED and dedicated staff who interact with key universities (particularly La Trobe and RMIT) and the Austin Hospital. The hospital uses two models of student nurse education, reflecting the relationship between the hospital and the various training providers that place students at the health service.

For example, La Trobe University use Professional Development Nurses (PDNs) to educate their third year undergraduates. These nurses are similar to preceptors, and range from early-graduate nurses in their first or second year post-qualification to very senior nurses with many years of nursing experience. They receive extra training from the university about the La Trobe curriculum and therefore know where the students are on their learning pathway and can teach accordingly. The single biggest benefit to the students is the consistency and continuity of education, as each student is allocated one or two PDNs for their whole rotation. This minimises repetition that sometimes occurs when students work with different preceptors and reduces the likelihood that important training will be missed. *Continuity* was cited by many nursing students as being the most important factor that impacts on their clinical experience.

Another model administered through CNED is the clinical teacher/facilitator (CT) model, used to educate all remaining undergraduates. In this model, each student is assigned to a buddy, who is essentially analogous to a preceptor, and each CT has overall responsibility for a group of eight buddied students. The CT moves amongst the group of students throughout the day, providing additional support for both students and buddies. The CT is seconded from the ward during clinical rotations; they get an increase in salary and their position is back-filled, paid for by the university. This model has the benefit of the CT being familiar with the hospital and ward staff, allowing students to assimilate and orientate more quickly. Indeed, a variation of this model used by some universities, whereby CTs who are not Austin Hospital staff are engaged for the role, reportedly does not work as well.

The view of the hospital is that both the PDN and CT models reflect the *ideal situation*, namely that Austin Hospital clinical staff are delivering clinical education to nursing students. Noting the importance of having educators who are properly trained for the task, Austin Hospital encourages all CTs to obtain a Certificate IV in Workplace Training and Assessment and the health service runs a clinical education course for nurse educators each year (38 hours undertaken over a six-week period).

Allied Health

Austin Health has a large programme of clinical placements for undergraduate students, although there are significant differences between the disciplines in the number and source of students and the format of the placements. For example, in 2008, approximately 80 physiotherapy students (all from the University of Melbourne) were placed at the health service, with roughly equal numbers of third and fourth year students and four supervisors for every ten students. In the case of OT, a total of 81 clinical placements were accommodated, involving students from La Trobe, Charles Sturt, Deakin and Monash Universities. In the same period, speech pathology provided placements for 87 undergraduate students, although the majority of these (64) were a three-hour observational placement only.

Although only physiotherapy, speech pathology and OT participated in this case study, it was apparent the educational commitment across allied health is as strong as that of medicine and nursing.

This commitment was particularly evident in physiotherapy, which has an exclusive arrangement with the University Melbourne for clinical education of its undergraduate students. Students have a range of clinical learning experiences at Austin Health over the four years of their course. In their first clinical placement year, they shadow a physiotherapist; in their second year they do a one week placement; their third and fourth years are largely spent on longer placements (three six-week rotations) across Austin Health and a rural site. Students are expected to prepare for each clinical placement with self-directed learning packages and tutorials available online. Within physiotherapy, staff are expected and encouraged to teach, with a ratio of supervisors to students of 2:6 and some staff have protected teaching time that is paid for by the university. However, it was generally acknowledged by staff at all levels that pressure on resources at Austin Health means that undergraduates do not have the level of supervision they would like. To further encourage and thank clinical staff, there is an award for best physiotherapy educator of the year, which is voted on by students.

Occupational therapy described a strong tradition of supervision within their discipline. However, clinical placements for undergraduate students are complicated by the fact that students are from four different universities at different educational stages with different skill sets.

Staff noted that for allied health disciplines other than physiotherapy and dietetics, there is little if any structure or support for education. There are no centralised arrangements and no dedicated teaching positions. Indeed, allied health within Austin Health faces many challenges in delivering clinical education to students, due mainly to the disparate nature of education between disciplines and the lack of resources and capacity resulting from the small size of departments. Understaffing was highlighted as a major contributing problem, although it is recognised the education of undergraduate students may help to address understaffing problems in the future. Adding to this, while protected preparation and teaching time is essential to the delivery of best practice during training sessions, there is no backfill (or capacity for backfill) when a clinician is teaching students, resulting in clinicians teaching students over and above their normal caseload.

4.2.7 Early-graduate education

Across the five disciplines that participated in the case study, all except speech pathology reported that a moderate proportion of their staff are early-graduates, that is, within the first two or three years of completing their professional qualification.

Medicine

All intern and HMO2 positions are jointly recruited by Austin and Northern Health through the PMCV computer match system. There is a policy for Austin Hospital-trained University of Melbourne medical graduates to be preferentially selected for their intern year at the Austin Hospital and the return rate is approximately 50%. A major benefit of this policy is that

returning graduates are already familiar with the site, the people, processes and systems. Indeed, the ideal from the hospital's perspective is for Austin-educated students to become interns, who then become registrars and – eventually – educators. In 2008 there were 73 interns (32 of whom are at the Austin Hospital at any one time) and this is expected to increase to 80 interns in 2009. There are currently 69 HMO2 and 62 HMO3 staff, with numbers expected to remain the same for 2009.

In discussions with senior staff and educators involved in training junior doctors, it was apparent that even a well-resourced hospital like Austin Hospital – where education is integral to the organisational philosophy – faces serious challenges in delivering post-graduate medical education. The impact of the major competing forces – productivity in terms of patient service delivery versus ever-increasing teaching demands on clinicians' time – is felt more acutely by those responsible for training junior doctors, because pre-vocational training is largely unstructured. The MEU, which is responsible for education of junior doctors, is aware of the need for pre-vocational training to be more structured and formalised and is working towards achieving this.

At the beginning of the year, the MEU timetables 44 one-hour education sessions for interns and HMOs (non-compulsory). These structured training sessions have specific topics, allowing early-graduates to know what they will be learning about and the educator has three or four principles they want junior doctors to have learnt during the session. These sessions serve to reinforce and extend what was taught in medical school. Approximately 85% of interns attend the sessions with 28% of second and third year HMOs attending. This reduced attendance reflects the increased workload of HMOs in later years, as well as off-site and night duty positions.

In addition, the MEU organises workshops, which are specialty/sub-specialty specific (e.g. re-skilling - suturing), both after hours and on weekends. These tend to be better attended. The MEU would like to record these sessions and make electronic versions available, so that early-graduates unable to attend can have access to the information. However, there are currently no facilities or resources available to do this.

The MEU benchmarks against the Australian Curriculum Framework for Junior Doctors which contains guidelines for both learners and trainers, and the success of the educational programme is monitored through feedback from learners collected at each session. The MEU have also made feedback, assessment and evaluation available online.

Another major issue for junior doctor training is that the senior clinicians reported that they effectively make their educational contribution *pro bono* and there is growing recognition this arrangement is unsustainable. What is more, good educators tend to be called on a lot and burn-out is a real problem. The chronic shortage of good educators is exacerbated as more clinicians decline requests to teach, preferring to undertake research to further their careers, or have greater involvement in private practice to increase their incomes. A related issue is that medical educators tend to have no formal training in education and so there can be large differences in the quality of teaching.

Interestingly, the clinical educators who contributed to this case study indicated they do not want financial reward for teaching. Their preference is for better access to resources and infrastructure to make education more efficient and protected time to better prepare lectures and tutorials and for their own professional development. Indeed, one physician noted the ability to dedicate some time to teaching and professional development would actually improve overall productivity, particularly in a high-stress environment like the emergency department. Clinical educators also noted that more innovative teaching requires money to be invested in infrastructure and suggested greater use could be made of technology. For example, a surgeon might use a *web cam* on ward rounds. Not only could more students be taught at a time, but those students unable to attend the ward round could subsequently gain access to the learning opportunity.

The hospital does recognise these issues and makes efforts to thank and recognise medical educators. Towards the end of each year, there is a medicine awards night attended by staff and learners; presentations are made to clinical educators based on recommendations made by interns and HMO2s and 3s.

Nursing

The Austin Hospital's graduate nurse year programme (GNYP) was revised in 2002 and has increased nursing retention rates significantly (from 40% in 2002 to 95% in 2008), with 88% of postgraduate nurses still employed at Austin Health four years post-graduation. The programme started with four clinical support nurses (CSN) based in CNED, each responsible for 15 to 17 early-graduates. The number of CSN has increased to nine and the number of early-graduates in the programme has increased to 114 and will further increase to 130 in 2009.

The GNYP is the overall responsibility of the GNYP Coordinator. Each CSN visits each graduate nurse s/he is responsible for in the morning and the afternoon and is available on-call the remainder of the time, although not after hours. This means early-graduates have access to adequate support as required, with CSNs working as a team and matched to their area of speciality. Other educators including ward-based preceptors, clinical nurse educators and senior nurse specialists also support early-graduates. All CSNs are internal staff and have a Certificate IV or a Graduate Diploma in clinical education. Although the GNYP represents a significant cost to Austin Health, senior hospital management indicated the results seen since 2002, with excellent recruitment and retention rates and positive feedback from both learners and educators, justify the cost as an investment in the workforce.

As discussed earlier, some of the early-graduate nurses work as PDNs, teaching undergraduate students from La Trobe University. As they are only in their first or second year post-graduation themselves, PDNs can be inexperienced in dealing with difficult students and the university and Austin Hospital provide additional support as required. This model is therefore considered a good professional development opportunity for early-graduate nurses.

Allied Health

Of the three allied health disciplines participating in the case study, only physiotherapy and OT indicated they currently have early-graduate staff. Physiotherapy currently has ten Grade 1 staff, of which six are in their first post-graduate year. In OT, 12 of the 46 clinical staff are early-graduates.

Most of the input on clinical education for early-graduates was provided by the physiotherapists. They indicated that professional development of early-graduates within the physiotherapy department includes weekly in-service education that is compulsory for early-graduates to attend, professional development programmes run through the department and external weekend courses run by the Australian Physiotherapy Association. Staff are able to access funds to partially cover professional education costs, with increasing levels of funding available according to seniority. These funds are made available through a specific purpose fund, which is part of the departmental budget.

The physiotherapy department works hard to foster and support a welcoming and collegiate environment for early-graduates, particularly as they are expected to make a full contribution to the department from their very first day. Grade 1 physiotherapists are expected to work independently under supervision immediately after graduation, although their work readiness varies significantly depending on where they did their undergraduate studies.

Physiotherapy has a 50% retention rate of undergraduates staying within Austin Health for their first postgraduate year. This drops significantly however, with a large proportion leaving after their graduate year. Physiotherapy was described as a very mobile workforce and this presents a challenge to large hospitals trying to develop depth in their clinical education capacity. The largely female workforce has a high rate of loss of staff by five years post-graduation (80%), mainly due to maternity leave, overseas travel and lack of clear career pathways.

Aside from physiotherapy, other informants noted that as some allied health professions are not regulated, early-graduate supervision and professional development can be variable, with each discipline largely managing itself. It was generally agreed that graduates are not work ready and that it takes about six months of supervised practice before they are able to independently manage a case load with confidence and competence.

4.2.8 Summary

The Austin Hospital case study provided an opportunity to understand how clinical education of undergraduate and early-graduate learners is handled in a large, well-resourced metropolitan hospital. Key impressions from the site visit include:

- Austin Hospital has a strong educational culture, with all clinicians expected to have a role in teaching and learning. This culture is seen as contributing to the recruitment and preparation of confident and competent practitioners.
- Teaching is one of the Austin Hospital's main priorities, demonstrated by good relationships with training providers and reinforced with joint academic positions, including some very senior appointments. Position descriptions for all clinical staff include a requirement to participate in educational activities. Nevertheless, staff describe their teaching activities as '*pro bono*', suggesting their overall workload does not adequately take account of these activities.
- Clinical education is supported by good infrastructure and resources.
- There was universal recognition that graduates are generally not work ready and therefore ongoing education and support of early-graduates is an essential component of the hospital's education programme.
- The establishment of formalised structures, such as the MEU and CNED, are an important educational resource for the organisation.
- With the exception of nursing, lack of formal training in teaching skills is almost universal amongst clinical educators.
- Undergraduate nursing clinical education at Austin Health is an example of two different educational models – the PDN model and the CT model – being implemented successfully side-by-side within the one organisation.
- There is growing recognition of time pressures, especially with competing clinical, teaching, administrative and research demands on educators and increasing student numbers.

4.3 Barwon Health Case Study (The Geelong Hospital)

4.3.1 Introduction

The site visit for the case study at Barwon Health was conducted at The Geelong Hospital in the period 6-9 October 2008.

The visit was organised through the Barwon Health Medical Education Unit and included 20 interview/group discussion sessions, several opportunities to observe educational activities and a tour of facilities, which allowed for more casual interaction with learners and educators.

Over the course of the site visit, there was engagement with senior management of the health service (CEO, Executive Director HR, Executive Director Nursing and Midwifery), as well as directors of educational programmes, clinical education coordinators, clinical educators and learners at both undergraduate and early-graduate level. For medicine and the allied health disciplines, there were discussions with coordinators, educators and learners at both levels, whereas for nursing, discussions were primarily with coordinators and educators. Allied health participation was mainly in the disciplines of physiotherapy, OT and social work, although there were also opportunities to speak with staff from speech pathology, podiatry, pharmacy, radiography and audiology.

4.3.2 Barwon Health at a glance

Barwon Health was formed in April 1998 through the voluntary amalgamation of The Geelong Hospital, the McKellar Centre and three community health services (Geelong, Surfcoast and Corio). It is the largest regional health service in Victoria, with a total capacity of over 970 beds across 21 sites, serving a population catchment of about 450,000 people. Health services include emergency and acute services, mental health, primary care, community services, aged care and sub-acute/rehabilitation.

The major acute facility within Barwon Health is The Geelong Hospital, a 400-bed centre. The hospital treats over 60,000 inpatients, performs approximately 15,000 operations and has about 42,000 emergency attendances each year. The hospital has a full suite of medical and surgical services, including obstetric, paediatric and psychiatric beds. With the exception of neurosurgery and transplantation, virtually all other specialties are available at the hospital, including cardiothoracic surgery and cancer services.

The McKellar Centre (formerly the Grace McKellar Centre) is a separate sub-acute site for inpatient and community rehabilitation, as well as aged care services (including residential aged care facilities). The state-of-the-art Inpatient Rehabilitation Centre (IRC), opened in 2005, has 100 beds and provides sub-acute services for neurological conditions (including stroke), amputees, trauma patients, ortho-geriatric and palliative care. The new Community Rehabilitation Centre (CRC), which was opened in late 2006, provides many specialist services including physiotherapy, OT, speech pathology, psychology, dietetics, social work, orthotics, prosthetics and home rehabilitation programmes. Specialist clinics including continence, falls and mobility and the Cognitive Dementia and Memory Service are also available. Paediatric and adult services are available.

Barwon Health also has five major community health centres that provide a range of services to the Barwon region. They are located in Corio, Belmont, Newcomb, Torquay and Anglesea. A full range of community health services are provided.

Barwon Health employs more than 5,200 staff in total, equating to about 3,200 EFT averaged over the year. In 2006/07, this included 280 EFT medical staff, 1,410 EFT nursing staff and 550 EFT allied health staff.

4.3.3 An overview of clinical education at Barwon Health

On the Barwon Health website[67], The Geelong Hospital is described as a "general medical and surgical teaching hospital affiliated with The University of Melbourne and Deakin University". Education features prominently on the health service's website and in publications such as annual reports. Indeed, the promotion of the *education, training and research* agenda of the organisation is one of the seven aspirations highlighted on page 1 of the *Barwon Health Annual Report 2006/07*[g].

Barwon Health is reasonably busy in its teaching role and the demand for its undergraduate clinical placements is high and cannot be fully accommodated. The health service currently facilitates clinical placements for approximately 1,500 undergraduate nursing students (Division 1 and 2), 180 undergraduate allied health students and 100 medical students each year. Barwon Health also supports post-graduate training, with more than 40 nurses enrolled in its GNP and nearly 100 junior doctors in its HMO programme.

Barwon Health has several organisational units responsible for clinical education and training. The Centre for Education and Practice Development (CEPD) was established in 2006 with the intention of providing "innovative and evidence based educational programmes and clinical tutorials" for Barwon Health staff, as well as supporting undergraduate and postgraduate educational programmes. Although the focus of the CEPD was originally on nurse education, this has now been expanded to include education and training for allied health professionals as well, and there has been a corresponding increase in emphasis on interprofessional education.

Medical education broadly falls under the remit of the Medical Education Unit (MEU), although the major focus of the MEU is graduate medical education and training. Barwon Health is also currently a partner in the St Vincent's/Geelong Clinical School of the University of Melbourne and this clinical school is primarily responsible for undergraduate medical education. The advent of the Deakin University Geelong Medical School will see new arrangements for oversighting the clinical education of medical students at Barwon Health.

4.3.4 Resources and Infrastructure

The Geelong Hospital is a well-established facility very close to the centre of Geelong. While some of the buildings were built in the 1960s and 1980s, there has been a significant redevelopment of the site over the last five years and a number of the buildings are very new. The MEU and HMO facilities are all housed in new buildings, although the CEPD is located across the street from the main hospital campus in one of the older buildings (Kitchener House).

Education and training activities at Barwon Health are best described as being *human resource intensive*, rather than *capital infrastructure intensive*. The Geelong Hospital does not have a simulation facility or clinical skills centre, although there are plans to develop a simulation facility. The hospital does have a very well appointed and well-resourced library located in one of the original hospital buildings. Seminar and tutorial rooms vary in their amenities and level of technological infrastructure.

4.3.5 Undergraduate clinical education

Barwon Health is involved in undergraduate clinical education across the full range of disciplines, including medicine, nursing, physiotherapy, OT, social work, speech pathology, podiatry, audiology, nutrition and dietetics, and psychology, as well as medical imaging and pharmacy. Depending on the discipline, students may be enrolled at University of Melbourne, Deakin University, Monash University, La Trobe University or Charles Sturt University. Small numbers of students are also hosted from the University of Sydney, Flinders University and the University of Western Australia.

---

[g] Aspiration 6: *Sound Knowledge Base - To develop a vibrant culture of education, training and research for all staff fostering clinical excellence, effective leadership and a solid foundation of continuous learning, quest for knowledge and scientific research underpinned by the role of Barwon Health as a teaching hospital.*

Medicine

At present, undergraduate medical students placed at The Geelong Hospital are students from the University of Melbourne's clinical school at St Vincent's Hospital. Primary responsibility for these students falls to clinical school staff based at Barwon Health, and they ensure the curriculum learning objectives are met and students are exposed to appropriate learning opportunities. Unfortunately, it was not possible to interview any of the clinical school staff for this case study, so the input on clinical education for undergraduate medical students came from the students themselves and various staff who contribute to the students' education. Of course, the clinical education arrangements for medical students will change in 2009, when Barwon Health takes the first cohort of medical students from the new Deakin University Medical School.

The medical students who were interviewed for this case study had been on their Barwon Health placement for five weeks and, because they had already spent time at St Vincent's Hospital, were able to place their Barwon Health experience in a broader context. The students were overwhelmingly positive about Barwon Health as a learning environment, indicating that all staff they had encountered (including consultants and registrars) were friendly and happy to teach the students. They also indicated positive interactions with other health professionals and that patients seemed happy to provide learning experiences for the students.

In comparing their Barwon Health experience to their St Vincent's experience, the students noted they had received more formal teaching at the latter, although they seemed unconcerned about this difference. Indeed, the students were very positive about the way they had been encouraged to undertake self-directed learning at Barwon Health.

If the amount of input relating to a particular issue is a guide to its relative importance, then the most significant aspect of the Barwon Health experience by far was how welcoming the hospital was to these students. They described the environment as "friendly" and "encouraging", indicated they were immediately made to feel like junior colleagues who were part of the team, and noted that senior staff made themselves *socially* as well as *professionally* available to the students.

The students noted they had received only a very brief orientation/induction to Barwon Health, and they commented they felt insufficient care had been taken in placing the students into groups (for example, in relation to the gender mix). On the other hand, they appreciated the resources available to students, particularly the library facilities.

Finally, when asked if they would like to return to Barwon Health as junior doctors, their only reservation was *geographical*, that is, they would happily return to the hospital if it were closer to Melbourne.

Staff involved in clinical education of medical students were positive about their teaching responsibilities, but noted they are not resourced properly for teaching and described their contribution to the process as "*pro bono*".

Nursing

In contrast to medicine, all of the information about undergraduate nursing clinical education at Barwon Health was provided by staff (clinical facilitators and clinical coordinators). They indicated that a new Deakin University-Barwon Health model for undergraduate clinical education was put in place about three years ago and this represented a very positive change for all concerned. The model is that each student works one-on-one with a preceptor on the ward; this is supervised by a clinical facilitator (one facilitator for 12 students) and overseen by a clinical coordinator (one coordinator for 40 students). Whereas previously the clinical teachers were external to the health service, in the new model the clinical facilitators are Barwon Health staff appointed to the role (with Deakin University paying the health service for their time). Most of the clinical facilitators job-share, allowing them to continue their own nursing practice. The major advantage of this model is that the clinical facilitators have in-depth knowledge of the wards and the hospital and are well known to other staff.

Another advantage of the new arrangements is that there is now much closer collaboration between the university and the health service. Clinical coordinators at the health service meet regularly (each month) with their counterparts at the university and the clinical facilitators have a weekly debrief with the university coordinators when the students are on placement. The greater cross-involvement between the training provider and the placement site actually starts before the students commence their placements, with the clinical facilitators going to the university to talk to the students about what is expected of them and to assist in their preparation. The clinical facilitators then meet the students when they first arrive at the health service and provide orientation to the ward and to the social aspects of the placement.

This account of the Deakin-Barwon model for nurse clinical education mirrored very closely the account provided by the Deakin University clinical education coordinators in the earlier interviews with university stakeholders, suggesting no major discrepancies in how the two parties see the arrangements. The clinical facilitators indicated they feel well supported, both by their peers within the health service and by the university through their weekly debriefing sessions. However, they noted that a student load of 12 (per facilitator) is too many and results in the facilitators doing work in their own time, particularly in relation to student assessment. It was also observed that preceptors are not particularly acknowledged for their teaching contribution and that more tangible benefits/support for their role should be considered.

It was clear that all staff interviewed for the case study were very positive about their role as clinical educators and about the educational culture at Barwon Health. They noted that a good educational culture has a great deal to do with the Nurse Unit Managers and that staff at Barwon Health have a strong desire to be seen as good teachers and educators. They felt the new model provided mechanisms to ensure clinical learning objectives were being met and indicated that Barwon Health had become more student-friendly, especially in the rostering of students.

Reflecting the positive view of staff about undergraduate student education, there is a return rate of 70-75% of Deakin graduates to Barwon Health and the GNP is about five-fold oversubscribed.

Allied Health

Over the course of the case study site visit, there were multiple opportunities to speak with clinical educators and students from across the spectrum of allied health disciplines at Barwon Health. Although the project focus was on five allied health disciplines (OT, physiotherapy, podiatry, social work and speech pathology), staff from other disciplines (audiology, pharmacy and radiography) were also happy to make themselves available and provide input.

From the first focus group with staff from several of the allied health disciplines, it was apparent there are significant differences between the disciplines in how they organise clinical education for undergraduate students. This variation was attributed to a combination of factors, including differences in the training requirements of the students, differences between the universities in their preferred *modus operandi* and historical differences between the allied health departments at Barwon Health. However, several staff observed that the departments are now trying to combine and share their approaches as much as possible, and this will be greatly facilitated by the expansion of the remit of the CEPD to include allied health.

In the case of physiotherapy at McKellar Centre, most aspects of student clinical placements are the responsibility of the *student coordinator*, a Grade 3 physiotherapist. The role, which is specified in the individual's position description and partly paid for by funding received from La Trobe University, includes coordinating placements for year 2, 3 and 4 students, matching students and supervisors for electives and serving as liaison between Barwon Health and the university. The student coordinator also plays a mentoring role for students and clinical education staff, as well as caring for a full patient load and supervising students directly. The La Trobe University students complete some of their clinical placements at South West Healthcare (Warrnambool Hospital) and this requires the student coordinator to liaise with the physiotherapy department representative. The majority of undergraduate physiotherapy

students at McKellar Centre are enrolled in the La Trobe University course, although small numbers of students from Monash, Melbourne and Charles Sturt Universities are also accommodated.

The physiotherapy department at Geelong Hospital has a clinical school arrangement with St Vincent's Hospital, as is the case in medicine. The majority of students at Geelong Hospital are from The University of Melbourne program. Student placements are co-ordinated by the St Vincent's Hospital Physiotherapy Manager in consultation with the Barwon Health Physiotherapy Manager. The Barwon Health Physiotherapy Manager then leads all aspects of the clinical placements at Geelong Hospital in partnership with the clinicians. A project is underway to develop a similar clinical education model at Geelong Hospital as the one at McKellar Centre.

The University of Melbourne, School of Physiotherapy does provide some funding to support student education. The funding has been used in a variety of ways to support clinical education and provide the required clinical education streams.

Physiotherapy staff indicated their department gives education a very high priority, but there is not much formal preparation for Grade 2 staff in how to teach students (this was equally true of most of the disciplines). Most staff draw on their own experiences to guide their practice as teachers and the structured curriculum for the undergraduate learners serves as a useful framework to guide the process. They noted that different universities operate different educational models and this does result in noticeable differences in how well prepared the students are for their placements. Regardless of the university's model, all students are assigned to two supervisors, which distributes the load between staff and provides backup and support. It was also noted that opportunities for clinicians to contribute to each university's curriculum vary between universities and staff greatly appreciate these opportunities.

Similar to physiotherapy, the senior Grade 3 occupational therapist at The Geelong Hospital has responsibility for student coordination, although unlike physiotherapy, the training providers do not financially support the role. Barwon Health takes students enrolled at Deakin, La Trobe and Charles Sturt Universities and while all three universities have liaison contacts and provide support, the preparation of the students varies considerably. Staff noted the relationship with Deakin University is now closer and much more structured than previously and that the supervisor training programme run by the university is an essential support mechanism for the Grade 2 staff (those with primary responsibility for student supervision). On the other hand, staff indicated they would like to be more involved in pre-placement clinical skill development for students at the university.

Undergraduate OT students were very positive about their experiences at Barwon Health, describing it as a very supportive learning environment where they feel welcome and part of the team. Interestingly, the students who participated in the focus group felt less supported by the university than the accounts by clinical staff and university coordinators suggested, but this did not bother the students, as they felt very supported by the health service. The students clearly recognised their supervisors had been taught how to teach and they also understood the hierarchy of learning, with each level of staff having their own learning needs and being supervised by the level above. Thus, from their observation of their Barwon Health role models, they appreciated that their learning as early-graduates would be a continuation of their undergraduate learning, the main difference being in the mind-set of the learner.

The OT students noted they had received a very thorough orientation to Barwon Health, which they appreciated, including meeting the senior clinician and touring the facilities. This was supplemented by further orientation within individual streams, where the students were introduced to the protocols and patient assessment tools and provided with more detailed operational information. The students were enthusiastic about Barwon Health resources in general and noted positively the extensive use of the intranet for accessing the shared resources. They also had a favourable view about the Barwon self-assessment tools and indicated they were encouraged to see self-assessment as being about self-improvement.

Despite indicating that staff at Barwon Health are generally very approachable, the undergraduate OT students indicated they found it very difficult to talk to the medical staff. This led them to conclude that interprofessional learning might be good in theory but didn't always work in practice. However, they did recognise that their own relative lack of confidence was an important contributing factor.

Finally, these students were very clear that most of their learning had occurred on their clinical placements, not in their theory sessions at university. They were also fairly certain they would not be *practice ready* when they completed their university course, despite having undertaken clinical placements they found entirely satisfactory. Furthermore, they expressed the view that the hallmark of a best practice clinical learning environment for undergraduates would be that the graduates would be more practice ready.

In the case of social work, once again, the senior clinician at Geelong Hospital and McKellar Centre has responsibility for coordinating the social work students at their respective site, although there is no dedicated staff time (in terms of EFT allocation) for student coordination and support. Students come to Barwon Health from a number of universities; the main source is Deakin University and the Chief Social Worker has put considerable effort into improving the relationship with Deakin over the last few years. Students are placed at both The Geelong Hospital and McKellar Centre and are supervised by experienced Social Workers, in line with AASW requirements that supervisors have a minimum of two year's professional experience. Barwon Health social workers also attend the two-day supervision programme developed by all Victorian universities, to enhance their supervision skills.

Staff who participated in the focus groups indicated that all of the universities do a reasonably good job of preparing students for placement – providing them with a detailed handbook – and support the students through a placement liaison officer who generally meets with each student twice while they are on placement. They also noted the interview with students once they have indicated their placement preference is a very important foundation for the relationship between the student and Barwon Health.

The podiatry department has established a centralised student coordination model, with the coordinator responsible for clinical placements across Barwon Health. There are no funds provided by the university for the role. It became clear in the discussion that the arrangement works primarily because the current coordinator is willing to take on the role and cares quite deeply about the education and wellbeing of the students. The role is not currently specified as part of the clinician's position description, but there are moves to change this situation.

Podiatry students placed at Barwon Health primarily come from La Trobe University (the only Victorian university that offers this course), although there are some students from Charles Sturt University and the department also hosts Deakin University medical students. There is a contact person at each university, but there is little or no input from the health service to the preparation of the students prior to placement.

As was the case for OT, it was possible to speak with both the student coordinator and an undergraduate student for speech pathology in the course of the case study site visit. The coordinator is the only point of contact for speech pathology at Barwon Health in relation to student supervision and is responsible both for coordinating all placements and for arranging student accommodation. The coordinator also provides direct liaison to the university, which includes providing input to course structure and content. Students enrolled in the Charles Sturt University course account for the majority of the placements, with students from La Trobe and other universities able to access any remaining places. Charles Sturt University does provide some funding for the Grade 3 student coordinator position.

It was apparent that the speech pathology department places a high priority on education, not only for undergraduate students, but for staff as well. The department strongly promotes ongoing clinical education and up-skilling for all staff and proactively arranges professional development opportunities. Furthermore, all speech pathology clinicians interested in teaching students have some training to be educators, primarily undertaken through the Barwon Health

Clinical Supervision programme. They see the value in this training in three domains. Firstly, it increases the capacity of the department for clinical placements (since more of the staff are competent to teach). Secondly, the training improves the standard of education that is delivered. Thirdly, the commitment of clinical staff demonstrated through this educational up-skilling enhances the partnership between the health service and the university.

While the culture at Barwon Health is one that generally embraces students, the speech pathology department goes a step further and enthusiastically points to the benefits of taking students. Their view is that it is actually possible to increase overall productivity in the presence of students by the use of more creative and innovative supervision arrangements. One such arrangement is the particular model of paired supervision they employ. In this model, pairs of students are supervised by pairs of supervisors that team up a more experienced educator with a less experienced educator. This provides back up and support for each educator, but also allows the less experienced educator to increase his or her skills and experience in a more structured way. The coordinator also takes considerable care over the matching of students and supervisors to ensure the experience is of maximum mutual benefit. The department is also actively engaged in research into clinical education in speech pathology, providing added impetus for developing and implementing innovative approaches to their educational activities.

The enthusiasm of the student coordinator was mirrored in the enthusiasm of the student who participated in an interview for this case study. All aspects of the placement at Barwon Health were referred to in very positive terms. This included the orientation and other aspects of the welcome, the "very good" educational culture of Barwon Health with its emphasis on evidence-based practice, the "confident, experienced and well prepared" educators, the caseload and range of clinical experiences, the excellent library and library support services, and the ongoing support provided by the university. Importantly, the student indicated the Barwon Health clinicians had served as excellent role models.

As indicated earlier, in addition to the five allied health disciplines that are the focus of this project, input was received from Barwon Health staff in audiology, pharmacy and radiography. These staff echoed many of the points made by the other disciplines, but also pointed to the importance of the role of the university (and other training providers) in creating positive learning environments for undergraduate students. Training providers obviously need to adequately prepare the students and provide information to the placement site about the students and provide ongoing support. Beyond this however, the university must also ensure there is good integration of pre-clinical and clinical components of the curriculum, to allow the students to derive maximum benefit from the clinical experience. This includes keeping the clinicians informed about where the students are in their studies, as well as providing clarity about the learning objectives.

The audiologist who was interviewed suggested that health services should be provided with access to the electronic teaching and learning resources of the universities and noted that clinicians appreciate being involved in curriculum development and review processes. It was noted that some of the universities have done a particularly good job of working with clinical environments, for example, by developing flexible, adaptable models that allow placements to be designed in consultation with each clinical site, resulting in a placement that reflects what each site is able to individually provide. These comments were mirrored by the pharmacist and the radiographer interviewed for the case study.

The radiographer reiterated the point made by the speech pathology student coordinator to the effect that the quality of a clinician's work may actually improve as a result of teaching students. The clinician may have to work a bit slower while they are teaching, but they tend to be more careful because they are conscious of providing a good role model and carrying out a procedure precisely according to the protocol.

4.3.6 Early-graduate clinical education

The Directors of Education interviewed for the case study agreed that Barwon Health has an excellent educational culture and progressive attitude towards professional development, which, together with its size and case load mix, make Barwon Health a desirable destination for early-graduate health professionals. Indeed, Barwon Health tends to be significantly over-subscribed (five- or six-fold) for its structured graduate programmes (medical interns and GNP), reflecting its growing reputation as an early-graduate educational environment. A sizeable proportion of the applicants are students who undertook one or more clinical placements at the health service.

Medicine

Staff from the HMO Support Unit indicated the process of creating a positive learning environment for junior doctors commences with the interviews of intern applicants. This is very important for ensuring the "right people" come to Barwon Health for their pre-vocational medical training and also provides a mechanism to ensure the applicants' expectations match the reality of what Barwon Health can offer. One of the questions applicants are asked is why they wish to come to Barwon Health. Understanding this helps to create a happy workforce and allows the health service to provide a training programme for the junior doctors that meets their needs.

The recently developed recruitment protocol is that once interns are appointed, the HMO Manager remains in contact with them for the remainder of the year, serving as a referee for accommodation, providing monthly updates on activities at Barwon Health and facilitating contact between the new intern recruits. Induction is a four-day activity, including didactic sessions, review of basic clinical and pharmacy skills, *shadowing* one of the out-going interns, as well as social activities.

The role of the HMO Manager involves HR functions, educational operations and coordination (including rotation planning) and remedial programmes for HMOs who are having difficulties. The position is supported by a Medical Education Officer, who has regular direct contact with the junior doctors, supporting their educational programme and providing them with a source of information relevant to their hospital placement. The policy of Barwon Health is to provide *hierarchical* information to the junior doctors; that is, providing them with basic information from the outset, and then a continual flow of additional information as it becomes relevant. In this way, the HMOs are not overloaded with too much information at the start. One of the innovative ideas Barwon Health is about to implement is to provide the Medical Officer Handbook on a USB key that can be worn on a lanyard with the staff ID card. The document is also available online, but by providing the information in this format, the HMOs have access to the document wherever they happen to be, without having to carry a bulky printed document around with them at all times, or requiring access to the hospital intranet.

Barwon Health has a structured programme for interns and HMO2 staff, which HMO3 staff and vocational trainees are also welcome to attend. The programme is overseen by the Postgraduate Medical Education Committee which is the Board of Graduate Studies. The board includes senior clinicians, the Chief Librarian and representatives from the MEU and, as well as planning the HMO educational programme, is responsible for planning Grand Rounds.

The HMO educational programme incorporates two tutorials each week. The Monday tutorial is usually a didactic presentation and the topics are mostly basic sciences with a clinical emphasis. The Wednesday tutorial is a case presentation by one of the interns, who chooses the topic in consultation with senior medical staff (registrar or consultant). The senior clinician usually attends the session and there is an opportunity to debrief the intern after their presentation. This debrief is considered an important aspect of the learning exercise and all interns are rostered for at least one presentation during the year. The education coordinators believe the Wednesday tutorial sessions are a distinctive feature of the hospital's HMO training programme and interns agreed this is one of the best aspects of their programme.

Another aspect of the junior doctor training programme identified as being unique to Barwon Health is that Advanced/Basic Life Support (ALS/BLS) training is mandatory for all junior doctors. Apart from ensuring junior doctors have these skills, the education coordinators indicated this training helps to develop the overall confidence of the junior clinicians to be able to handle situations on their own.

Of course, the majority of learning for junior doctors occurs on the wards. Barwon Health has picked up a University of Western Australia programme called "Teaching on the Run", which comprises *micro teaching sessions* (about five minutes). Barwon Health runs training sessions to teach clinicians how to make better use of these informal teaching opportunities. For many clinicians this is their only formal training in how to be educators. The interns who were interviewed for the case study indicated they generally receive good support on the wards and have opportunities to talk to – and learn from – the consultants, although this is quite variable between wards. However, they also expressed a desire for more spontaneous teaching on wards than currently occurs.

One very interesting clinical learning opportunity observed during the site visit was a Clinico-Pathological Conference (CPC) session. These sessions are run every month and are attended by all levels of medical staff and learners (when they are available). Each CPC session presents a case, usually one where the outcome has not been favourable. After the formal presentation, which includes background on the basic science and clinical features relevant to the case as well as the patient's history, the session is opened for discussion by clinicians from across the hospital. The discussion is wide-ranging, examining what was done well, what might have been done better, alternative approaches to diagnosis and treatment and learnings for the future. This was an example of a "no blame" culture at work and it was a remarkable display of inter-disciplinary, cooperative learning that would have provided an ideal model of professional behaviour for any learners in the room.

The clinical education coordinators who participated in the interviews and group discussions were all very clear about the importance of ongoing education and professional development, not just for junior doctors, but for all staff. They see education as the key to workforce stability as well as sustainability and development. However, they noted that education of junior doctors is done with a minimum of resources and "a lot of good will". Furthermore, they acknowledged that clinical education of medical students often gets prioritised ahead of junior doctor training, mainly because the latter does not have the same degree of structure or compulsory assessment. This differential attention is not lost on the interns, who were concerned their learning needs were usually set aside to accommodate the learning needs of medical students. One intern put it quite bluntly: "The hospital needs to remember that learning is a right – not a privilege – for junior doctors".

The interns felt that where their training programme needed to be improved, most of the improvements could be done through *structure*. For example, structured (and protected) time each week with consultants or registrars, structured (compulsory) feedback to junior doctors and structured opportunities for inter-disciplinary links.

Nevertheless, they were positive about Barwon Health as a place to be a junior doctor. They indicated it is a safe environment in which to ask questions and has an organisational culture of active learning. Barwon Health, with its catchment demography and size, offers a good range of cases for learners and there are opportunities to rotate to smaller regional hospitals. They also noted there is a knowledge gap – but not a social gap – between the consultants and the HMOs, which helps the junior doctors to integrate into the Barwon Health community. Reflecting this generally positive view of interns, more than 70% of interns return to Barwon Health as HMO2s.

Nursing

Barwon Health has no difficulty filling its GNP, which is five-fold over-subscribed each year. As discussed earlier, about 75% of Deakin nursing graduates return to Barwon Health for their graduate year. Nevertheless, the GNP commences with a one-week orientation that provides an induction into the GNP, a clinical skills review/update and two days on the wards. The GNP

comprises three 16-week rotations, covering medical, surgical and one elective. Every effort is made to ensure graduate nurses get their first or second choice elective; they receive their year's programme at the start of the year and have opportunities to change their elective preference.

The GNP Coordinator noted the most difficult thing for graduates is making the transition from being a student ("nothing can prepare you") and most graduate nurses are not really prepared for practice. The graduate nurses are supported by Clinical Support (CS) nurses, which are analogous to the clinical facilitators for undergraduate students. The CS moves around the ward, checking in with each graduate nurse throughout the shift. Their role encompasses pastoral support as well as skills and knowledge support, spending as much time with each graduate nurse as they need at that particular moment (usually up to half an hour, sometimes longer). For nurses who are really struggling, the CS may work quite intensively with the individual over many days or weeks, to get them back on track. Examples were cited where this intervention made a major difference, helping nurses on the verge of dropping out to develop confidence, a sense of purpose and a desire to remain in their profession.

One of the most challenging aspects of the job for the new graduates is that they are immediately given a full patient load to handle on their own. Most staff who participated in the discussion agreed it would be better if the new graduates started with 75% patient load and worked up to a full load, but acknowledged this is a funding issue and is unlikely to change.

As well as taking a very pastoral approach to supporting graduate nurses, which includes weekly debriefings, Barwon Health surveys its graduate nurses on their wellbeing and professional needs. There is also limited financial support to assist nurses with ongoing professional development beyond their graduate year. The hospital does encourage its nurses to continue their training and offers a small number of specialist places at Barwon Health each year to nurses who have completed their GNP.

However, nurses unable to obtain a specialist place tend to "slip under the radar" somewhat in relation to their ongoing professional development. It was acknowledged that nurses tend to access ward-based education the most, but the amount of structured ward-based education varies considerably between wards. Furthermore, there is not very good support for learners out of hours. There was general agreement that these issues need to be addressed to ensure all nursing staff have access to informal training and professional development opportunities.

Allied Health

Unlike medicine and nursing, there is no formal graduate training programme for allied health professionals. Nevertheless, professional development and lifelong learning are understood by all Barwon Health allied health departments to be the cornerstones of a sustainable workforce providing quality clinical care. Indeed, one group of allied health staff went as far as to say: "Learning is what makes a [clinical] environment worth being in, so if there is lack of depth in the educational culture, this will be reflected in recruitment and retention of staff."

Despite this understanding, allied health disciplines at Barwon Health generally struggle to deliver the ideal learning environment for early-graduate staff, mainly due to resourcing. Most disciplines noted that student education is catered for at the expense of the early-graduates. "Assessment is a big driver of priority", as one physiotherapist noted. Several Grade 1 allied health staff described themselves as the "forgotten group", ignored educationally and asked to take on bigger patient loads, particularly when there are students on placement that are taking up the time of the Grade 2 staff.

These issues notwithstanding, there were a number of positive comments in relation to early-graduate education at Barwon Health. For example, OT early-graduates indicated they have been well supported and well supervised at Barwon Health. The Grade 1 staff have learning contracts that identify their professional development opportunities and supervision needs. They are encouraged to undertake ongoing education, particularly across speciality boundaries. They also indicated they receive informal feedback on their development at the end of their rotations, but expressed a desire for more formal feedback.

The physiotherapy early-graduate staff noted their professional development is less formally structured than in OT and they don't make use of learning contracts. They noted Barwon Health offers an excellent range of learning opportunities, with rotations between the hospital and the sub-acute centre. However, they expressed concern that the pathway beyond Grade 1 is not well-articulated.

Interestingly, senior physiotherapy staff expressed the view that the department places a very high priority on staff professional development and some managers are quite proactive in encouraging staff to pursue their own educational needs. "Urgent patient needs will always be our number one priority. But if one hour isn't going to make a difference to a patient's care, then the patient is ultimately better served by their physiotherapist attending a seminar or other educational activity for that hour."

Other allied health departments have their own mechanisms for dealing with these issues. Speech pathology, a much smaller department, runs its own in-house evidence-based practice/ quality improvement sessions every month to ensure there are internal mechanisms for improving practice and sharing information on current trends in clinical practice. The radiography department uses its rostering system to avoid early-graduates being overlooked in favour of undergraduate students. They also encourage all staff to take up professional development opportunities relevant to their level. These include Graduate Certificate and Graduate Diploma courses, various specialist qualifications and professional development programmes run weekly by their national association.

4.3.7 Summary

The Barwon Health case study provided an opportunity to observe how clinical education of undergraduate and early-graduate learners is handled in the largest regional health service in the state. Key impressions from the site visit include:

- Barwon Health has an organisational culture that values education. This is appreciated across the organisation and provides the foundation on which education policy and practices are based.
- A welcoming and supportive environment – that is well prepared for the arrival of learners – is very important to learners at all levels.
- Learners appreciate the breadth of learning opportunities available to them at Barwon Health.
- Learners appreciate physical resources that are provided for their use, but they place much greater emphasis on structured learning opportunities, as these help to ensure education (particularly for early-graduates) remains a high priority.
- Entities such as CEPD and MEU are very important educational resources for the organisation; these units drive inter-professional education and facilitate sharing of ideas and resources between disciplines.
- Innovative approaches to sharing supervision load have benefits for staff as well as learners.
- Learners whose expectations are being met and whose professional development needs are identified and addressed contribute to a happy workforce.
- Enabling the transition from student to registered practitioner is the key role of early-graduate education. Providing good professional role models for learners is an important part of this process.
- Effective communication is central to achieving all educational objectives. This includes communication with training providers, communication between management and clinical areas, communication between disciplines, provision of information to learners (through adequate orientation and induction processes) and readily available resources, policies and protocols.
- Staff perceive that a significant amount of clinical education is done on a *pro bono* basis, that is, clinical staff consider these activities are undertaken on their own time and on top of a full clinical workload.

4.4 Latrobe Regional Hospital Case Study

4.4.1 Introduction

The Latrobe Regional Hospital (LRH) site visit was conducted over the period 1-5 October 2008. The week's activities were coordinated through the Staff Development Unit (SDU), responsible for the majority of nurse in-service training. Over the course of the week, over 20 interviews or group discussions were conducted, in addition to several facility tours and activity observations. Interviews or group discussions were held with senior managers and HR staff, education coordinators, educators and learners.

4.4.2 LRH at a glance

Located 140 km from the Melbourne CBD, LRH is part of the Gippsland Health Alliance. It is the major hospital for the Gippsland region servicing a population catchment of over 240,000 residents. LRH is a 257-bed hospital providing services such as aged care, cancer care, elective surgery, maternity, mental health care (including eight Community Mental Health Centres), pharmacy and rehabilitation. The hospital also coordinates in-home services, particularly for rehabilitation from mental illness and disability.

According to the 2007 LRH annual report, the hospital employed over 1,500 staff equating to over 980 EFT. Of those, approximately 154 EFT were ancillary or medical support, 73 EFT were medical and 516 EFT were nursing staff. During the same period, the hospital had over 26,000 separations.

4.4.3 An overview of clinical education at LRH

Prior to undertaking the site visit, a brief review of the LRH website was undertaken. As expected, their *vision* and *strategic direction* both have a strong focus on patient care and health outcomes. However, there is limited reference to education or promotion of learning. Review of the LRH 2007 annual report revealed teaching and research are considered key elements of the strategic goal to *deliver quality, accessible and coordinated health care*. In particular, there is a focus on monitoring and tracking educational activities and quality assurance/improvement processes.

Despite the lack of specific reference to learning in the strategic documents, staff described the culture of learning within LRH as positive. The positive attitude towards learning is reinforced by the presence of many policies that aim to encourage further education amongst staff. Despite the positivity, staff had some trepidation in making that assessment. Many attributed their concerns to recent resignations of senior LRH staff and their replacements being *unknown quantities*. Thus the presence of positive education and training policies and procedures is not sufficient to set a positive culture of learning in the absence of direction from senior staff.

Despite their nursing focus, the SDU also helps set the positive culture of learning across all disciplines within LRH. It should be noted that staff members within the SDU have recognised the need for the SDU to take on a broader education role (i.e. beyond nurse education). However, they were finding it difficult to appeal to all disciplines. Some difficulties related to culture of individual disciplines, whereas other difficulties specifically related to content.

Culture difficulties included practitioners' willingness to be taught by practitioners of other disciplines, not convinced they could learn much from them. Content wise, potential learners assumed multidisciplinary programmes would have limited relevance to them. Those who did attend multidisciplinary programmes provided mixed reports on their relevance. Thus, learners who felt these programmes would be of limited value had their beliefs reinforced, and those who were uncertain remained so.

In relation to clinical education, in 2008 LRH:

- Trained 61 medical students in year three (16), four (26) and five (29) and a further 10 from overseas (in years three (4), four (3) and five (3)).
- Trained nine interns.
- Provided 241 individual clinical placements for nursing students (not including psychiatric nursing), from seven different training organisations.
- In 2006, offered 29 graduate nursing positions, of which 27 were successfully completed and 25 returned to work at LRH in 2007.
- Held 652 nursing staff development courses resulting in 6871 staff attendances.
- Provided placement hours for over 55 allied health students, covering the disciplines of OT (18), physiotherapy (25), social work (4), speech pathology (4), prosthetics/orthotics (1), and dietetics (5) across eight training organisations including five Victorian universities.

4.4.4 Resources and Infrastructure

The major resource for education and training at LRH is the SDU. The SDU is staffed by nurses of varying level, expertise and experience. The vast majority of nurse education (and therefore health professional education) is conducted or coordinated through the SDU. Although the SDU has existed for many years, it has changed its model in the past few years. Previously, nurse educators were located on wards and were seconded to teach. In the current model, educators are members of the SDU and are allocated to wards. This has created a greater continuity of education and improved service provision.

As part of their role, the SDU maintain regular (monthly) contact with the training organisations placing students at LRH. This regular communication ensures training organisations are aware of the LRH point of contact and encourages discussions of clinical placements before they become problems.

Another resource, largely untapped to date, is Monash University, particularly the School of Rural Health (SRH) and the Gippsland Medical School (GMS). Both schools have facilities at the LRH site as well as the nearby Monash University Gippsland campus at Churchill. Recently, the Gippsland campus has received major infrastructure funding to establish the GMS, including. simulation facilities. Although available for use by LRH, the GMS facilities have not been used beyond limited training for international medical graduates (IMGs). The GMS and SRH also represent a resource for development of teaching skills amongst LRH staff. Similarly to the simulation facilities, this resource has only been used sparingly by LRH.

LRH has some simulation resources of its own. In particular they are able to simulate births and this resource is often used in a multidisciplinary fashion to train obstetricians and midwives.

Tutorial rooms adjoin many of the wards within LRH. These rooms also serve as nurse debriefing areas and are most frequently used by nurses, although not specifically allocated for nurse education. Unfortunately, demands for space have increased in recent times, and many of these rooms have been converted to office space increasing demand on the remaining educational spaces.

Learners and educators of every discipline interviewed were complementary of the LRH library. Most felt it was a product of the service offered by the librarian rather than the specific books or journals available through the library. However, several interviewees noted the librarian often came to them for advice on the best book or journal for their field/discipline with the aim of obtaining a copy or subscription for the library. Of particular interest, one interviewee attributed the success of the library and librarian to how well Monash University and LRH had worked together, stating "this is a classic example of how the whole is greater than the sum of the parts". Due to its success, many suggested the collaborative effort used to establish and maintain the library should be studied and applied to other infrastructure or resources of mutual benefit to the hospital and university. Examples cited included learning spaces, educator training and simulation facilities.

One element of education-related infrastructure that is of more importance at LRH than at metropolitan hospitals/health services is student accommodation. In general, medical students appear well catered for with on-site accommodation meeting most students' needs. However, accommodation was clearly more of a concern for non-medical students, particularly for those undertaking short placements.

For the most part, Monash University students are able to find accommodation because of the links with the university campus and also the medical student accommodation. However, students from other universities have considerable difficulty, although they noted the problem is not unique to LRH, as the same problem exists at other rural locations. Some disciplines developed creative solutions to the problem, such as creating a register of hospital staff willing to provide student accommodation or negotiating with the local caravan park. However, both approaches were deemed inappropriate due to liability issues. Thus, formal/structured efforts aimed at assisting students find accommodation have been abandoned.

The most common solution to this problem has been to carefully select students for rural rotations. Thus, students from the Gippsland region are given preference for clinical placements at LRH. Obviously this has reduced the need for temporary accommodation, but there have also been flow-on effects. The hospital benefits as they are training a greater number of people likely to be their future workforce. The students benefit as they do not have the problems associated with commuting to (or from) the city.

4.4.5 Undergraduate clinical education

LRH provides clinical placements for a broad range of undergraduate courses. Regardless of their discipline or formal orientation process, there is a strong feeling of belonging amongst LRH students. Across the board, it appears the opinions of students are valued, as is the experience of being an educator. Furthermore, LRH educators and staff in general acknowledge undergraduate clinical placements are an excellent opportunity to recruit the future workforce by creating lasting positive impressions.

Medicine

Almost all of the medical students trained at LRH come from Monash University. With the establishment of the GMS, there will be a shift from school-leaver medical education to graduate-entry medical education.

Due to the small size of LRH, teaching of the medical course requires inventive solutions to problems. One such problem is the availability of suitably qualified doctors to teach all aspects of the medical course. This has resulted in members of other disciplines (most notably pharmacists, but also nurses and other allied health professionals), teaching relevant aspects of the medical course. Although not necessarily innovative, it was reported as an example of interdisciplinary education that does not occur in many other hospitals and therefore a distinctive feature of LRH.

The medical students felt there is good culture of learning at LRH. Furthermore, they also felt assisted and welcomed by practitioners from other disciplines, particularly nurses. However, they indicated learning at LRH was too self-directed, lacking structure around learning goals. They also indicated they would like more feedback and sooner (particularly in relation to practice exams), so they are able to more adequately identify and address their deficiencies.

On the other hand, medical students said one of the positives of studying at LRH is the ability to easily move between wards. This is particularly attractive when *good patients* are located on wards the students are not specifically assigned to. Recognising this is good for learners, but bad for patients if excessive, guidelines have been created that limit the students to working in pairs, thus preventing particular patients being overloaded with students. It should be noted that students defined a *good patient* as someone with symptoms or medical characteristics of interest and open to regular student assessment (i.e. the students recognised the importance of patient consent).

Nursing

Although other universities and TAFEs also place their students at LRH (particularly for Division 2 training nurses), LRH undergraduate (Division 1 trainee) nurse placements are primarily offered through Monash University. This exclusive arrangement is a recent development, driven by a new programme called Latrobe and Monash Partnership (LAMP). Monash has established similar arrangements at health services across Melbourne, including Peninsula Health.

LAMP focuses on consistency of placements and educators. Students are paired with a preceptor for their entire time at LRH and are expected to attend all shifts that particular nurse does (including night and weekend work). LAMP students report keeping the same preceptor ensures their learning is built on during each shift, rather than explaining to the day's preceptor what they know and what they need to do.

Prior to embarking on the LAMP programme, Monash University asked LRH to nominate the maximum number of students they could take at any one time. LRH considered its relationship with other universities and decided it would be better to have more placements with one organisation than to take students from multiple training organisations. The approach Monash University was taking in establishing LAMP gave LRH education coordinators confidence to increase the number of students they were willing to take. The result was a greater number of students trained at LRH through Monash University and a greater number of students trained at LRH overall. This initially caused some concern for LRH and Monash University staff as they felt there could be a reduction in the staff or student experience or the educational outcome. Monash University and LRH surveys have since indicated student experience has not been negatively affected. This was also confirmed during several nursing student focus groups.

One of the features of LAMP is a reduction in the number of LRH orientation events, as students are not orientated to the hospital on their second and subsequent visits. Thus, there is an increase in the number of productive hours a student is on placement.

The LAMP programme is coordinated through the SDU by an LRH staff member funded by Monash University. This appointment is very effective, as both the hospital and the university are aware of who is responsible for the students and coordinating their placements. From an educational point of view, this person is useful for preceptors (e.g. providing advice on student assessment) and also students (e.g. ensuring learning objectives are met).

As indicated above, the LAMP programme has increased the number of training nurses undertaking clinical placements at LRH. This has increased the need for nurses to become qualified educators (preceptors), thus a large proportion of the nursing workforce at LRH have attended a preceptorship course. This has had flow-on benefits, as the nurses are all now better equipped to learn from and teach others.

The implementation of the LAMP programme is one innovation at LRH; another is the creation of the Fellowship Programme. Although not directly aimed at improving education or educational outcomes, it does have flow-on effects that facilitate learning.

The Fellowship Programme involves taking on Division 1 student nurses in paid positions within LRH for 18 months. Fellowship Students commence their role in the second semester of year two and provide support for the Division 1 and Division 2 nursing staff. The programme was established in response to many graduates not being as job ready as LRH would have hoped and it was felt that 18 months of paid work experience would dramatically improve their employability. There were also added benefits. Many students were known to have part-time jobs in the hospitality or retail industry; while these jobs provided income, they did not provide relevant vocational experience. Thus LRH were able to also provide local employment for students on placement. The Fellowship Programme has been successfully implemented for a number of years, but, due to changes to the nurse nurse/patient allocation in the 2007-2001 EBA, it will not be continued beyond 2008 – and staff were sorry to learn that. From 2009 it will be possible for students who have completed the second year of a Bachelor of Nursing course to apply for registration in Division 2[68] and LRH will encourage their Bachelor of

Nursing students to do so. Of course, all Fellowship Students who began their fellowship in semester two of 2008 will complete the programme in 2009 as intended.

Allied Health

Within LRH, allied health staff and students are all located in the one area. They are a very close-knit group, often spending time together outside work hours. Students reported they felt welcomed by allied health and non-allied health staff. New students are introduced to all of the allied health staff, provided with an orientation to various wards and the allied health treatment area and morning tea is put on for them on their first day. It was clear the staff felt the students were of value (as students or future employees), as many students reported they were asked to come back (for future rotations and/or employment).

Over the last few years, staff numbers in LRH allied health have been growing. At the same time each discipline has been encouraged to take more students. The result is a slightly crowded physical space, and the students noted this. Although they acknowledged their close proximity to staff contributed to a feeling of being welcomed and included, the students also felt some dedicated student space and equipment (particularly computers) would be useful to their learning.

Similarly to nursing and medicine, on-site student accommodation is a major concern. Unlike nursing and medicine, allied health education is provided by many universities, including Monash University. As much of the accommodation infrastructure is prioritised for Monash University students, it is rare (if at all) for non-Monash students to use the accommodation. Furthermore, the cost is greater for non-Monash students. Although there are many factors contributing to this situation, the students are often unaware of them and from their point of view, they feel the health service has favourites.

From a learning perspective, allied health students enjoy LRH very much. Supervisors are qualified to teach, they encourage students to learn and provide students with plenty of opportunities for independent (supervised) practice. Although students do not participate in LAMP or a similar programme, they liked the idea. They also liked the idea of the Fellowship Programme offered to nurses and would like to see something similar developed for allied health.

However, there were areas students felt needed to be improved, such as allocating time for regular discussion of the week's events, including regular review and updating of the student learning plan.

4.4.6 Early-graduate clinical education

As is the case for undergraduate learners, early-graduate learners are encouraged and made part of the team at LRH. Programmes exist for medical and nursing early-graduates but not for allied health. However, compared to undergraduate education, the activities are less formal. In some instances this was a concern for early-graduates, in others not. Interestingly, educational staff indicated a desire for more formal learning programmes. Formality, for the most part, was defined as *accurately noting learning needs and recording progress against those needs*. In some cases it also included the creation of regular educational events, such as seminars (multidisciplinary where appropriate) to share knowledge amongst the health practitioners of LRH.

Medicine

As mentioned above, the documentation of learning needs (and tracking progress against them) is generally not well done at the early-graduate level at LRH, but the hospital is in the process of addressing this issue for interns. An internet-based programme (originally developed for General Practitioners) is being implemented that allows learners to document their learning needs and supervisors to add, track and mark off progress against agreed objectives.

LRH has a high proportion of IMGs. These graduates need specific and different training to Australian medical graduates, and LRH has acknowledged this with an IMG-specific intern programme. This programme focuses on activities such as communication and cultural understanding. Part of this programme makes use of the simulation facilities at the Monash University GMS. Although time did not permit talking to any interns, intern educators reported IMGs enjoy these sessions and ward staff have noticed an improvement in IMG confidence and patient diagnosis and treatment.

The educational facilities provided on-site by the Monash University SRH are also well used by the intern educators. Regular seminars (weekly) are held in these areas. A common comment from medical educators was that these sessions are intermittently attended. Although surveys have not been conducted to determine the exact reasons why, educators reported interns often have to leave because their beeper goes off, or they prioritise administrative activities over attending the seminar. Protected time for education (to teach others and to learn) was viewed as a solution to this problem; however staffing levels (and staff recruitment) were identified as barriers to this.

Another aspect of intermittent attendance included showing up late to seminars. This has been solved by the provision of lunch (sandwiches) as part of the seminar. It was noted that the provision of lunch may have reduced tardiness by either reducing the number of people spending time obtaining their own lunch, or increasing the number of interns who attend to get a free lunch.

Nursing

The GNP at LRH is well-liked by nurses. The programme consists of ten full days of study held throughout the year (i.e. not consecutive). All graduate nurses are expected to attend and each day is devoted to a different topic. The programme is coordinated by the SDU and they also do a lot of the teaching. As required, experts outside the field of nursing are included as *guest* educators (e.g. a pharmacist provides information on patient medications). Depending on the educator's preferences, the session may run differently (e.g. lectures, versus small group learning, versus interactive workshops).

The programme has tended to run over consecutive months from February to November. Based on feedback from ward staff (where the early-graduates are placed) and the early-graduates themselves, the programme may be restructured to a series of days at the start and end of the year. Education days early in the year will focus on topics learners are likely to encounter when they start working, whereas education days later in the year will focus on less common topics.

Although not exclusively for early-graduates, LRH also offers a Career Development Programme (CDP) that is aimed at nurses in their first few years post-graduation. The CDP is a twelve month programme. For the first six months participants are placed in a *specialist* area/ward such as theatre or intensive care. For the second six months the nurse is placed in a related medical/surgical ward. The CDP also includes the provision of additional study days.

The CDP aims to increase nurses' awareness of other wards and broaden and improve their skills. Senior LRH staff like the programme because they have a better trained workforce and knowledge is better shared between wards. The experience nurses gain also provides them with further employment opportunities and increases the nurses available to work on various wards. The programme is also viewed as a stepping stone for further postgraduate studies (such as a Masters).

Another innovation aimed at nurse education is the creation of the *clinical coach*, whose role is to "educate, guide and support staff to achieve best clinical practice and patient care outcomes"[h]. This role was established by the operating theatre, in response to the need for advanced preceptorship. The position is considered supernumerary, although the person in this

[h] LRH Clinical Coach position description

position has the appropriate skills and experience to work in the operating theatre and thus may do so. Although similar to a clinical educator, the intent is that this person is available all of the time, and will have a roster that coincides with learners or new staff. The position also has a role in maintaining and managing processes and procedures including quality assurance and quality improvement. The clinical coach is expected to have a close working relationship with the nurse unit manager as well as the clinical educator.

The creation of this position has been a positive step for the operating theatre. Theatre staff report an increase in confidence and a continuity of practice development previously absent. This has resulted in reduced stress levels and a reduction in (previously high) staff turnover.

Allied Health

Similarly to other health services, LRH does not have a specific programme or position for early-graduate allied health professionals. Instead, they are employed as Grade 1 practitioners.

Within their own area, allied health staff have created a buddy system. This arrangement pairs undergraduate students with early-graduates and early-graduates with more senior staff. Early-graduates (and undergraduates) indicated this system has contributed to the strong social connection within allied health.

At the time of the site visit, further education for allied health staff (including early-graduates) was an issue. Several staff indicated they would like to attend conferences but felt their attendance was not being assisted by LRH for two reasons. The first was funding. Staff felt LRH should help pay for attendance/accommodation at the conference. The second was leave. Staff reported that study leave needed to be approved by senior management, despite annual leave being approved by the unit/division manager. Furthermore, applications for funding or leave to attend a conference were often taking quite long. In some cases a response was not received until after the conference start date.

Some allied health disciplines at LRH reported different experiences in relation to conference funding and these differences reflected professional attitudes and practices. For example, the Pharmacy Board of Victoria (responsible for the practice and administration of pharmacists) sets minimum standards for continuing professional education (CPE). As such, pharmacists recognise the benefits (and therefore the importance) of funding their own CPE.

Although pharmacy was not directly part of this project, there was other input from pharmacists at LRH relevant to this study, particularly in relation to organisation around student placements. Prior to learner arrival at the hospital, the pharmacy department has a plan indicating where the learner will be for the entire clinical placement. This allows pharmacists to share the learners and at the same time not be overburdened by them. The pharmacists also have regular (weekly) education meetings where learner progress (in the presence and absence of learners) is discussed.

4.4.7 Summary

The LRH case study provided an opportunity to understand how clinical education of undergraduate and early-graduate learners is handled in a hospital serving a regional centre with a dispersed catchment area. Key impressions from the site visit include:

- LRH has a positive learning culture that has been present for an extended period of time. This culture has been supported by appropriate policies and procedures; however, the recent turnover amongst several senior managers has demonstrated the importance of senior management in maintaining the educational culture of the organisation.
- All staff (including non-clinical staff) provide learners with a positive and welcoming environment that extends beyond LRH and includes social activities.
- Viewing students as potential future workforce has contributed to providing a better learning experience for students.

- LRH has encountered difficulties expected of a regional hospital, particularly relating to student accommodation. Although unique strategies have been attempted, success has been limited.
- Lack of protected time for teaching and professional development is a serious issue.
- The SDU is an important educational resource for the organisation.
- Undergraduate nurse education via the LAMP programme is very successful, as is the Career Development Programme. Elements of LAMP could be implemented for other disciplines.
- The nurse Fellowship Programme was so successful staff are sorry to hear it will not be offered in 2009, despite the existence of an alternate (and similar) process.
- A common theme across all disciplines and learner levels was the need to better document and track learning needs and learner progression.
- The Monash University Gippsland campus is a relatively underutilised resource.

4.5 Peninsula Health Case Study

4.5.1 Introduction

The Peninsula Health site visit was conducted from 22-26 September 2008. The week's activities were coordinated through the HR department, specifically the area responsible for compulsory staff training (i.e. health and safety etc). Over the course of the week, ten interviews/group discussions were undertaken (with senior managers and HR staff, education coordinators, educators and learners), in addition to tours of facilities and observation of activities.

4.5.2 Peninsula Health at a glance

Peninsula Health considers itself the major provider of health care in the metropolitan and rural areas on Victoria's Mornington Peninsula. They have close to 800 beds, and provide a range of services including obstetrics, aged care, rehabilitation, emergency and intensive care, oncology, psychiatric services and Hospital in the Home (HITH).

According to the 2007 Peninsula Health annual report, the health service employed over 4,200 staff equating to over 2,660 EFT. Of those, approximately 951 EFT were allied health, 322 EFT were medical and 1,025 EFT were nursing staff. The report also indicated the health service had over 60,000 separations that year.

Peninsula Health has many sites, the major one being Frankston Hospital, located about 50 km from the Melbourne CBD. Comprising over 300 beds, Frankston Hospital is the major provider of acute secondary and tertiary hospital services on the Mornington Peninsula. It provides general and specialty medical and surgical services and mental health, maternity and paediatric services. It is the major teaching site of Peninsula Health and has close affiliations with Monash and Deakin Universities for undergraduate training. At the time of the site visit, Frankston Hospital was undergoing a major redevelopment, creating 6,000 square metres of new or refurbished space, including improvements to the educational facilities. The majority of the case study concerned people and activities located at this site.

The other sites of Peninsula Health include:

- Chelsea Community Rehabilitation Centre – A multi-disciplinary service to enable patients to gain optimal functional independence.
- Frankston Integrated Health Centre – Provides a range of services to the Frankston community, specifically cancer, medical (diabetes and endocrinology) and outpatient and surgical services.
- Golf Links Road Centre – Provides high care psychogeriatric residential aged-care and rehabilitation services, as well as palliative care.
- Mornington Centre – An aged care-focused facility. It currently has 60 geriatric evaluation and management beds. Future stages of development will see this facility dramatically increased in size, with the addition of 120 beds.
- Mount Eliza Centre – Prior to the establishment of the Mornington Centre, the Mount Eliza Centre provided aged care. Now, it temporarily houses much of the administrative services of Peninsula Health (to facilitate the Frankston Hospital redevelopment) and the Peninsula Health Simulation Centre. It is located about ten minutes drive from Frankston Hospital.
- Peninsula Community Mental Health Service – Provides a range of mental health services throughout the Mornington Peninsula area, including those at the Frankston Hospital. It incorporates a site at Davey Street and a residential site at Stray Street Frankston.
- Rosebud Community Rehabilitation Service – A multi-disciplinary rehabilitation service for patients recovering from stroke, movement disorders, arthritis, MS and other diseases that cause disabilities.
- Rosebud Hospital – A 75 bed hospital that is also a teaching site for Peninsula Health.
- Rosebud Residential Aged Care Services – A two-unit service providing support for elderly people requiring various levels of care.

4.5.3 An overview of clinical education at Peninsula Health

Prior to conducting the Peninsula Health site visit, a brief review of the website was undertaken. As detailed in the *About Us* section, teaching and learning is part of the strategic plan and also represented in the mission, vision and values of Peninsula Health. Specific examples of this are:

- Learning and education are listed as ways of improving practice and process.
- Provision of teaching, education and training are listed as tools through which the Peninsula Health vision will be achieved.
- Education and training opportunities are also noted as components of a HR strategy aimed at improving the attractiveness of Peninsula Health as an employer of choice.

The importance of education and training to Peninsula Health is not only evident in planning documents. Several pages on the Peninsula Health website indicate it is a health service that is involved in teaching and patients should expect to encounter students. Significantly, senior managers, hospital staff members and undergraduate students all value teaching and learning, indicating it is a valuable part of regular activities within Peninsula Health. Thus the importance of education and training appears to have been well translated from documentation to implementation.

In relation to clinical education, in 2007 Peninsula Health:

- Hosted 217 medical students in medical rotations. These students were from years three (13), four (94) and five (89) and ten were from overseas.
- Trained 28 interns.
- Provided 650 individual clinical placements for nursing students.
- Had 34 completions of the GNP in 2006 (of which 32 were offered places at Peninsula Health in 2007).
- Held 413 nursing staff development courses, resulting in 4,459 staff attendances.

4.5.4 Resources and Infrastructure

The high value placed on education and training is reflected in the resources provided for continuing education for staff. A particular example of this is the Continuing Education and Development Unit (CEDU). The CEDU is primarily responsible for nurse education (undergraduate, early-graduate and professional development), but is broadening its activities, encouraging attendance at professional development sessions by non-nurses (particularly allied health professionals).

The CEDU was formed in mid-2008, in an attempt to make nurse educators more accessible. Previously, nurse educators were located on each ward, but feedback indicated they were not always available when required. The formation of the CEDU has centralised nurse education and allowed the development of an on-call nurse education service. The result is the provision of a better education service with the same number of educators. Further improvements have also been made. For instance, education outside standard business hours (i.e. for shift workers) can be organised with relatively short notice. This was not possible under the previous arrangements. The CEDU is also more proactive as a unit than individual nurse educators, offering in-service training that pre-empts patient transfers/load across the health service.

Several of the activities organised as part of the Peninsula Health site visit were facility tours. In particular, a major tour of Frankston Hospital was provided, as were tours of Rosebud Hospital and the Golf Links Road Centre. All tours demonstrated students have access to most, if not all, of the same areas staff members do. This access was not limited to patient treatment areas, as it also included staff and tea rooms. When followed up with students, it was clear this collocation was a factor in them feeling welcomed and included within the hospital environment.

Conversely, it was clear students of some disciplines were provided with dedicated student spaces for private study or working with classmates that were also used as student tea rooms. Interestingly, students with access to *their own* space enjoyed it, but would have liked to

spend more informal time with their clinical educators (i.e. meal breaks). Of significant note, the major refurbishments being undertaken at Frankston Hospital did not seem to have a negative impact on dedicated student spaces, suggesting a strong commitment to maintaining education-specific resources.

In addition to discipline-specific student spaces, Frankston Hospital has what could be described as a learning centre, comprising several teaching areas, the library and the offices of the CEDU. Despite its apparent age, this space appeared to be well equipped including ICT capable of video- and teleconferencing. This space also appeared to be well used, with lectures or seminars occurring throughout most of the day. There were mixed reports on the library; some staff and students felt it is more than adequate for their needs; others suggested it is very under-resourced. Due to the close relationship between Monash University and Peninsula Health, several of the IT workstations within the library have been provided by Monash University and thus prioritised for use by Monash University students. This may account for the disparity in assessment of the library. It should be noted that new education facilities are planned as part of the Stage 2A Frankston Hospital Expansion.

The major piece of teaching and learning infrastructure at Peninsula Health is the Simulation Centre located at the Mount Eliza Centre. Housed in a converted linen storage facility, the Simulation Centre is equipped with SimMan[69] and several other simulated body parts, as well as an infant/newborn. Despite its *off-campus* location, learners at all levels (undergraduate, early-graduate and professional development) and from several disciplines (medicine and nursing) have made – and continue to make – use of the centre since its opening in early 2008. However, staff at Peninsula Health acknowledge the centre could be better utilised. In particular they are making efforts to increase the number of learners (at all levels) and disciplines that use the centre.

The Simulation Centre is used for a number of purposes. The major use is the training of health professionals to diagnose and treat patients. In the current climate of limited clinical placement sites and hours, simulation activities ensure learners (particularly undergraduates) are exposed to appropriate learning opportunities. At Peninsula Health, simulations are treated as real, with sterile equipment used and aseptic technique expected. A key aspect of each simulation session is feedback. In general, each simulation is allowed to proceed with limited interruption from the facilitator. However, each simulation is recorded (audio and video) and reviewed immediately afterwards for what was done well and what could be improved.

The Simulation Centre is also being (successfully) used for inter-professional education and to build team dynamics, especially for teams in high pressure wards such as intensive care, emergency and maternity.

As mentioned above, the Simulation Centre is located at the Mount Eliza Centre (a ten minute drive from Frankston Hospital). This has provided some benefits (users are less disrupted) and some drawbacks (promotion of its existence has been difficult). This is not its intended final location, as the new developments at the Frankston Hospital will include an education centre including the Simulation Centre. Being housed in *temporary accommodation* has created some difficulties. In particular, there has been a reluctance to completely develop the site (i.e. make it look exactly like a hospital ward) and fit it out with appropriate storage, resulting in a suboptimal look and feel.

4.5.5 Undergraduate clinical education

Peninsula Health is involved in the undergraduate education of several health disciplines including medicine, nursing, OT, physiotherapy, speech pathology and social work. The majority of students are enrolled through Monash or Deakin Universities, with a smaller number coming from Victoria and Charles Sturt Universities. Attempts were made to speak with at least one student, educator and administrator from each discipline; however, participant availability and time factors prevented this from occurring.

Medicine

During a group interview with third-year medical students (the only opportunity to speak with any undergraduate medical students), it was clear they were enjoying their learning experience. Medical students are attracted to study at Peninsula Health because of its small physical size, but relatively diverse patient load. Students indicated they are provided with many opportunities to view unique, interesting or stereotypical patients/conditions that may be outside their current topic, but nonetheless relevant to their overall education. Students reported that Peninsula Health has a reputation for providing a welcoming and supportive environment. To this group's satisfaction, this reputation was confirmed when they first arrived.

Peninsula Health exclusively hosts medical students from Monash University. Currently, the majority are undertaking their medical degree through the school-leaver entry course based at Clayton. However, the health service is in the process of increasing the number of placements for students of the graduate-entry medical programme offered through the Monash University GMS. This will result in larger numbers of medical students being placed at Peninsula Health. Although this will place greater demand on the resources at Peninsula Health, it is viewed as a positive step for the health service.

Across Peninsula Health (all disciplines and all levels), staff members acknowledged that teaching students is an opportunity to make an impression on the future workforce. Although taking more medical students will increase demand for resources, it will also increase the *pool* of students Peninsula Health has exposure to, and thus their potential for recruitment. Taking Gippsland-based medical students was further viewed as positive because of the role Peninsula Health will play within the GMS compared to the medical teaching coordinated from Clayton.

There was a widely expressed belief that Peninsula Health will play a greater role in the GMS compared to the Clayton school and thus be more integral to its success (or failure). Many people felt this importance had already begun to translate into a greater focus on creating and maintaining a stronger relationship between the two entities, resulting in a better teaching and learning experience for medical students at Peninsula Health.

As indicated above, overall, there was a sense that medical students enjoyed their experience at Peninsula Health. However, there were some instances where they felt there was room for improvement. Interestingly, the majority of examples provided involved *communication*. For instance, the students indicated the doctors seemed unprepared or unaware of the course content, limiting even the best learning opportunities. The students felt this could be resolved through better communication between the doctors and the course coordinators.

Tempering this desire for doctors to be more aware of course content, the students acknowledged how busy doctors are and that it is not always possible for them to be up-to-date or to provide the best possible learning experience. However, the students felt the doctors did not acknowledge this. In many instances the students would have been satisfied with a comment such as *it is going to be a busy time, note questions you might have and we can discuss them later*. Of course, students also play a role in encouraging and maintaining good communication.

There was also a certain degree of *disorientation* amongst the group. They indicated they were not specifically oriented to any of the wards they were part of. This disorientation continued with respect of introductions. Although medical students were made to feel welcome, they were not introduced to the nurses. The medical students suggested introductions would be useful because of the amount of time they spend with nurses.

The medical students did note that one of the attractive features of Peninsula Health as a place to study is its small size. This facilitates easy movement between wards, particularly if there is an interesting patient on another ward. Although not raised in discussions with students, their ability to move around the hospital may have been a factor in their feelings of disorientation and lack of introductions. In particular, if students were introduced to all wards initially, it would be a large task and staff and students would be likely to forget names and faces.

Nursing

Similarly to the medical students, nursing students enjoy Peninsula Health because of the welcoming environment, small physical size and diverse patient load. However, unlike the medical students, nursing students are provided with a more comprehensive orientation programme.

As mentioned earlier, Peninsula Health staff view students as potential future workforce and thus many efforts are made to ensure their experience of Peninsula Health is a positive one. Compared with medical students, creating a positive experience is taken to a higher level with nursing students. In particular, nurses complete regular student experience surveys. The result has been the creation of the Monash at Peninsula Programme (MAP). This programme has been embraced by the nursing staff and educators at Peninsula Health.

MAP has several facets and could be described as a process rather than a particular method of education. The programme is based on providing *consistency* in order to create *comfort* (for the learners) and thereby increase learning. There is also a focus on staff recruitment. For instance, when they first enrol, Monash University nursing students are offered the opportunity to be part of MAP depending on various factors, including their likelihood to become a worker at Peninsula Health beyond their undergraduate years.

Other aspects of MAP include:

- **Consistency of placement** - Where possible, students enrolled in MAP spend at least one of their rotations (per semester) at Peninsula Health. This reduces the number of orientations required as students are not orientated to the health service every time they are there, only to the specific ward. Regularly returning to Peninsula Health also provides a degree of familiarity between the hospital staff and the student, creating the potential for a personalised learning experience.
- **Consistency of educator** – Monash University provide one staff member to coordinate the clinical placements of all students at Peninsula Health. This person is employed on a full-time basis and is based at Frankston Hospital. Thus, students and preceptors know who to go to for advice relating to Monash University nursing clinical education. Students are also paired with *buddies* and are expected to work every shift with this person (night, weekend, etc). As well as preparing graduates with an understanding of each shift, this also reduces the time spent explaining to *today's preceptor* what stage of learning and experience the student is at.
- **Clear communication** – Each ward taking MAP-enrolled students has a manual describing the year- and rotation-specific competencies nursing students should have. Students are also provided with an orientation to the MAP programme, setting expectations from the start.

Through discussions with students and educators, it is clear MAP has improved the learning environment at Peninsula Health. Students enjoy the environment because they feel a greater sense of *team* and their learning can be more personalised. Staff and educators enjoy the environment because students are more productive as learners, making teaching them easier. The overall result has been a dramatic increase in the number of students returning to Peninsula Health as a place to undertake their graduate nurse year. Furthermore, the capacity of Peninsula Health to take nursing clinical placements has also increased.

In addition to Monash University, four other training organisations make use of Peninsula Health for nurse education (covering Division 1 and 2). However, none have a programme similar to MAP. Comments (from nurses) indicate they prefer the MAP programme to the traditional method of clinical placement for its clarity and consistency, despite an increased student load.

Driven by responses from the student experience surveys and a desire to make Peninsula Health a more attractive place to work, nurses have been encouraged to undertake the in-house preceptorship course, offered by the CEDU. This has also resulted in an improved student experience, independent of the MAP programme.

As indicated in the introduction, there is a culture of education within Peninsula Health, and this was certainly present amongst nurses and nurse educators. In particular, it came through in the way they spoke about being a preceptor. It was clear they enjoyed seeing each student develop. They also viewed supervision as an opportunity to test their own skills and ensure they are up-to-date with the latest practice.

Allied Health

Through interviews and focus groups, it appears allied health students have a very different learning experience to medical or nursing students. Firstly, allied health service provision is department-based, not ward-based. Thus, allied health practitioners (and students) are centrally located and travel to each ward as required (and in some cases patients travel to them). Secondly, as part of the arrangements for the (newly established) Monash University physiotherapy and OT degrees, these students must be provided with their own space. Intuitively, the provision of student-specific space seems like a good setup; however, students reported it as a double-edged sword.

Having their own dedicated space allows students to work more closely with each other, conduct their own private research and undertake self-directed learning. However, this space also makes it is possible for students to be *sent* to their spaces, an occurrence reported during several discussions. As a result, students reported feeling unwelcome, not part of the team and a barrier was established between students and practitioners. It was clear each supervisor has the power to establish or dismantle such arrangements, but in many cases they are unaware of the problems.

From a student's perspective, the ideal situation is one where most activities are conducted with their supervisor or the team (e.g. morning and afternoon tea and lunch), and time is also allowed for students to spend on their own. Students involved in common meal times, and/or those who shared common areas with their supervisors reported a greater involvement in informal discussions about patient treatment and interventions, thus facilitating their learning and sense of belonging.

A unique multidisciplinary activity undertaken at Peninsula Health (connected to the Emergency Department, ED) is RAD (Response, Assessment and Discharge). Created in response to increased numbers of patients within ED, RAD is a cross-disciplinary unit (mainly comprising allied health, but also nurses) intended to increase the hospital's ability to respond to and divert, where appropriate, patients not requiring admission. Its basic tenet is that all staff within the team need to be equipped with the basic assessment skills of other allied health team members, thus most team members can respond to most low-level patient needs. This unit appeared to be particularly important to the social work department, as all undergraduate students spent a small amount of time with the RAD social worker. It was unclear if other disciplines promoted their involvement in RAD to their students. The social work students appeared to enjoy the introduction, as it gave them an insight into an innovative and alternative model of care for allied health.

4.5.6 Early-graduate clinical education

Several programmes exist for early-graduates at Peninsula Health. There is a GNP, a programme for interns and second year post-graduate doctors as well as a programme specifically for IMGs.

Via the CEDU, Peninsula Health is hoping to create more early-graduate education opportunities and more that are multi-disciplinary. However, early efforts have been met with some resistance from staff who are reluctant to be part of such a session under the belief it has limited relevance to them.

As mentioned above, some small successes (in relation to multidisciplinary training) have been achieved via the Simulation Centre, where the coordinator has managed to recruit nurses to attend sessions organised by doctors.

Medicine

Peninsula Health has often been viewed as a place to work to meet certain *lifestyle* requirements, rather than *professional development* requirements. Furthermore, it is a relatively small health service located 50 kilometres from the Melbourne CBD. These two factors have made it difficult to attract early-graduates from all disciplines, including medicine. Within medicine, Peninsula Health has had to rely more heavily on the recruitment of IMGs. IMGs have particular educational requirements relating to culture and language that Peninsula Health has addressed by creating an IMG-focused intern education programme.

It was not possible to speak with any local or international early medical graduates. However, discussions with educators and senior hospital staff revealed that medical educators enjoy teaching at Peninsula Health. The educators also felt the learners enjoyed the environment and noted that career choice is beginning to play a larger role in selecting Peninsula Health as a place to work, particularly for those interested in pursuing GP training. Some educators put this shift in thinking entirely down to Peninsula Health getting *closer* to Melbourne since the construction of EastLink. Other educators felt that the establishment of the health sciences programme at Monash Peninsula and the growing link with the GMS have created a greater opportunity to develop a research culture. The educators suggested that early medical graduates see an opportunity to join the beginning of a research effort of a growing university teaching hospital.

Nursing

The most formal early-graduate education programme within Peninsula Health is for nurses. The GNP is aimed at university graduates in their first nursing position. This programme has been modified over the recent years in response to feedback from graduate nurses and the success of the MAP programme. The result is a GNP that is enjoyed by early-graduates and nursing staff.

Via MAP, coordinators of the GNP learned the importance of a thorough orientation. As a result, a more comprehensive orientation programme was introduced to the GNP. The orientation now goes over two days and covers general health service orientation as well as a ward-specific orientation. Independent of their orientation visit, graduate nurses are also strongly encouraged to meet the staff of the ward before they do their first shift and many take up this offer.

During their first two shifts, nurses in the GNP are considered supernumerary. Graduate nurses have reported this as being very beneficial to their learning and the development of their confidence. Ward nurses also appreciate this policy, as it allows them to better prepare the graduates for work as a nurse.

The GNP at Peninsula Health also sees nurses rotate between wards and even locations. Thus, graduate nurses receive a range of experiences throughout the year. The nurses reported this model has positive and negative aspects. The early-graduates felt the rotations provided a greater breadth of experience on which to base future decisions. The rotations also provided *hope* to the nurses if their current rotation was not ideal (i.e. the notion that it would be *over soon*). This was viewed as positive.

Graduate nurses are asked to provide preferences for where they would like to undertake their rotations. For the most part, these preferences are accommodated and thus early-graduates were happy. In some cases, the graduate nurses prioritised the low pressure/intensity wards first, thus enabling them to *ease* into nursing. Similar positives were also presented from the health service's point of view (wards are able to experience more learners and rotations are short enough that negative experiences can be tolerated).

On the negative side, graduate nurse preferences were not always granted. Some indicated they were put straight into a high pressure environment and felt unable to cope. Graduate nurses also felt rotating through wards increased the amount of formal and informal learning required, not just related to the provision of health care, but also ward policies, procedures

and personal dynamics. The need to learn personal dynamics was also noted as a negative by nursing staff.

For graduate nurses, the difficulties of learning new policies and procedures were compounded by incomplete and out-of-date manuals. Furthermore, early-graduates felt that up-to-date policies and procedures would have been useful for consolidating their learning outside of ward activities. Although the graduate nurses were not overly anxious, it is conceivable that well documented processes and procedures may have reduced some of the stress associated with the higher pressure environments.

Although the GNP is relatively formal compared with graduate programmes for other professions, at times graduate nurses were unsure of what they were working towards. In particular, there was no formal test or assessment at the end of the programme. Furthermore, graduate nurse positions are for one year only, so many of the graduates reported being unsure of their future beyond that year. Approaches to graduate nurses (from senior health service nurses) about future work opportunities tended to be *ad hoc*. This creates uncertainty amongst the nurses as to whether they should be looking for work, or if they should be confident their time at Peninsula Health would continue.

Allied Health

Compared to medicine and nursing, allied health professions have very poor early-graduate programmes at Peninsula Health. Indeed, none of the allied health discipline staff interviewed as part of this study (OT, physiotherapy, social work, podiatry and speech pathology) have a graduate programme at Peninsula Health. Furthermore, allied health disciplines do not have specific graduate positions; instead they are employed as Grade 1 practitioners. Allied health educators (effectively the senior staff) recognise this deficit and do their best to support the Grade 1 practitioners. However, due to the nature of the work, they acknowledged this is not always possible.

Despite the lack of a formal programme, early-graduate allied health practitioners have educational support that (in some instances) is greater than that for graduate nurses. Several focus groups conducted as part of this study included early-graduate members from disciplines covering allied health and nursing. The contrast between the educational environments was interesting to note.

Despite the efforts of the CEDU, allied health disciplines believe there is limited in-service training for them (or applicable to them) compared with nurses.

However, when it comes to accessing external training (e.g. conferences or workshops), it appeared allied health practitioners (generally) have better access to these activities, in that they are *allowed* to attend, not so much that their attendance is paid for. For the most part, early-graduates put this down to the unit mangers' own personal beliefs on education. Of course, staffing levels and service provision standards were noted as a major factor as well. This all culminated in a perception that the learning environment was better for allied health than nursing. Interestingly, the allied health staff felt this is more a reflection of their profession rather than of the health service. All were in agreement that "medicine have it better than us".

Allied health educators (effectively the more senior allied health staff) noted a major factor in the provision of a good learning environment is staffing levels. Several disciplines noted that some positions within their discipline have remained unfilled for an extended period (despite the best efforts of the health service), thus the learning environment was bound to be affected by the increased workload.

Similarly to the nurses, many of the allied health early-graduates noted the paucity of policies and procedures pertaining to their discipline. One early-graduate commented that there was such a large amount of information required for adequate practice that it was impossible to learn it all in the undergraduate years. Thus, they felt policies and procedures on various aspects of care would be of great benefit. Indeed, many of the early-graduates noted,

following the focus group session, they would go back to their areas with the intent of starting some of this documentation.

4.5.7 Summary

The Peninsula Health case study provided an opportunity to understand how clinical education of undergraduate and early-graduate learners is handled in a multi-site health service located on the fringe of metropolitan Melbourne. Key impressions from the site visit include:

- A positive culture of learning is evident throughout the organisation. This is not limited to staff attitudes, as several key health service documents indicate the importance of education and training.
- Viewing students as potential future workforce has contributed to providing a better learning experience for students.
- The CEDU is developing as a significant educational resource for nurses, but also other disciplines.
- The MAP programme has had a significant positive impact on undergraduate and early-graduate nurse education. Elements of MAP could be implemented for other disciplines.
- The Simulation Centre is a significant resource that can reduce the burden on clinical placement hours and also provide opportunities for multidisciplinary learning.
- The links with Monash University at Peninsula and Gippsland are seen as an opportunity for the health service to further improve its educational environment.
- The provision of student-only spaces is not always positive.
- Staffing levels are a problem; unfilled positions (particularly in allied health disciplines) result in higher clinical loads for staff, putting pressure on the time available for educational activities.

4.6 Summary of case study findings

From the original conception of this project, it was envisaged that case studies would be the major data collection activity to inform the development of the best practice framework. It was for this reason that so much effort was put into gathering evidence upon which to base the selection of case study sites.

As it transpired, the case studies proved to be a very worthwhile activity. Firstly (and obviously), the case studies are a wealth of information about working models, ideas and innovations. Since the case study hospitals rated well with learners, it is already known these models of clinical education are delivering positive experiences from the learners' perspective, which increases their value to other hospitals looking for new ideas. Secondly, the case studies are the ultimate *reality check* for developing a new framework; the place where the theory of what is desirable in clinical education meets the reality of what is achievable with finite resources and infrastructure. Finally, the case studies demonstrated that a common set of issues, principles and solutions exist across the system, regardless of discipline, geographic location or level of resourcing. It is this last point that suggests it is indeed possible to develop a best practice framework for clinical learning environments that can work across the whole health system.

Perhaps the most important feature common to all case study sites is an organisational culture that values learning, not just for those formally identified as learners, but for all staff and all disciplines. In many regards, this feature underpins all the others and might even prove to be a prerequisite for the establishment and maintenance of the highest quality clinical learning environments. However, as observed at LRH, the culture of the organisation is not a static trait and changes in senior management or senior clinical positions can quickly see the culture of learning challenged.

The second common feature – which follows on to some extent from the culture that values learning – is the provision of a welcoming environment for learners (particularly students). The basis for the welcome varied between sites. At some sites, staff saw students as potential future workforce. At other sites, staff saw their role as educators as being important and welcomed students as part of that educational equation. Regardless of the reason, the result was a feeling of being welcome (rather than a burden) amongst the learners.

All case study sites had established formal entities or units that have responsibility for oversight and implementation of some or all undergraduate, early-graduate and continuing professional education. The value of such units is many-fold. They provide dedicated staff for educational activities and serve to centralise and streamline administrative and organisational aspects of the process. They provide resources for staff and can serve as a common liaison point for training providers. These units are also tangible evidence of the value placed on education by the organisation.

Another common feature was the existence of close, effective working relationships with one or more of the universities whose students are hosted at the site. Both partners feel the benefits of these relationships and the result is the development of programmes that are innovative, meet the needs of both parties and are highly regarded by all stakeholders, including learners.

Resources and infrastructure were clearly different at the four case study sites and ranged between the most modern, state-of-the-art, high-tech facilities at Austin Hospital through to the more modest facilities at the Geelong Hospital. One facility that was well-resourced at all case study sites, was the library, which learners and staff value very highly.

Three of the sites have – or have access to – modern simulation facilities. Given the growing importance of simulation as an adjunct to clinical learning, the fourth site (Barwon Health) has plans to develop such facilities. Interestingly, the learners at all sites were more concerned with having access to appropriate clinical learning opportunities and being able to spend

protected time with consultants and registrars, than with whether the hospital has a simulation centre or not.

Finally, the nursing programmes at all four case study sites have developed mechanisms to facilitate consistency and continuity of undergraduate nurse education. This is highly valued by all stakeholders, especially the learners.

On the other side of the equation, all case study sites had three serious issues in common.

The first – and probably most serious – issue is that staff perceive that a large amount of clinical teaching is effectively being provided *pro bono*. Staff at each of the four case study hospitals used this term to describe their educational role. Thus, even though an educational role may be included in a clinician's position description, no time (or insufficient time) allowance is made for this role and in most instances a full clinical load is still expected.

The second issue is that early-graduate learners are being prioritised behind undergraduate learners in terms of their educational needs. Staff ascribe this to the different level of structure and formal assessment in the undergraduate and early-graduate programmes. Structured learning objectives and structured assessment have an inherent urgency and priority, more so than activities that are more *ad hoc*. When staff are already time-poor, they will tend to allocate time to only the most urgent and compulsory activities.

The final issue shared by the four case study sites is that the majority of clinical educators do not have any formal training as educators. The exception is in nursing, where considerable effort is made to train staff to be preceptors, supervisors or educational facilitators. Other disciplines do not do this and staff rely on their experiences as learners to guide their behaviour as educators.

5 Best Practice Framework for Clinical Learning Environments

This section presents the framework that was developed based on data collected throughout this project. As this framework is intended to be read independently of the rest of the report, there is some reiteration of ideas and information in this section that are presented elsewhere.

5.1 Preamble

The primary objective of this project has been to develop a framework that can underpin consistency and excellence in clinical education and training across the state. This is part of a comprehensive strategy developed by the Department of Human Services (DHS), aimed at enhancing the capacity and quality of clinical education in medicine, nursing and allied health in Victoria. The ultimate aim is the creation of a sustainable health service workforce.

In recent years, the Australian Government has responded to current and projected shortages in the national health workforce by dramatically increasing the number of Commonwealth-supported undergraduate places (CSPs) in medicine, nursing and allied health courses. Victoria has campaigned successfully to secure a significant proportion of these places, resulting in substantial growth in the number of CSPs allocated to its undergraduate health courses.

Although the increase is necessary to provide the pipeline of health professional graduates needed in Victoria in the next two decades, it represents a significant additional impost on an already over-burdened health service sector. In particular, the increase in CSPs will result in a corresponding increase in the number of clinical placements required to appropriately train these students as undergraduates and then as early-graduates. Importantly, in developing strategies to deal with the increased numbers of health professional students and early-graduates, issues of *quality* go hand-in-hand with issues of *quantity*.

Despite the existence of discipline and health service standards for clinical education and training, there is considerable variation in the quality of clinical education across the sector and, in some instances, even within individual health services.

The framework that has been developed – based on data collected from health services, learners and university educators through case studies, surveys and interviews – is intended to be used by all clinical education stakeholders. It is anticipated the framework will improve clinical training experiences for all concerned, by informing policies, practices and behaviours. The framework is primarily targeted to health services and is broadly applicable to a range of contexts, from primary care to acute health settings. However, as discussed later in this document, stakeholders outside health services also have responsibility in the successful implementation of the framework.

Within health services, it is anticipated the framework will have different relevance to different categories of individuals:

- For CEOs, the framework will assist in setting objectives for HR services, performance targets for clinical divisions and in building and negotiating relationships with training providers. It also provides a risk management tool for addressing workforce sustainability issues.
- For Directors of Medical Services, Nursing and Allied Health, the framework will be useful in addressing teaching capability and quality of teaching.
- For individual educators and supervisors, the framework will guide self-assessment of their own contribution to clinical education, as well as their own professional development needs.
- For learners, the framework will assist in shaping their expectations of their clinical education experience and setting standards for their own performance.

To assist in implementing the framework, a number of indicators and outcome measures have been identified. The majority of indicators are suggested for use as internal health service

benchmarks only. A small number of indicators have been flagged as externally reportable. Indicators reportable to training providers address coordination and communication of education and training between health services and training providers. Indicators reportable to the DHS are currently (or may become) part of funding and performance criteria, allowing funding for education and training to be linked to both quantitative and qualitative indicators. However, the primary benefit of the indicators will be to allow health services to track their own progress over a period of time.

High quality learning environments are a competitive advantage for Victoria, both in relation to attracting health professional learners (who may subsequently be recruited to the workforce) and in recruiting senior clinical staff. This framework will assist Victoria in maintaining and extending its advantage, by ensuring consistently high quality clinical education across the state's health service sector.

5.2 Using the framework

This framework is relevant to all those who deliver and are responsible for the provision of clinical education and training in health professional disciplines. As discussed earlier, within health services this includes directors, coordinators and deliverers of education and training, as well as senior managers and administrators. This framework is also relevant to academic and clinical education coordinators and administrators within training provider organisations.

The framework provides guidance in relation to six key elements that comprise a clinical learning environment. The framework is not intended to be prescriptive and acknowledges that many effective models of education and training exist, and also that discipline-specific requirements must be accommodated. Instead, the framework presents a set of objectives and encourages individual health services to explore the most effective and appropriate mechanisms to achieve them. The case study reports presented in the final report for the *Best Practice Clinical Learning Environments* project provide some examples of successful efforts to address these elements and in the future, the DHS may establish an information exchange to allow all health services to register their successful strategies for the information of others.

While this resource has been developed primarily based on evidence from clinical education and training in public acute hospitals, much of the content is likely to be relevant in other health care settings where clinical education and training occur. Thus, the term *health service* has been used throughout the framework and this is intended to refer to any health service under the jurisdiction of DHS. Indeed, to the extent that the principles and elements of the framework apply to health services beyond the jurisdiction of DHS, those health services may also find this framework useful.

5.3 Scope

The focus of this framework is on clinical education and training provided to learners in medicine, nursing and allied health disciplines. Particular emphasis has been placed on clinical education for students enrolled in entry-level professional courses. In most instances, this will be an undergraduate bachelor level degree, although a growing number of courses are now graduate-entry and into the future, a number of courses will be graduate-entry courses at masters or doctoral level.

The other major emphasis of this framework is on clinical education and training for *early-graduates*. These are health professionals who are within the first two years of receiving their entry-level professional qualification.

Although the framework is particularly relevant to clinical learning environments for students and early-graduates, aspects of the framework may also be applicable to more senior clinical staff. Undergraduate and early-graduate clinical education are only the first stages of a continuum of skill and knowledge acquisition for health professionals.

5.4 Terminology

Throughout the framework, the term *undergraduate* will be used to refer to entry-level professional courses and therefore *undergraduate students* will refer to students enrolled in those courses (even though the course may actually result in a masters or doctoral qualification). Similarly, the term *early-graduate* refers to an individual who has completed their entry-level professional qualification within the last two years. In general, this will encompass junior doctors employed as Hospital Medical Officers at level 1 and 2 (HMO1 and HMO2), nurses in Graduate Nurse Programmes (GNP) and in their first post-GNP year, and allied health professionals in their first two years post-qualification (generally employed at Grade 1 level).

The terms *education* and *training* are often used interchangeably, although *education* is usually used in relation to structured courses for undergraduate students, while *training* is a less structured activity that occurs post-qualification. In this framework, use of either term covers all possible meanings of both terms.

The term *clinical learning environment* will be used in the broadest sense of the word 'environment', to encapsulate the range of factors that impact on the learning experience. *Clinical rotation* will be used through the framework to denote the time spent by learners in particular clinical settings. This includes what are more commonly referred to as 'clinical placements' for undergraduate learners, as well as 'rotations', 'specialty placements' and 'training programmes' for graduate learners. Clinical rotations may be of any duration, ranging from a few days to several months.

5.5 Principles

Four basic principles were identified that underpin the framework and define the limits of its application.

Principle 1: Patient care is both an integral component and the ultimate measure of quality clinical education.

Patients are the most valuable resource in a clinical learning environment, but this is a resource that must be neither overused nor misused. Although patients might be inconvenienced by the presence of learners, their care should never be compromised by the need to provide learners with the most useful learning experiences. On the other hand, the interests of patients are served by a learning environment that produces the best trained health professionals. Indeed, one objective of delivering best practice in clinical education is improved patient outcomes, even if this is difficult to measure directly (since patient outcomes reflect multiple variables within the system).

Principle 2: Learning in clinical environments is an essential component of training health professionals.

Clinical education is an integral component of the training of health care professionals because it provides a mechanism for clinical skills training, for professional socialisation and for integrated learning. Although some of the skills training and integrated learning can be achieved in other settings, for example using simulation or computer-based learning, there is no substitute for experience directly involving real patients in clinical settings.

Therefore, the starting position for this framework is that clinical rotations are valuable activities that meet the needs of the system by assisting in achieving desired workforce outcomes. In general terms, the objective of clinical rotations is *to develop domains of competence as well as attributes in the learner that will result in a professional who can contribute productively to the health care system*. In this context, *contribute productively* comprises three main elements:

- *Whether* the individual works – that is, does the individual complete their training and join the health workforce to practice their profession?

- *How* the individual works – that is, does the individual have the necessary knowledge, skills and competency to practice their profession to appropriate standards and industry registration requirements?
- *Where* the individual works – that is, is the individual willing and able to practice their profession in an area of workforce need?

Principle 3: Registration and/or accreditation standards set down by professional bodies are the appropriate mechanism for ensuring that clinical education arrangements meet minimum standards for educational or training outcomes.

This framework is not intended to replace, compete (or interfere) with or supplement the existing registration and accreditation standards that apply to clinical education. Any conflict between the elements of this framework and professional standards must always be resolved in favour of the professional standards. If a clinical learning environment does not meet professional standards, it is a matter for resolution by the relevant professional body, and adherence to this framework does not obviate the requirement to meet professional standards.

This framework should be viewed as building upon a base of minimum standards determined by each of the professional regulatory bodies.

Principle 4: Many different models of clinical education and training exist and successfully produce clinicians of required competency and standard.

In developing this framework, it has been assumed that health services and their educational partners (universities, registered training organisations (RTOs) and professional colleges) are best placed to determine the educational model that most appropriately accommodates both curriculum requirements and resource constraints. Different models of teaching and educational supervision work better for some disciplines than for others and one model is unlikely to work equally effectively across all disciplines or even across different levels of learners within the same discipline. Furthermore, educational trends shift over time and new educational models are continually being trialled and evaluated.

Therefore, this framework is intended to work across any model of clinical education and importantly, is intended to create the flexibility within health services to permit any educational model to be effectively employed.

5.6 Factors influencing clinical learning environments

A best practice framework for clinical learning environments is intended to provide health services, training providers, educators and learners with guidance to inform policies, practices and behaviours that will improve clinical training experiences for all concerned. In this context, from the health service's perspective, factors that influence the delivery of clinical education can be categorised as *internal* or *external*.

- *Internal factors* are those factors controlled by the hospital/health service. These include: staffing levels and allocation of resources; educational skill level (and level of preparedness) of educators and/or supervisors; cultural attitudes towards education; enabling structures and policies; and communication practices.
- *External factors* are those factors not controlled by the health service that could influence the way clinical education is delivered. These include: levels of funding (from external sources, i.e. governments and training providers) provided for educational activities; key performance indicators; university academic practices and the way learners are prepared for clinical rotations; the social, political and economic climate; accreditation requirements and the patient case load.

The framework presented in the next section deals primarily with internal factors and provides guidance on how these can best be managed to deliver the best possible clinical learning environment. A later section addresses the responsibilities of other stakeholders in this system to contribute to the creation and maintenance of best practice in clinical education.

5.7 Key elements of a best practice clinical learning environment

To be effective, clinical learning environments must provide learners with an opportunity to experience the reality of professional practice in their chosen profession in a safe and supportive environment. At a minimum this is achieved by providing learners with:

- Access to patients/clients;
- Interactions with clinical staff;
- A context in which the learner can critically evaluate practice and reflect; and
- Opportunities to take responsibility, work independently (under supervision) and receive feedback.

However, if clinical learning environments are to represent best practice, more than the minimum is required. The following six elements are the essential underpinnings for a quality clinical learning environment. Many of the elements overlap or are interrelated.

1. An organisational culture that values learning

In the context of a health service, an organisational culture that values learning has the following characteristics:

- **Education is valued** – There is an organisational commitment to teaching that ensures all employees view educational duties as beneficial to themselves as well as learners (through a two-way flow of knowledge and self-reflection), rather than being seen as a burdensome obligation. The organisation values lifelong learning and evidence-based practice, and makes an allowance for the *inefficiency* of learning (with respect to hospital productivity outcomes). Educational activities are used as rewards rather than punishments for poor performance. Learning activities and educational priorities are not "the first thing to go" when budget cuts are required, and innovation is not sacrificed due to funding constraints.
- **Educators are valued** – Educators are appropriately rewarded for their work. The educational components of a person's job are not trivialised (including quarantining time for teaching, reduced patient load and backfill); the skills an educator has are respected and educators are encouraged to continually improve those skills (for example, by pay loadings for educational qualifications); educational activities are counted and considered as part of career progression and dedicated teaching positions are established to provide alternate career pathways.
- **Students/learners are valued** – All staff expect the health service to take learners and their arrival is anticipated and planned for. When learners arrive, they are treated as part of the team, respected for what they bring (new ideas, critical appraisal, future workforce) and given opportunities to learn.
- **Career structure for educators** – There are defined skill/competency levels for educators with a clear pathway from one level to the next. Progression through the levels is facilitated and encouraged.
- **Education is included in all aspects of planning** – As is the case for clinical services, education is an essential component of all plans (building, operational, strategic, etc.). This means the requirements of the educational activities are taken into consideration during the planning phase, rather than "bolted on" at the implementation phase.
- **Use of facilities and resources are optimised for all educational purposes** – There are dedicated educational facilities that, although available for other purposes, are set up and prioritised primarily for their use in teaching and learning.

2. Best practice clinical practice

Best clinical practice is a reflection of the skill, knowledge and competency of staff, but also of the adoption of best evidence into practice, which is both an individual and an organisational responsibility. Recruitment of highly skilled staff is obviously a key factor, but an organisational culture that promotes skill development amongst its clinical staff and regular review of clinical practice is essential to maintaining high standards. Formal structures, such as an evidence-based practice support unit[70], can assist in promoting organisational change and sustaining an evidence-based health service.

Part of best practice clinical practice also includes well documented policies and procedures. Policies and procedures define organisations. Within health services, they provide guidelines

for all activities that are undertaken, including clinical services, administration and education. They are the basis for delivering consistent standards of service across the organisation and provide an important resource to assist in the enculturation of learners.

Well-documented policies and procedures should:

- **Be accessible** – policies and procedures that are inaccessible are less likely to be used or referred to by learners.
- **Be clear** – the language used should be clear and non-technical if appropriate, with limited jargon; the document may be divided into logical sections to make information easier to find by someone who is unfamiliar with the document.
- **Be concise** – documents should have enough information to enable the policy to be understood completely or the task to be undertaken competently by learners. The volume of information and level of detail should be appropriate to the policy or activity being described.
- **Document the authors and reviewers/revisers (and their position)** – if further clarification of a policy or procedure is required, information about the original author will facilitate this process. Documenting the authors also acknowledges their contribution to the workplace.
- **Include creation and revision dates** – noting these dates will provide a level of certainty about the currency and accuracy of the information.
- **Include intended future review dates** – noting this information is a reminder about the need for continual quality improvement activities, particularly to ensure best practice is maintained.
- **Refer to evidence** – it is important any policy or procedure is based on evidence, and that evidence should be cited to provide context for a learner.

3. A positive learning environment

Although it is not difficult to understand at an intuitive level, the *positive learning environment* concept is complex to define, in part because it is a subjective concept. That is, the elements that might make a learning environment positive from a clinical educator's perspective might not be the same elements that make it positive from a learner's perspective. The following list summarises input from learners and educators on what makes a positive learning environment.

- **A welcoming environment**, where learners receive an appropriate orientation/induction and are included in activities. Learners are made to feel wanted and valued (not a burden) and there are facilities and amenities provided for them.
- **A culture of learning**, as discussed in Element 1.
- **A safe environment** refers to *emotional, cultural* and *professional* safety, as well as *physical* safety. It is a non-judgemental environment where learners feel it is safe to participate, ask questions, take chances and make mistakes. It is also an environment in which struggling learners are identified and assisted.
- **Appropriate learning opportunities** are provided to effectively bring together learner, teacher and patient in the same space, including interprofessional learning opportunities. This also includes areas such as staff administrative duties, which provide challenging, active learning for learners that help them to become practice-ready.
- **Clarity of objectives**, where clinical educators have knowledge of the expected educational outcomes and the knowledge and proficiency level of each cohort of learners. This also includes awareness of assessment, which is then factored into the clinical education.
- **High quality clinical education staff**, who display appropriate interpersonal attributes, are suitably trained for the task, are resourced to enable fulfilment of the educator role and are adequately prepared. As far as practicable, clinical education staff should have experience and confidence, be reflective, flexible and good at handling problems. Importantly, they should be committed to the education requirements of their profession (and to their profession in general), have the capacity to work interprofessionally and be a good role model for learners.

- **Well-prepared learners**, who demonstrate professionalism and are willing and able to adapt their learning style to new environments. Well-prepared learners are those who undertake prior reading and make an effort to find out about their new clinical environment (both personnel and facilities). Although most of the responsibility for preparation of learners lies with the training providers and the learners themselves, to the extent that health services have some role to play in providing information and encouraging professionalism and other elements of preparedness, they should do so.
- **Appropriate ratios of learners to educators**, to ensure educators are not given too much responsibility to be effective or responsive to individual learners and also to ensure learners have access to experienced clinicians as required. Various awards and accreditation requirements set minimum standards for balancing learner and educator numbers, but best practice will be situation-dependent and may require more than minimum standards.
- **Appropriate ratios of learners to patients**, to ensure that clinical spaces are not over-burdened with multiple groups of learners (not necessarily all from the same discipline) all attempting to work with the same group of patients at the same time.
- **Continuity of learning experiences**, to assist in professional socialisation of learners, allow learners to develop a sense of belonging, and help educators to develop awareness of the learning needs of learners and feel a sense of contribution to their successes. Continuity between learning environments also reduces the amount of time learners need to spend in orientation-type activities, thus increasing the time spent in learning clinical and professional competencies. Familiarity with an environment (or a particular preceptor, educator or facilitator) allows a learner to focus on acquisition of new skills and knowledge[40]. In practical terms, *continuity of learning experiences* will not always be achievable, for example for disciplines where diversity of practice is necessary to complete training requirements. Even where it is practicable, it will manifest differently depending on the requirements for learning in each profession. In some instances, it may be possible for learners to return to the same health service/hospital for a number of placements. In these cases, continuity of supervisors, preceptors or clinical educators may be achievable; where this is not possible, continuity might be achieved through a clinical education unit that maintains contact with learners wherever they are placed within the health service.
- **Structured learning programmes and assessment**, which recognise and document learning needs and provide timeframes for achieving learning objectives. Where clinical education (particularly for early-graduates) is not structured or formally assessed, this can diminish the urgency and incentive for both learners and educators and may create a situation where the unstructured learning needs of one group is *discounted* relative to the structured learning and assessment needs of another group. Structured learning opportunities should be available in all clinical learning environments although the *form* the structure takes will vary between settings, disciplines and learners. Where formal curricula do not exist, individual *learning contracts* or *learning portfolios* can be employed, including explicit statements about expected outcomes and criteria for assessing performance, as well as opportunities for self-assessment and feedback from others.

4. A supportive health service-training provider relationship

A supportive relationship is one where both parties recognise the importance and value of the other, with mechanisms that assist each other to optimise their contribution to the training of health professionals (both undergraduates and continuing professional education). One element of this relationship is understanding the institutional and systemic drivers and limitations that impact on the design and/or delivery of clinical education activities.

From the learners' perspective, it is important that the health service and the training provider be seen as working together in a mutually respectful partnership, to achieve the best possible educational outcome for the learner. Blame shifting and situations that trap learners between two institutions with competing agendas should be avoided.

A supportive relationship will be both enhanced by and reflected in *open communication* between the partners. This may be manifested through joint committees, regular meetings of educators and coordinators and/or staff exchange. In the first instance, an identified point of

contact (with back-up, if possible) within each organisation can be very helpful in establishing and maintaining a good relationship. Sharing of resources and providing access to electronic educational resources, for example through reciprocal access to institutional intranets, is a simple mechanism for enhancing collaboration.

As far as practicable, health services and training providers should have mechanisms for exchanging input and feedback on educational matters. The relationship can also be enhanced by direct exchange of expertise and experience; for example, universities can support health services by training health service-based educators, while health service-based clinicians can assist universities by teaching university-based clinical skills classes.

5. Effective communication processes

Effective communication processes foster interaction and exchange of ideas and provide clarity about *when* to communicate, *who* to communicate with and *how* best to achieve the communication. The focus is on maintaining an active dialogue, rather than addressing failures of communication, and covers both verbal and written modes. Effective communication processes include mechanisms for easy identification of learners and educators to each other.

An important aspect of communication is *feedback* and good feedback mechanisms will encourage and facilitate commendation, comment and criticism equally. Good feedback is:

- Specific – focussing on behaviours, rather than personalities or personal observations; matched to performance on learning outcomes and assessment tools where relevant
- Timely – provided at the earliest practical opportunity;
- Balanced – including positive feedback in addition to suggestions about areas for improvement; and
- Constructive – providing positive, informed suggestions for change or development.
- Two-way – providing opportunities for participation by multiple stakeholders.

Importantly, good feedback mechanisms will include acting on the comments received and making changes where necessary. As appropriate (and if possible), the feedback mechanism should also include reporting the changes made back to the source of the feedback.

Effective communication underpins most other elements of the framework and, from an educational perspective, is relevant to interactions between:

- Educators, learners, administrators and other clinicians;
- Health service-based educators and training provider-based educators;
- Learners and the range of clinicians, administrators, patients and other learners they encounter.
- Senior managers in health services and senior training providers and government representatives.

From a learners perspective feedback mechanisms need to be carefully constructed to ensure the inherent unequal power relationships do not compromise learner feedback.

6. Appropriate resources and facilities

The resources and facilities that are required to enhance or facilitate clinical learning will vary between health professions, health services and levels of learners. Therefore, the general principle is that learners should have access to the facilities and materials needed to optimise their clinical learning experience. This may include areas to facilitate reflective practice, access to evidence-based resources, peer support and communication tools, and workspaces including IT. For learners, access to other facilities and amenities, such social facilities (kitchen and common room), lockers and staff toilets, as well as swipe card access, is desirable where practicable.

In reality space is a relatively fixed resource and once a structure is built, it is difficult to incorporate new facilities and services. Therefore, it is important these issues are taken into account in the planning phase and that educational facilities are not always the first to be eliminated when budget constraints bring about a review and modification of the plans.

5.8 Responsibilities

Although this framework applies specifically to health services, all stakeholders in the clinical education system for health professionals have a role to play in creating and maintaining best practice clinical learning environments.

a) Hospitals/health services

The primary responsibility of health services is to implement the framework to the best of their ability and capacity. At the most basic level, this translates into valuing and prioritising the educational role of the health service as highly as the provision of health care. Health services can further improve overall clinical education outcomes by working with other health services to communicate good ideas and share experiences and learnings from their clinical education practices. One mechanism to achieve this is to ensure key clinical education contacts are identified on each health service's website and establish education networks and forums that facilitate collaboration and sharing. It is important for health services to use peer influence to encourage each other in the development of best practice in clinical education, as well as working together to influence government policies and priorities. A significant amount of health service funding comes in the form of support for educational activities, therefore health services also have a role to play in ensuring funds are appropriately and transparently spent.

Health services also have an important role in development and revision of curricula for learners and should make every effort to work in collaboration with training providers to foster development of courses that produce employable practitioners.

b) Training providers

Higher education providers (mainly universities and RTOs) have a major responsibility for preparing learners for clinical placements. This includes adequate levels of pre-clinical education, basic clinical skills training and pre-placement briefings. This responsibility extends to supporting the learners throughout their clinical placements, including regular contact with health service-based clinical coordinators, educators and preceptors, and regular contact with learners.

Universities/RTOs also have a major role to play in preparing health services for placements. This includes:

- Recognising their role in funding part of the clinical education process.
- Working with health services to identify the best educational activities and resources to fund and support.
- Working with each health service to match learners to placements.
- Providing up-to-date information to the health services about learning objectives, assessment and curriculum content.
- Assisting health service-based educators to develop their education skills.
- Working with health services to maintain their active learning culture.
- Working with health services to create interprofessional learning opportunities.
- Inviting health service-based educators to contribute to university/RTO educational forums.
- Seeking input from employers regarding the needs and competencies for work-ready graduates in order to appropriately tailor curricula.

When clinical placements are completed, universities/RTOs have a responsibility to debrief with the health services on the conduct of the placement and provide mechanisms for feedback and ongoing quality improvement on their own processes.

c) Government

As the primary source of funding for public health services and the entities to which health services are accountable, governments have a major role to play in enabling the achievement of best practice clinical education environments.

Health service performance indicators set by governments are a major factor in determining the priority given to educational activities since the inherent inefficiency of teaching and

learning activities is often at odds with the efforts of health services to meet their government-set performance targets.

Therefore, to facilitate best practice in clinical learning environments, governments have a responsibility to:

- Build educational performance targets into the performance measures for health services and fund the health services appropriately to achieve the desired outcomes.
- Resolve policy conflicts that create a disincentive to health services to place a high priority on educational activities.
- Ensure new policies include adequate consideration of any educational impacts.
- Ensure any new health service planning (including building plans) incorporates clinical learning requirements.

d) Learners

Learners are not passive recipients of education and training and have an important role to play in ensuring their clinical education experiences are of value to themselves and to the health services that host them. To this end, learners have a responsibility to:

- Understand their role as a learner (including their responsibility for self-directed learning) and be prepared to participate in the two-way flow of information.
- Prepare themselves adequately at the commencement of each new rotation.
- Demonstrate professional behaviour towards clinical and non-clinical colleagues, patients and other learners.
- Be prepared to adapt their learning styles and respond to a dynamic learning environment.

5.9 Sustainability and performance indicators

The most significant threat to the sustainability of best practice clinical learning environments is economic. Health services are primarily patient care organisations and patient care will always be prioritised ahead of education when budgets are tight.

However, a high quality health service relies on continuous cycles of recruitment and retention of skilled clinical staff. Clinical learning environments are a major factor in this equation, since a high proportion of early-graduates seek employment at health services where they had a positive learning experience[5] and health services that place a premium on education are more likely to retain high quality staff. In this context, ongoing implementation of this framework can be seen as a risk management strategy, addressing one of the most serious risks health services face in times of national health workforce shortages.

Therefore, the sustainability of high quality clinical learning environments depends on the recognition – particularly amongst governments and health service managers – of the importance of education in the core business of health services. It also requires a commitment from training organisations to consider, more realistically, the needs of the environments in which their learners are trained, and to tailor learning programmes accordingly.

From the perspective of the health service, sustainability of a high quality clinical learning environment is also a matter of monitoring how well this framework is being implemented, to ensure issues that need to be addressed are identified and resources are being applied where they are most needed.

The following tables set out indicators relating to each framework element that can be used to assist health services in the sustainable implementation of the framework. Obviously, these indicators must be considered in the context of relevant workplace agreements. The indicators are presented in two tables. Table 12 suggests a small number of indicators that could be reportable to DHS. It is anticipated that any indicators already collected elsewhere would not be duplicated by DHS.

The second table, Table 13, includes a much longer list of measures. These are suggestions of **optional** measures that health services might wish to maintain for their own monitoring processes, to track the ongoing consolidation and improvement of clinical learning

environments within health services. **Indicators shown in bold are highly recommended.** Some of these indicators might be shared with training providers, as part of the partnership agreement, but that would be a matter for negotiation between the parties. Much of the data for these indicators will be drawn from information or documents already available within health services, although some new information will have to be collected through staff and learner surveys. Some of the indicators may apply to more than one of the framework elements, although they are only shown in the table against the first element they apply to.

Table 12: Indicators likely to be reported to DHS

Framework objective	Indicator	Indicator type[i][71]	Likely data source	Element
A staff profile that includes high quality educational (as well as clinical) staff, through hiring high quality staff and professional development of existing staff	Number of staff with training as educators or with educational qualifications	Structural	HR data	1
A platform for educational activities exists within the health service	Learners have access to appropriate facilities (e.g. library) Number of workstations available to learners	Structural	Survey	1
Teaching is effective; health service staff are not overburdened with learners; learners have access to senior/experienced clinicians; educators are able to respond to individual learners	Number of students completing clinical placements; number of placement days; proportion of learners to educators	Structural	Training provider data, health service data	3
Establish and maintain a supportive health service – university relationship	The existence of a partnership agreement covering resources, induction and orientation and processes for determining student satisfaction.	Structural	Health service report	4

Table 13: Optional indicators relevant to framework elements

Framework objective	Indicator	Indicator type[i][71]	Likely data source
Framework element 1: An organisational culture that values learning			
Educational requirements are always considered within the organisation	**Education is covered in depth in the mission, vision, strategy and other plans of the health service**	**Structural**	**Health service documents**
Health service staff participate in educational activities	Incentives exist for being an educator	Structural	Survey, health service data
Health service staff develop their skills as educators	Incentives exist for gaining education qualifications	Structural	Survey, health service data

[i] *Structural* indicators describe the type and amount of resources, management systems and policy guidelines that underpin the delivery of programmes or services. *Process* indicators describe the activities that constitute the programme or service. *Outcome* indicators describe the result, output or outcome of the programme or service.

Framework objective	Indicator	Indicator type[i][71]	Likely data source
Teaching and learning are acknowledged as legitimate activities that reduce time for patient care	**Staffing levels allow quarantined time for education activities**	**Structural**	**Health service data**
Facilities that allow teaching and learning activities to be conducted appropriately exist within the health service	Dedicated teaching facilities exist	Structural	Health service data
Management regularly considers education-related issues	**Education is included as a standing item on the agenda of senior management meetings**	**Process**	**Health service data**
Adequate time is allocated for education and learning	**Education KPIs are included in staff position descriptions**	**Process**	**HR data**
Staff develop and draw on their own evidence base for practice	Levels of reflective practice (individual level)	Process	Survey
A culture of institutional learning exists within each health service	Levels of audit/evaluation/feedback of all activities (institutional level)	Process	Health service data
A positive learning environment exists; communication works well within the health service; educators and learners feel valued	**Staff and learner satisfaction**	**Outcome**	**Survey**
Framework element 2: Best practice clinical practice			
Staff are assisted in identifying evidence to guide practice and implementing change to practice	Existence of tools to support evidence-based practice and decision making	Structural	Health service data
Effective collaboration between training providers and health services on matters relating to clinical education	Regular dialogue between training providers and health service	Structural	Survey
The health service provides clear guidelines for all activities, which serves as the basis for delivering consistent standards of service across the organisation	Existence of policies and procedures that are concise, clear, accessible, etc	Structural	Audit of health service documents
Policy and procedure documents are being regularly referred to and out-of-date information is being amended	**Up-to-date policies and procedures**	**Process**	**Audit, Survey**
Framework element 3: A positive learning environment			
Training providers have a mechanism to contribute to preparing the health service for learner cohorts and a mechanism for resolution of problems	Existence of point of contact for training providers	Structural	Survey
Training providers exchange information with the health service about learning objectives	**Existence of knowledge exchange mechanisms (between the training providers and the health service)**	**Structural**	**Survey**
Structured learning opportunities are available for all learners (as appropriate)	**Existence of tools to assess learner needs (self-efficacy test)**	**Structural**	**Health service data**

Framework objective	Indicator	Indicator type[i][71]	Likely data source
Learners are appropriately welcomed and assisted in adapting to each new environment	**Existence of orientation programmes**	**Structural**	**Health service data**
Learners reflect on their learning needs and achievements	Use of learning contracts/portfolios	Process	Survey
Training providers contribute to up-skilling of clinical education staff	Number of health service educators receiving university/RTO training in developing their educational skills	Process	Survey, HR data
Patients are not "overburdened" with learners	Patient satisfaction (with respect to learners and educators, not clinical treatment)	Outcome	Survey
Learners have continuity of learning experiences	Existence of mechanisms for maintaining regular contact with learners	Structural	Health service data
Learners have access to as much continuity of learning as practicable	Number of orientation-type activities attended and time spent in orientation-type activities	Process	Survey, health service data
Learners have access to as much continuity of learning as practicable	Increased learner *productivity* (for undergraduates, this will be increased learning; for early-graduates this will be clinical practice)	Outcome	Survey, Health service data, training provider data
Appropriate emphasis is given to the needs of all learners	Equal emphasis on different learner cohorts	Outcome	Survey
Framework element 4: A supportive health service-training provider relationship			
Health service educators are able to access course information and other resources relevant to clinical education from training providers	**Existence of resource exchange mechanisms (between the training providers and the health service)**	**Structure**	**Survey**
Health service educators are involved in preparing learners for placement	Number of clinicians teaching into training provider courses	Process	University data
Collaborative, cooperative relationship between training providers and health services	Stakeholder perception of relationship	Outcome	Survey
Framework element 5: Effective communication processes			
The health service encourages comment and feedback and provides mechanisms for change	**Existence of feedback mechanisms and measures**	**Structural**	**Health service data**
Framework element 6: Appropriate resources and facilities			
Facilities are shared equally and openly between learners of different disciplines and different levels	**Facility booking mechanisms exist**	**Structural**	**Health service data**
The culture of learning applies to all staff	Level of self-directed learning	Outcome	Survey

6 Discussion and Recommendations

Over the course of six months, this project collected data from stakeholders involved in the clinical education of health professionals in Victoria. This included university clinical education coordinators, health service clinical and management staff, and undergraduate and early-graduate learners. These data – particularly those collected through the case studies and the interviews with university clinical education coordinators – informed the development of a framework for best practice in clinical learning environments. The framework was also informed by the findings of the literature review, particularly the few existing frameworks that might serve as examples, or possibly even as templates.

Overall participation in the project was very good, probably reflecting the importance of this issue to all stakeholders. Of the 24 possible university programme participants, 23 were involved in this project. In relation to hospitals, 29 out of the 30 sites invited to participate had at least one department/discipline participating in the project. Of particular note, the case study sites were very cooperative throughout the process, with many staff and learners participating in discussions. All sites also provided a coordinator to organise the site visit and serve as liaison between the Project Team and the relevant hospital staff.

From the outset, it was clear that many people involved in clinical education are strongly in favour of some type of framework for clinical learning environments. Stakeholders were positive about a project that examines quality issues in relation to clinical education and felt such a project was long overdue. They noted that discussions about the number of student places in health professional courses have historically been a conversation only between the Australian Government (which funds the places) and universities that run the courses. Health services, on the other hand – whose core business is patient care, not education – have not been part of this dialogue. The result is that clinical education, which sits on the boundary between the higher education and health service sectors, is overlooked to some extent by both sectors and treated as someone else's responsibility.

In this context, a framework that focuses on clinical learning environments is very important. Firstly, it identifies the key elements that need to be addressed in developing and/or maintaining high quality clinical learning environments, providing some direction about where resources might most profitably be applied. Secondly, it defines responsibilities for various stakeholders and provides a mechanism for accountability across the system. Finally, it provides a consistent basis for negotiations between the three main parties – health services, training providers and government – that have a shared responsibility for the successful delivery of clinical education for health professionals.

However, the framework will be little more than rhetoric if the system is not resourced properly to achieve the desired objectives. Throughout the case studies, informant after informant explained that their teaching activities do not have protected time allocated to them, let alone any protected time for the staff member's own professional development and ongoing education. Patient loads for staff with educational responsibilities do not appear to take account of the time required for non-patient activities. Staff frequently used the terms '*pro bono*' and 'in my own time' to describe how clinical education is delivered. However, as this project did not involve a systematic analysis of staff workloads, the extent to which perception matches reality is not clear.

Nevertheless, assuming this is the case across the system and at least some clinical education is delivered effectively *pro bono*, then there is no further capacity in the system as it is currently configured. The only way to increase capacity – both for increased numbers of learners and to implement the elements of the best practice framework – is to make sure clinical education activities are accounted for in the overall workload of staff. Therefore, implementation of the framework requires government and health service management to balance, more effectively, the relative priority of providing patient care and clinical education. Furthermore, university staff need to work more closely with hospital staff to establish clinical

placement activities that are more feasible than existing arrangements, given the current health service limitations.

A window of opportunity now exists to bring about the necessary changes, to both increase capacity and improve quality in the clinical education system. The Council of Australian Governments (COAG) agreement of November 2008 included a large increase in funding to support clinical education. This funding may be intended for infrastructure and facilities to support and enhance clinical education, and these facilities are important and necessary. However, some of this funding should also be targeted to creating enabling mechanisms and properly resourcing educational activities. The availability of adequate funds to roster additional staff for clinical duties will likely do more to improve clinical education capacity and quality than any other application of these funds. Importantly, the existence of a framework for best practice in clinical learning environments will provide a tool for Victorian health services to assess their current arrangements for delivery of clinical education and allow them to make informed, evidence-based requests to government for additional funds to supplement and improve those arrangements. This will augment the substantial investment made by the Victorian State Government in recent years to enhance the quality of teaching, training and research facilities in Victorian health services[72].

In light of these points, five key recommendations are presented in relation to this report and the implementation of the best practice framework contained therein. The recommendations are presented in no particular order.

Recommendation 1:

This report should be publicly available.

In commissioning this project, the DHS's main objective was the development of a best practice framework. That section of the report has been written as a stand-alone document to facilitate its wider dissemination and implementation. However, the many stakeholders and informants who participated in this project expressed their interest in being able to read the whole report. The framework was developed based on information collected through the literature review, interviews with university clinical education coordinators and case studies and those sections of the report contain information that stakeholders in clinical education would find of interest.

Recommendation 2:

The best practice framework should be implemented in a staged process over the next three years.

Following an appropriate information campaign, the framework should be rolled-out state-wide to all public hospitals that are involved in clinical education of health professionals, for a two-year trial period. During this time, health services should report to DHS against the four structural measures listed in Table 12. Health services should also be encouraged to collect as much data as possible against other measures suggested in Table 13, to assist in the review of the framework at the end of the trial period.

DHS should invite a small number of health services to participate in a longitudinal evaluation of the framework's implementation. These sites should be representative of the range of Victoria's health services, in terms of size, location and socioeconomic indicators. These sites should be asked to collect baseline data at the start of the roll-out process, as well as data against the Table 12 and Table 13 indictors over the following two years.

After two years, the framework should be evaluated in a formal review process that looks at both the framework elements and the measures. Further implementation beyond the initial two years should be based on feedback received during the review.

The roll-out of the framework is expected to take six to eight months and the review of the two year trial period up to four months, accounting for the three years suggested in this recommendation.

Recommendation 3:

The best practice framework should be tested for its applicability in non-hospital settings and for health professions not included in this project.

DHS should establish a process for reviewing this framework for its applicability beyond the parameters used to develop the framework. This could be done with a series of focus groups involving stakeholders from non-hospital settings or from other allied health disciplines. Focus groups could be real or virtual (similar to the SRG process used in this project) and would be asked to consider whether the elements of this framework are particularly problematic from their perspective or whether there are other elements that should be included.

Recommendation 4:

DHS should develop an online resource for health services to support the implementation of the framework and encourage exchange of resources and information.

The online resource should include information about this project and a link to this report, as well as information about the framework and its trial. Any templates or tools developed by DHS (or health services) that provide assistance in implementing elements of the framework or collecting data for reporting against indicators should be available on the site.

The site could also serve as an information exchange. Many health services that were not selected for case study indicated they have developed innovative clinical education practices they would be interested in sharing with other health services. The online resource could include a mechanism for registering information about such practices. A register of clinical education contacts at health services could also be part of this resource.

Recommendation 5:

Health services should use the framework to determine and prioritise their staffing, infrastructure, other resources and support requirements to achieve or maintain best practice in their clinical learning environments. These requirements should be communicated to DHS and to the training provider partners and should serve as the basis for ongoing partnership agreements and funding negotiations.

Many health services may already have a list of requirements and priorities. Using the framework to refine existing lists (or develop new lists) will facilitate consistency across the sector and provide benchmarks that inform all partners about what additional resources are expected to achieve.

7 Bibliography

1. Department of Human Services. *Accreditation requirements for clinical placements*, 2005. (Report prepared by Human Capital Alliance (International) Pty Ltd).

2. Spencer, J., *Learning and teaching in the clinical environment.* BMJ, 2003. **326**(7389): p. 591-4.

3. Chan, D., *Development of the Clinical Learning Environment Inventory: using the theoretical framework of learning environment studies to assess nursing students' perceptions of the hospital as a learning environment.* J Nurs Educ, 2002. **41**(2): p. 69-75.

4. Department of Human Services. *Assessment of current and projected allied health clinical placement activity across Victorian health services. Final Report*, 2007. (Report prepared by Healthcare Management Advisors Pty Ltd).

5. Department of Human Services. *Career Decision Making by Doctors in their Postgraduate Years - A Literature Review*, 2002. (Report prepared by Australian Medical Workforce Advisory Committee).

6. Department of Human Services. *Clinical Placements in Victoria: Establishing a Statewide Approach*, 2007. (Report prepared by Department of Human Services).

7. Department of Human Services. *Clinical Skills Education Requirements of the Health Professions in Victoria*, 2003. (Report prepared by Postgraduate Medical Council of Victoria).

8. Roff, S., McAleer, S., Harden, R.M., Al-Qahtani, M., Ahmed, A.U., Deza, H., Groenen, G. and Primparyon, P., *Development and validation of the Dundee Ready Education Environment Measure (DREEM).* Medical Teacher, 1997. **19**: p. 5.

9. Roff, S., McAleer, S. and Skinner, A., *Development and validation of an instrument to measure the postgraduate clinical learning and teaching educational environment for hospital-based junior doctors in the UK.* Med Teach, 2005. **27**(4): p. 326-31.

10. Chan, D., *Development of an innovative tool to assess hospital learning environments.* Nurse Educ Today, 2001. **21**(8): p. 624-31.

11. Dunn, S.V. and Burnett, P., *The development of a clinical learning environment scale.* J Adv Nurs, 1995. **22**(6): p. 1166-73.

12. Survey Monkey, *Survey Monkey*. Cited 1 July, 2008. Available from: http://www.surveymonkey.com/Default.aspx.

13. Queensland Health, *Best practice for nurse/midwife clinical education*. Cited 11 July, 2008. Available from: http://www.phillipskpa.com.au/qldhealth/.

14. Frye, A.W., Hoban, J.D. and Richards, B.F., *Capturing the complexity of clinical learning environments with multiple qualitative methods.* Evaluation and health professions, 1993. **16**: p. 16.

15. Varma, R., Tiyagi, E. and Gupta, J.K., *Determining the quality of educational climate across multiple undergraduate teaching sites using the DREEM inventory.* BMC Med Educ, 2005. **5**(1): p. 8.

16. Sheehan, D., Wilkinson, T.J. and Billett, S., *Interns' participation and learning in clinical environments in a New Zealand hospital.* Acad Med, 2005. **80**(3): p. 302-8.

17. Dolmans, D., Schmidt, A., van der Beek, J., Beintema, M. and Gerver, W.J., *Does a student log provide a means to better structure clinical education?* Med Educ, 1999. **33**(2): p. 89-94.

18. Eaton, E., Henderson, A. and Winch, S., *Enhancing nurses' capacity to facilitate learning in nursing students: effective dissemination and uptake of best practice guidelines.* Int J Nurs Pract, 2007. **13**(5): p. 316-20.

19. McNamara, M.S., *Illuminating the essential elements of the role of the clinical placement co-ordinator: a phenomenological inquiry.* J Clin Nurs, 2007. **16**(8): p. 1516-24.

20. Andrews, G.J., Brodie, D.A., Andrews, J.P., Hillan, E., Gail Thomas, B., Wong, J. and Rixon, L., *Professional roles and communications in clinical placements: a qualitative study of nursing students' perceptions and some models for practice.* Int J Nurs Stud, 2006. **43**(7): p. 861-74.

21. Anderson, G. and Walberg, H., *Classroom climate and group learning.* International Journal of Science Education, 1968. **2**: p. 5.

22. Moos, R., *The social climate scales: an overview.* 1974, Palo Alto, California: Consulting Psychologists Press.

23. *Development and validation of the extended practicum learning environment inventory.* Cited 12 July, 2008. Available from: http://scs.une.edu.au/CF/Papers/pdf/Kennedy.pdf.

24. Roff, S., *The Dundee Ready Educational Environment Measure (DREEM)--a generic instrument for measuring students' perceptions of undergraduate health professions curricula.* Med Teach, 2005. **27**(4): p. 322-5.

25. Saarikoski, M., Leino-Kilpi, H. and Warne, T., *Clinical learning environment and supervision: testing a research instrument in an international comparative study.* Nurse Educ Today, 2002. **22**(4): p. 340-9.

26. Duchscher, J.E., *Out in the real world: newly graduated nurses in acute-care speak out.* J Nurs Adm, 2001. **31**(9): p. 426-39.

27. United Kingdom Department of Health, *Preparation of mentors and teachers: a new framework of guidance.* Cited 14 July, 2008. Available from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007606.

28. Department of Human Services*. International approaches to undergraduate clinical training*, 2005. (Report prepared by Monash University).

29. Fraser, B.J., *Classroom environment instruments: development, validity and applications.* Learning Environments Research, 1998. **1**: p. 26.

30. Papp, I., Markkanen, M. and von Bonsdorff, M., *Clinical environment as a learning environment: student nurses' perceptions concerning clinical learning experiences.* Nurse Educ Today, 2003. **23**(4): p. 262-8.

31. Parsell, G. and Bligh, J., *Recent perspectives on clinical teaching.* Med Educ, 2001. **35**(4): p. 409-14.

32. Kaufman, D.M., *ABC of learning and teaching in medicine: applying educational theory in practice.* British Medical Journal, 2003. **326**: p. 3.

33. Hirsh, D.A., Ogur, B., Thibault, G.E. and Cox, M., *"Continuity" as an organizing principle for clinical education reform.* N Engl J Med, 2007. **356**(8): p. 858-66.

34. Lofmark, A. and Wikblad, K., *Facilitating and obstructing factors for development of learning in clinical practice: a student perspective.* J Adv Nurs, 2001. **34**(1): p. 43-50.

35. Gordon, J., Hazlett, C., Ten Cate, O., Mann, K., Kilminster, S., Prince, K., O'Driscoll, E., Snell, L. and Newble, D., *Strategic planning in medical education: enhancing the*

learning environment for students in clinical settings. Med Educ, 2000. **34**(10): p. 841-50.

36. Chan, D.S., *Combining qualitative and quantitative methods in assessing hospital learning environments.* Int J Nurs Stud, 2001. **38**(4): p. 447-59.

37. Chan, D.S., *Associations between student learning outcomes from their clinical placement and their perceptions of the social climate of the clinical learning environment.* Int J Nurs Stud, 2002. **39**(5): p. 517-24.

38. Chan, D.S. and Ip, W.Y., *Perception of hospital learning environment: a survey of Hong Kong nursing students.* Nurse Educ Today, 2007. **27**(7): p. 677-84.

39. Irby, D.M., *Teaching and learning in ambulatory care settings: a thematic review of the literature.* Acad Med, 1995. **70**(10): p. 898-931.

40. McKenna, L.G., Wray, N. and McCall, L., *Exploring continuous clinical placement for undergraduate students.* Adv Health Sci Educ Theory Pract, 2008.

41. Prideaux, D., Alexander, H., Bower, A., Dacre, J., Haist, S., Jolly, B., Norcini, J., Roberts, T., Rothman, A., Rowe, R. and Tallett, S., *Clinical teaching: maintaining an educational role for doctors in the new health care environment.* Med Educ, 2000. **34**(10): p. 820-6.

42. Rolfe, I.E. and Sanson-Fisher, R.W., *Translating learning principles into practice: a new strategy for learning clinical skills.* Med Educ, 2002. **36**(4): p. 345-52.

43. Dornan, T., Boshuizen, H., King, N. and Scherpbier, A., *Experience-based learning: a model linking the processes and outcomes of medical students' workplace learning.* Med Educ, 2007. **41**(1): p. 84-91.

44. Bowen, J.L. and Irby, D.M., *Assessing quality and costs of education in the ambulatory setting: a review of the literature.* Acad Med, 2002. **77**(7): p. 621-80.

45. Andrews, M. and Wallis, M., *Mentorship in nursing: a literature review.* J Adv Nurs, 1999. **29**(1): p. 201-7.

46. Gray, M.A. and Smith, L.N., *The qualities of an effective mentor from the student nurse's perspective: findings from a longitudinal qualitative study.* J Adv Nurs, 2000. **32**(6): p. 1542-9.

47. Andrews, G.J., Brodie, D.A., Andrews, J.P., Wong, J. and Gail Thomas, B., *Improving first-destination recruitment: nursing students' perceptions of three initiatives in London, England.* J Nurs Manag, 2005. **13**(4): p. 345-55.

48. O'Shea, E., *Self-directed learning in nurse education: a review of the literature.* J Adv Nurs, 2003. **43**(1): p. 62-70.

49. Brown, H. and Edelmann, R., *Project 2000: a study of expected and experienced stressors and support reported by students and qualified nurses.* J Adv Nurs, 2000. **31**(4): p. 857-64.

50. Ceslowitz, S.B., *Burnout and coping strategies among hospital staff nurses.* J Adv Nurs, 1989. **14**(7): p. 553-8.

51. Jones, M.C. and Johnston, D.W., *Distress, stress and coping in first-year student nurses.* J Adv Nurs, 1997. **26**(3): p. 475-82.

52. Chan, D.S., *The relationship between student learning outcomes from their clinical placement and their perceptions of the social climate of the clinical learning environment.* Contemp Nurse, 2004. **17**(1-2): p. 149-58.

53. Lee, W.S., Cholowski, K. and Williams, A.K., *Nursing students' and clinical educators' perceptions of characteristics of effective clinical educators in an Australian university school of nursing.* J Adv Nurs, 2002. **39**(5): p. 412-20.

54. Decker, S., Sportsman, S., Puetz, L. and Billings, L., *The evolution of simulation and its contribution to competency.* J Contin Educ Nurs, 2008. **39**(2): p. 74-80.

55. Flinders University, *Model for best practice in workplace learning*. Cited 12 July, 2008. Available from: http://www.flinders.edu.au/teach/t4l/practicum/examples/bestpractice.php.

56. Queensland Occupational Therapist Fieldwork, *Clinical Educators Resource Kit*. Cited 12 July, 2008. Available from: http://www.qotfc.edu.au/resource/index.html.

57. Australian Nursing and Midwifery Council, *Registered nurse and midwife education in Australia*. Cited 3 December, 2008. Available from: http://www.anmc.org.au/docs/guidelines_and_position_statements/Registered%20Nurse%20and%20Midwife%20Education%20in%20Australia.pdf.

58. Australian Nursing and Midwifery Council, *Delegation and supervision for nurses and midwives*. Cited 3 December, 2008. Available from: http://www.anmc.org.au/position_statements_guidelines/guidelines.php.

59. Nurses Board of Victoria, *Guidelines: Delegation and supervision for registered nurses and midwives*. Cited 3 December, 2008. Available from: http://www.nbv.org.au/c/document_library/get_file?p_l_id=10327&folderId=13486&name=DLFE-359.pdf.

60. Nurses Board of Victoria, *Principles Regarding Shifts Undertaken During Clinical Placement*. Cited 3 December, 2008. Available from: http://www.nbv.org.au/c/document_library/get_file?p_l_id=10327&folderId=13486&name=DLFE-365.pdf.

61. ACT Health*. Discussion Paper: Allied Health Clinical Education Placements in ACT Health*, 2007. (Report prepared by Allied Health Advisors Office).

62. *Project 2000: A new preparation for practice*. Cited 16 July, 2008. Available from: http://www.nmc-uk.org/aFrameDisplay.aspx?DocumentID=4146.

63. United Kingdom Department of Health *Placements in Focus: Guidance for education in practice for health care professionals.* Cited 16 July, 2008. Available from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009511.

64. An Bord Altranais*. Guidelines on the key points that may be considered when developing a quality clinical learning environment*, 2003. (Report prepared by An Bord Altranais).

65. Austin Hospital, *Austin Hospital Home Page*. Cited 8 Jan, 2009. Available from: http://prod.austin.roadhouse.com.au/Content.aspx?topicID=160.

66. Department of Human Services*. Your Hospitals: a report on Victoria's public hospitals - July 2007 to Jun 2008*, 2008. (Report prepared by Department of Human Services).

67. Barwon Health, *Barwon Health Home Page*. Cited 26 Nov, 2008. Available from: http://www.barwonhealth.org.au/services/hospital/Default,category,hospital.aspx.

68. Nurses Board of Victoria, *Approved courses leading to registration and endorsement of Division 2 nurses*. Cited 16 December, 2008. Available from: http://www.nbv.org.au/web/guest/courses-division-2.

69. Laedal, *Laerdal Patient Simulators*. Cited 16 December, 2008. Available from: http://www.laerdal.com/document.asp?docid=1022609.

70. Sweet, M., *Development of strategies to encourage adoption of best evidence into practice in Australia: workshop overview.* Med J Aust, 2004. **180**(6 Suppl): p. S45-7.

71. Mainz, J., *Defining and classifying clinical indicators for quality improvement.* Int J Qual Health Care, 2003. **15**(6): p. 523-30.

72. Department of Human Services, *Clinical Placements In Victoria*. Cited 4 Jan, 2009. Available from: http://www.health.vic.gov.au/workforce/placements.htm.

8 Appendices

Appendix 1. Undergraduate survey questions

Undergraduate survey item	Item number (in survey monkey)	Category	Not applicable option provided
The orientation I received to the workplace for this placement was adequate	9.01	A	
The atmosphere during the ward teaching was conducive to learning	11.07	A	
This placement was well timetabled	11.09	A	
Teachers favoured some students over others	12.01	A	yes
I was introduced to relevant members of the team	13.01	A	yes
The atmosphere during lectures/tutorials was conducive to learning	13.02	A	yes
I felt my ideas and opinions were respected by the teachers	14.05	A	
There were opportunities for me to develop interpersonal skills	14.09	A	
I felt comfortable socially in teaching sessions	14.12	A	
I felt able to ask the questions I want	15.01	A	
I found the clinical placement experience disappointing	15.05	A	
The good aspects outweighed the bad aspects of the placement	15.09	A	
The atmosphere motivated me as a learner	15.10	A	
I would be keen to return to that hospital for further placements or to work there	15.14	A	
The learning facilities provided for students (e.g. desk space, computers, library access) were adequate	16.01	A	yes
The learning aids provided for students (e.g. simulation, models, specialised equipment were adequate)	16.02	A	yes
The learning spaces provided for students (e.g. tutorial rooms, breakout rooms, etc.) were adequate	16.03	A	yes
Other facilities provided for students (e.g. tea room, lounge, etc) were adequate	16.04	A	yes
I was encouraged to participate in clinical activities	9.02	L	
The teaching was well focused	9.05	L	
I was encouraged to participate in tutorials	10.02	L	yes
The teaching was often stimulating	11.03	L	
The teaching was student-centred	11.10	L	
The placement helped to develop my competence	11.12	L	
The teaching helped to develop my confidence	14.02	L	
The placement time was put to good use	14.03	L	
The teaching during the placement over-emphasised rote learning of facts	14.04	L	
I was taught by a number of different teachers	14.08	L	
The university and the clinical placement provider were well coordinated	14.13	L	
The students were treated as learners, not workers	14.14	L	
The placement gave me the opportunity to learn with students from other disciplines	14.15	L	
The teaching and learning activities provided me with the opportunity to fulfil the objectives of the placement	15.03	L	
I was exposed to a number of different health professional disciplines during the course of this placement	15.04	L	
I was clear about the learning objectives of the placement	15.06	L	
The teaching encouraged me to be an active learner	15.11	L	
The amount of supervision I received was about right	15.13	L	
The university adequately prepared me for this clinical placement	9.06	SA	
There was someone to contact at the university in relation to this clinical placement	10.03	SA	yes
The lectures and practical sessions I had undertaken prior to this placement adequately prepared me for this placement	11.01	SA	
I was/am confident about passing the assessment relevant to this placement	11.06	SA	
I felt I was being well prepared for my profession	14.01	SA	
I learned about the role of empathy in my profession during this	14.10	SA	

Undergraduate survey item	Item number (in survey monkey)	Category	Not applicable option provided
placement			
The placement helped me to further develop clinical reasoning skills	15.08	SA	
Much of what I learned seems relevant to a career in healthcare	15.12	SA	
I have encountered racism and/or cultural bias during this placement	9.07	SS	
There was a good support system for students who encountered difficulties in relation to the placement	10.01	SS	yes
I have encountered age bias during this placement	10.04	SS	yes
There was adequate university support during this placement	11.08	SS	
I was rarely bored on this placement	11.11	SS	
I have encountered sexual discrimination during this placement	11.13	SS	
If I had problems with my clinical placement, I could discuss these with someone at the hospital during the placement	12.02	SS	yes
If I had problems with my clinical placement, I could discuss these with someone at my university during the placement	12.03	SS	yes
I felt isolated during this placement	14.06	SS	
The teachers were knowledgeable	9.03	T	
The teachers demonstrated good communication skills with patients	9.04	T	
The teachers had good bedside manner	11.02	T	
The teachers ridiculed the students	11.04	T	
The teachers were authoritarian	11.05	T	
The teachers were good at providing feedback to students	14.07	T	
The teachers provided constructive criticism	14.11	T	
The students irritated the teachers	15.02	T	
The teachers were well prepared for their teaching sessions	15.07	T	

L - Perceptions of learning
T - Perceptions of teachers
A - Perceptions of atmosphere
SA - Academic self-perceptions
SS - Social self-perceptions

Appendix 2. Early-graduate survey questions

Early-graduate survey item	Item number in survey monkey	Category	Not applicable option provided
My undergraduate clinical placements/rotations influenced my decision about my first post-qualification position	10.01	n/a	
I avoided seeking employment at certain sites because I had negative training experiences at those sites	13.11	n/a	
List the top three factors that influenced your decision for your first post-qualification position	8.00	n/a	
Comment on the reasons why each was a factor	9.00	n/a	
My work hours exceed those stated in my contract of employment	10.03	RA	
The orientation/induction I received to this workplace was adequate	10.06	RA	
I have an appropriate level of responsibility in my current position	10.07	RA	
I am treated like a student	10.08	RA	
I have to perform inappropriate tasks	12.02	RA	
I have to perform tasks outside of my clinical expertise/training	12.04	RA	
I have access to protocols relevant to my role	12.07	RA	yes
I feel part of a team in this position	14.01	RA	yes
I have opportunities to acquire the appropriate clinical experience for my level	14.02	RA	
My workload in this position is manageable	14.04	RA	
The training in this role makes me feel ready to advance in my career	14.06	RA	
Senior colleagues promote an atmosphere of mutual respect	14.12	RA	
I feel my ideas and opinions are respected by my colleagues	14.13	RA	
The good aspects outweigh the bad aspects of my job	14.16	RA	
My current workplace allows me to work with heath professionals from a range of other disciplines	10.02	SS	
I have good collaboration with other professionals of my discipline at my level	11.02	SS	
I have encountered racism/cultural bias in my work environment	12.01	SS	
I have encountered sexual discrimination in my work environment	12.06	SS	
I have access to careers advice	13.01	SS	
My work environment (e.g. desk space, computer, library access) is adequate for me to do my job	13.02	SS	
Other facilities provided for staff (e.g. tea room, lounge etc) are adequate	13.03	SS	
I feel physically safe in my work environment	13.07	SS	
There is a no-blame culture in my workplace	13.08	SS	
I have been subject to ridicule in my workplace	13.09	SS	
I have encountered age bias in this workplace	13.12	SS	
My senior colleagues have good mentoring skills	14.07	SS	
I get a lot of satisfaction out of my present job	14.08	SS	
Support services are provided for junior clinicians who encounter difficulties in their job	14.10	SS	
I feel socially accepted at work	14.14	SS	
I have been subject to bullying in my workplace	14.15	SS	
My senior colleagues establish clear expectations	10.04	T	
I have allocated time for study in this position	10.05	T	
I have access to clinical supervision at all times	11.01	T	
My senior colleagues have good communication skills	12.03	T	
I am able to participate in professional development events	12.05	T	
My senior colleagues are enthusiastic	12.08	T	
I feel I am able to ask the questions I would like to	12.09	T	
I have access to professional development programmes and resources relevant to my needs	13.04	T	
I get regular feedback from senior colleagues	13.05	T	
My senior colleagues demonstrate good professional standards	13.06	T	
My senior colleagues have good teaching skills	13.10	T	

Early-graduate survey item	Item number in survey monkey	Category	Not applicable option provided
My senior colleagues are accessible	14.03	T	
Senior staff utilise teaching opportunities effectively	14.05	T	
My senior colleagues encourage me to be an independent learner	14.09	T	
Senior colleagues provide me with constructive feedback on my strengths and weaknesses	14.11	T	
The quality of clinical supervision is good	15.01	T	yes

T = Perception of teaching
RA = Perceptions of role autonomy
SS = Perceptions of social support

Appendix 3. Hospital sites undergraduates nominated as their placement locations

Hospital	Number of undergraduate respondents
Austin Health	42
Bairnsdale Regional Health Service	1
Ballarat Health Service	7
Ballina Community Health	1
Barwon Health	34
Bayside Health - Alfred Hospital	46
Bayside Health - Caulfield GMC	5
Bellbird Private Hospital	2
Bendigo Health Care Group	9
Brimbank City Council	1
Broadmeadows Health Service	2
Bundoora Extended Care Centre	1
Cabrini Hospital	18
Canberra Hospital	2
Casey Hospital	1
Central Gippsland - Sale	5
Colac Area Health	2
Dame Phyllis Frost Correctional Facility	1
Delmont Private Hospital	1
Department of Education and Early Childhood Development	1
Eastern Health - Angliss Hospital	7
Eastern Health - Box Hill Hospital	21
Eastern Health - Maroondah Hospital	9
Eastern Health - Peter James Centre/Wantirna Health	5
Echuca Regional Health	1
Epworth Health Care	14
Essendon Private Hospital and Arcadia Aged Care Facility	1
Flinders Medical Centre	1
Gippsland Southern Health Service	1
Goulburn Valley Health	6
Hamilton Base Hospital	1
Harvester Clinic	1
Hepburn Health Services Trentham Hospital and Hostel	1
Horsham Base Hospital	1
John Fawkner - Private	1
John Hunter Hospital, Newcastle	1
Knox Community Health Service	1
Knox Private Hospital	7
Kyneton District Health Service	1
LaTrobe Private	1
Latrobe Regional Hospital	14
Liverpool Hospital Sydney	1
Masada Private Hospital	1
Melbourne Clinic	2
Melbourne Health	39
Melton Health Clinic	1
Mercy Hospital for Women	3
Mercy Hospital Werribee	7
Mildura Base Hospital	5
Millicent Hospital	1
Mt. Alexander Hospital, Castlemaine	1
Muscular Dystropy Association Australia	2
Northeast Health Wangaratta	2
Northern Hospital	14
Orbost Regional Health	1
ORYGEN Youth Health	1
Peninsula Health	20
Peninsula Private	1
Peter MacCallum	4
Portland District Health	3
Queen Elizabeth Centre	1
Recovre	1
Royal Children's Hospital	10

Hospital	Number of undergraduate respondents
Royal District Nursing Service	1
Royal Hobart Hospital	1
Royal Park (Extended Care and Rehabilitation Service)	1
Royal Perth Hospital	1
Royal Talbot Hospital	2
Royal Women's Hospital	4
Salvation Army Office of housing	1
Sandringham District Memorial Hospital	3
South West Healthcare	3
Southern Health - Dandenong Hospital	17
Southern Health - Monash Medical Centre	36
St John of God	18
St Vincent's Health	60
Swan Hill District Hospital	1
The Avenue Private - Windsor	1
The Foster Care Association of Victoria	1
The Kingston Centre	1
The Nepean School	1
The Victorian Rehabilitation Centre	1
Thomas Embling Hospital	2
Victoria Clinic	1
West Gippsland Healthcare Group	5
Western Health - Sunshine Hospital	11
Western Health - Western Hospital	14
Western Health - Williamstown Hospital	3
Wodonga Regional Health Service	1
Miscellaneous	9
Total	**599**

Appendix 4. Correlations between survey items and CLEAR score for undergraduates

Undergraduate survey item	Spearman Rho	Significance
The atmosphere motivated me as a learner.	0.769	p<0.001
The good aspects outweighed the bad aspects of the placement.	0.754	p<0.001
The teaching helped to develop my confidence.	0.722	p<0.001
The teaching encouraged me to be an active learner.	0.711	p<0.001
The placement time was put to good use.	0.710	p<0.001
The teaching was well focused.	0.709	p<0.001
The amount of supervision I received was about right.	0.708	p<0.001
I would be keen to return to that hospital for further placements or to work there.	0.708	p<0.001
The teaching and learning activities provided me with the opportunity to fulfil the objectives of the placement.	0.691	p<0.001
The placement helped to develop my competence.	0.690	p<0.001
I felt I was being well prepared for my profession.	0.685	p<0.001
The teachers were good at providing feedback to students.	0.685	p<0.001
The teaching was student-centred.	0.666	p<0.001
I was encouraged to participate in clinical activities.	0.665	p<0.001
I felt comfortable socially in teaching sessions.	0.659	p<0.001
The atmosphere during the teaching sessions involving patients was conducive to learning.	0.655	p<0.001
The placement helped me to further develop clinical reasoning skills.	0.644	p<0.001
Much of what I learned seems relevant to a career in healthcare.	0.641	p<0.001
I felt comfortable about asking the questions I wanted to.	0.637	p<0.001
The teachers provided constructive criticism.	0.631	p<0.001
The teachers were well prepared for their teaching sessions.	0.616	p<0.001
I felt my ideas and opinions were respected by the teachers.	0.616	p<0.001
The teachers demonstrated good communication skills with patients.	0.616	p<0.001
The teachers had good "bedside manner".	0.601	p<0.001
I was rarely bored on this placement.	0.600	p<0.001
There was a good support system for students who encountered difficulties in relation to the placement.	0.594	p<0.001
The university and the clinical placement provider were well coordinated.	0.594	p<0.001
There were opportunities for me to develop interpersonal skills.	0.588	p<0.001
The teachers were knowledgeable.	0.585	p<0.001
If I had problems with my clinical placement, I could discuss these with someone at the hospital during the placement.	0.577	p<0.001
The teaching was often stimulating.	0.577	p<0.001
This placement was well timetabled.	0.573	p<0.001
I was introduced to relevant members of the team.	0.562	p<0.001
The orientation I received to the workplace for this placement was adequate.	0.543	p<0.001
I was/am confident about passing the assessment relevant to this placement.	0.517	p<0.001
I was clear about the learning objectives of the placement.	0.508	p<0.001
The learning aids provided for students (e.g. simulation, models, specialised equipment) were adequate.	0.489	p<0.001
The university adequately prepared me for this clinical placement.	0.479	p<0.001
There was adequate university support during this clinical placement.	0.478	p<0.001
Other facilities provided for students (e.g. tea room, lounge, etc) were adequate.	0.473	p<0.001
I learned about the role of empathy in my profession during this placement.	0.463	p<0.001
There was someone to contact at the university in relation to this clinical placement.	0.452	p<0.001
Students were treated as learners not workers.	0.449	p<0.001

Undergraduate survey item	Spearman Rho	Significance
The atmosphere during lectures/tutorials was conducive to learning.	0.442	p<0.001
The learning spaces provided for students (e.g. tutorial rooms, breakout rooms, etc) were adequate.	0.438	p<0.001
I was exposed to a number of different health professional disciplines during the course of this placement.	0.424	p<0.001
The learning facilities provided for students (e.g. desk space, computers, library access) were adequate.	0.423	p<0.001
The teachers had good "bedside manner".	0.402	p<0.001
The lectures and practical sessions I had undertaken prior to this placement adequately prepared me for this placement.	0.396	p<0.001
If I had problems with my clinical placement, I could discuss these with someone at my university during the placement.	0.378	p<0.001
The placement gave me opportunity to learn with students from other disciplines.	0.232	p<0.001
I was taught by a number of different teachers.	0.160	p<0.001
The teaching during the placement over-emphasised rote learning of facts.	-0.145	p<0.001
I have encountered sexual discrimination in this placement.	-0.317	p<0.001
I have encountered racism and/or cultural bias during this placement.	-0.364	p<0.001
I have encountered age bias during this placement.	-0.441	p<0.001
The teachers were authoritarian.	-0.444	p<0.001
Teachers favoured some students over others.	-0.499	p<0.001
The students irritated the teachers.	-0.562	p<0.001
The teachers ridiculed the students.	-0.571	p<0.001
I felt isolated during this placement.	-0.702	p<0.001
I found the clinical placement experience disappointing.	-0.776	p<0.001

Appendix 5. Correlations between survey items and CLEAR score for early-graduates

Early-graduate survey item	Spearman Rho	Significance
Senior colleagues promote an atmosphere of mutual respect.	0.748	p<0.001
My senior colleagues have good mentoring skills.	0.740	p<0.001
Senior staff utilise teaching opportunities effectively.	0.738	p<0.001
My senior colleagues have good teaching skills.	0.731	p<0.001
My senior colleagues demonstrate good professional standards.	0.720	p<0.001
My senior colleagues are accessible.	0.706	p<0.001
I feel I am able to ask questions I would like to.	0.700	p<0.001
I feel my ideas and opinions are respected by my colleagues.	0.679	p<0.001
I get regular feedback from senior colleagues.	0.675	p<0.001
Senior colleagues provide me with constructive feedback on my strengths and weaknesses.	0.674	p<0.001
I have access to professional development programmes and resources relevant to my needs.	0.671	p<0.001
My senior colleagues establish clear expectations.	0.665	p<0.001
I have opportunities to acquire the appropriate clinical experience for my level.	0.658	p<0.001
I get a lot of satisfaction out of my present job.	0.654	p<0.001
My senior colleagues are enthusiastic.	0.651	p<0.001
My senior colleagues have good communication skills.	0.644	p<0.001
I feel part of a team in this position.	0.639	p<0.001
The quality of early-graduate clinical supervision is good.	0.636	p<0.001
My senior colleagues encourage me to be an independent learner.	0.633	p<0.001
The professional development in this role makes me feel ready to advance in my career.	0.612	p<0.001
I am able to participate in professional development events.	0.578	p<0.001
I feel physically safe in my work environment.	0.572	p<0.001
I have an appropriate level of responsibility in my current position.	0.572	p<0.001
My workload in this position is manageable.	0.570	p<0.001
I have access to clinical supervision at all times.	0.570	p<0.001
The good aspects outweigh the bad aspects of my job.	0.553	p<0.001
I have allocated time for professional development in this position.	0.510	p<0.001
Support services are provided for junior clinicians who encounter difficulties in their job.	0.505	p<0.001
I have good collaboration with other professionals of my discipline at my level.	0.502	p<0.001
There is a no-blame culture in my workplace.	0.500	p<0.001
I have access to careers advice.	0.466	p<0.001
The orientation/induction I received to this workplace was adequate.	0.465	p<0.001
I have access to protocols relevant to my role.	0.463	p<0.001
My work environment (e.g. access to desk space, computer, library) is adequate for me to do my job.	0.379	p<0.001
Other facilities provided for staff (e.g. tea room, lounge, etc) are adequate.	0.374	p<0.001
My current workplace allows me to work with health professionals from a range of other disciplines.	0.347	p<0.001
My undergraduate clinical placements/rotations influenced my decision about my first post-qualification position.	0.143	p<0.05
I have been subject to ridicule in my workplace.	0.000	p<0.001
I avoided seeking employment at certain sites because I had negative clinical training experiences at those sites.	-0.185	p<0.01
My work hours exceed those stated in my contract of employment.	-0.324	p<0.001
I am treated like a student.	-0.407	p<0.001
I have to perform tasks outside of my clinical expertise/training.	-0.430	p<0.001
I have encountered age bias in this work place.	-0.460	p<0.001
I have encountered racism/cultural bias in my work environment.	-0.515	p<0.001
I have encountered sexual discrimination in my work environment.	-0.536	p<0.001
I have to perform inappropriate tasks.	-0.539	p<0.001
I have been subject to bullying in my workplace.	-0.560	p<0.001
I feel socially accepted at work.	-0.574	p<0.001