REVIEW OF MEDICAL INTERN TRAINING

DISCUSSION PAPER

This discussion paper has been prepared as part of the Review of Medical Intern Training, which has been commissioned by the Australian Health Ministers' Advisory Council (AHMAC). The Review is being led by Independent Reviewers Professor Andrew Wilson and Dr Anne Marie Feyer.

This document may be downloaded from the Council of Australian Government's Health Council website at www.coaghealthcouncil.gov.au/medicalinternreview

February 2015

Australian Health Ministers' Advisory Council

Contents

ONE

Introduction

Medical education and training should prepare doctors who are capable of providing high quality, evidence-based and compassionate medical care over the course of decades of practice. They will practice in a continually changing social, economic and technological environment with increasing expectations from informed patients and increasing scrutiny of the quality and efficiency of their practice by funders, managers and government.

Health care in the developed world has undergone significant change in the past 50 years. These continuing changes have resulted in improved outcomes of medical care that have contributed to an extraordinary increase in life expectancy, and, for many, improved quality of life and less disability.

The health landscape nevertheless presents challenges for our health system, which must continue to deal with acute illness and medical emergencies while also responding to the growing burden of long term physical and mental illness and associated disability which are major drivers of healthcare demand.

Changes in the health landscape have spawned important differences in the demands placed on the health system, including more care being provided in public and private ambulatory settings, shorter stays in hospital; sicker inpatients with multiple illnesses; and an increasing focus on managing care across the continuum. The health system has attempted to cater for these changes by redesigning services. New service models aimed at integrating services, better managing health conditions before patients need the hospital system and continuing care after discharge, have contributed to an increasingly porous boundary between the primary (community) and secondary (hospital) care systems. Many new models of care are based on multidisciplinary teams, which may not always be medical-led.

The medical workforce has become more specialised, driven in part by advances in technology and the growing sophistication of knowledge and care within the different branches of medicine. On the one hand, specialisation has been a significant contributor to the remarkable improvements in population health outcomes in recent decades. On the other hand, increasing specialisation has also led to concerns, both in Australia and overseas, about the balance of specialisation and generalism in the health workforce mix in caring for the increasing number of people with multiple serious and complex conditions. It has also generated new types of health workers with specific roles and skills to assist in hi-tech care.

There have been vast improvements in our ability to diagnose, classify and stage different diseases through better imaging and laboratory technologies. As a result, the intensity in which patients are investigated and treated has increased across the spectrum of illness. This is the major driver of increased cost of health care along with population ageing and population growth. Many of these diagnostic technologies are becoming more mobile, allowing point of care testing or safer and less distressing bedside procedures (for example ultrasound guided intravenous line insertions).

Expectations of all stakeholders are changing. Medical graduates are expected to understand the modern health landscape, the rapidly evolving changes in health care and the roles of an increasingly sub-specialised workforce. They will also increasingly be expected (and expecting) to be able to use the latest technology in the provision of care.

Public and professional expectations of quality and safety in recent decades have led to more rigorous systems and governance of clinical practice. This has consequences for when and how new medical graduates may undertake diagnostic and treatment procedures. The expectation is that people will receive their care in systems that ensure their safety and the quality of the care, and explicitly recognises that this isn't the sole responsibility of any one health professional.

Expectations of the community and of individual patients are also changing. A more informed patient population is seeking a greater say in decisions about their care, reinforcing the need for doctors to be able to communicate effectively with them and with other members of the healthcare team.

The growing cost of health care, particularly in Australia where more than 65% of the cost is subsidised from public sources (i.e. taxation) has led to a heightened focus on the efficiency and value for the health dollar expenditure and driven the use of tools such as activity-based funding. Expenditure on medical training is a significant part of our investment in health care and it too is being subject to scrutiny in terms of efficiency and value for money.

Medical education, meanwhile, has evolved both in formality and structure to the current continuum of training from medical school through to qualification for independent practice. This means it can take up to 13 years to achieve recognition in some specialties. Not surprisingly this has driven interest in training models based on demonstration of achievement competencies rather than periods of training. Other developments include the greater use of sophisticated simulation learning centres which allow the doctor in training to experience and practice a range of skills and procedures without risk to the patient.

Within this context, the internship has remained an enduring part of the preparation for practice of medical graduates, as both the first postgraduate year of medical practice and a year of regulated and supervised training leading to general registration by the Medical Board of Australia (MBA).

There have been important changes to the structure and processes of the internship. It has acquired increasing formality and more structured educational components including, in many locations, the use of simulation as part of skills training. The roles of the Directors of Clinical Training or equivalent positions in supporting training and in coordinating the assessment of progress are now well established, albeit with variable levels of administrative support. There is now a set of nationally adopted intern outcome statements endorsed by the Medical Board of Australia and a standard assessment report is being rolled out across Australia. The state-based Postgraduate Medical Education Councils that oversee intern training are now accredited by the Australian Medical Council using standards equivalent to those applicable to universities and specialist colleges. Internship has also been impacted by broader work place reforms such as shorter working hours and restrictions on overtime. Despite these developments, however, internship is still broadly recognisable as the model introduced early last century.

This longevity of the internship system may be due to its actual or perceived success in assuring that doctors are safe to practise. Yet the system that junior doctors enter today requires significant further training and supervision before they are considered capable and safe for independent practice.

Internship, as the first postgraduate year of medical practice, has a number of other aims, including building general skills and supporting career decisions. Yet there is a paucity of evidence on the extent to which it delivers these intended outcomes.

The first year of postgraduate practice is unquestionably an important and often stressful transition for medical graduates entering the workforce. It is a time when doctors become inculcated into the work environment and further acculturated into their profession, while learning to be part of effective, multidisciplinary teams.

The foundational experiences of new graduates are critical to their development as doctors starting lifelong careers and as individuals working in sometimes fraught and emotive environments. How well are we supporting this transition into the health system?

Under a 2006 Council of Australian Government decision, States and Territories have guaranteed to provide all Commonwealth-supported graduates of Australian medical schools with an intern position. This means there is an investment in internship estimated to exceed $300 million each year, and at present borne almost exclusively by the public health system. This investment facilitates a high level of supervision and support for interns to meet registration requirements. Governments are looking at the value of the return on all public investment. It is defensible investment if it can be shown to contribute to developing a high-quality, highly trained medical workforce while ensuring the safety of patients.

In 2006 Australian governments jointly agreed to a major increase in the number of medical graduates from Australian universities, to address existing and future medical workforce needs. This has placed pressure on the capacity of the health system to provide intern training positions. This has focused attention, in turn, on the nature of the intern year itself and on the question of how best the system can support the transition to practice for medical graduates.

In April 2014, the COAG Health Council commissioned a Review of Medical Intern Training with a broad remit to examine the current medical internship model and consider potential reforms to support medical graduate transition into practice and further training.

While the scope and terms of reference for the Review have been set by Health Ministers, the Review itself is independent. As independent reviewers, our role is to identify the issues and possible opportunities for reform and to undertake a thorough and considered consultation process to inform our final recommendations. The findings of this Review will be presented for consideration to the COAG Health Council.

This Review is both a challenge and an opportunity. It is one which we approach with an open mind. We hope this paper will open the debate in a way that enables all possible opportunities to be canvassed and critically evaluated and that provides a basis for robust discussion.

Scope of the Review

The Review will focus on four broad areas relating to medical intern training in Australia:

1. The purpose of internship and whether the current model remains valid and fit for purpose.
2. The effectiveness of the internship year in producing doctors with appropriate skills and competencies to meet national health care needs and support generalist practice.
3. The role of internship in supporting career decision making by doctors.
4. Models to support expansion of intern training settings.

The Review will be undertaken in two phases. Phase One – this phase – will develop recommendations, while Phase Two will consider the impacts of these recommendations on other parts of the training system and will also consider training options for international full fee paying students in the context of the recommendations.

In developing recommendations, Phase One of the Review will consider and advise on the timing of any changes to be made, as well as highlighting recommendations that have specific implications for other parts of the medical training system and which need to be further considered in Phase Two.

A number of important issues fall outside the specific scope of the Review, namely:

- the content of university medical education or vocational (specialist) training;
- the appropriateness of the number of medical graduates and medical intern positions;
- the 2006 COAG guarantee of intern positions for Commonwealth-supported graduates; and,
- the priority or manner in which appointment to intern positions is made across the country.

In commissioning the review, Health Ministers were clear that these are important matters. They also recognised that medical internship is one part of the medical training continuum and that changes to internship may have implications for other parts of that continuum. Moreover, there is a complex inter-dependency between health care delivery and medical education and training. So the Reviewers will need to consider the implications of any recommendations for the internship in light of the potential impacts of current and potential system capacity and consequences for the medical education and training continuum and health care delivery.

Approach to the Review

The review will be undertaken over 12 months, and is planned to include the following:

- A discussion paper (this paper) will provide background information and highlight key issues for consideration.
- A national consultation process with key stakeholders, based on the discussion paper, to occur from February to April 2015.
- An options paper, developed with feedback from consultation, will set out options for reform to the current internship system.
- A targeted consultation process on the options paper.
- A draft Final Report which will put forward recommendations for reform to the COAG Health Council.

Structure of this paper

This paper starts by providing context and background information on trends in service delivery, healthcare needs and the medical education and internship systems.

It is then structured around the four terms of reference of the review in order to highlight the range of issues for consideration and to ensure stakeholders have an opportunity to respond to the breadth of issues.

For each term of reference, it presents information and commentary and highlights some specific questions on which we are seeking feedback. Finally, it sets out the process for consultation and submissions and describes the way forward for the rest of the Review.

TWO

Context

The requirement for the internship has existed in Australia since the 1930s and much has changed in the organisation, practice and expectations of medical care in this period. There are also significant changes in the health care needs of the community that are influencing the knowledge and skills that doctors need. Moreover, internship needs to be seen within the overall training framework for competent doctors, and this has also changed significantly.

Changes in the organisation and practice of medical care

Changes to the structure and profile of the Australian health system that could directly impact on medical training include:

- Shorter, more intensive length-of-stay in hospital, with faster turnover of patients.
- Greater use of pre-admission assessment and post-discharge care to improve efficient use of hospital beds.
- A higher proportion of health services being provided outside of the hospital system in ambulatory settings.
- An increase in the volume and complexity of medical care provided in private hospitals – in 1998-99, private hospitals accounted for 27% of all patient bed days and 33% of overall patient separations[1]. By 2012/13, this had increased to 32% of patient days and 41% of overall patient separations[2].
- The increasing use and changing role of emergency departments, with patients more intensively assessed and managed prior to transfer to inpatient care (or discharged without need for admission).
- Increasing specialisation with fewer general medical and surgical services especially in the larger hospitals.
- Changed inpatient profile with older patients with multiple co-morbidities.
- Changing models of care, with increased use of multidisciplinary care in areas such as cancer, for example, and close collaboration with health care professionals in disciplines other than medicine..
- Changed requirements before doctors can practise independently within all disciplines.
- Changes in the workplace environment, with increasing use of information technology, clinical decision support system and sophisticated diagnostic tools.

Alongside this, changing patient needs in Australia and overseas have brought an increasing focus on the management of chronic health conditions and provision of effective primary and preventative health services for the community; the latter requiring integration of services between the primary and acute healthcare systems.

Changing expectations in medical care

In the past 30 years there has been a heightened concern about the safety and quality of health care services. Some of this concern has been driven by a more litigious environment but mostly by a concern about patient safety and health care quality. As part of this heightened focus on patient safety, health service management has placed more requirements on the level of supervision of junior doctors and on the activities that they can carry out.

There has also been a gradual reduction in working hours in the medical workforce, some of which is reportedly attributable to a focus on safety and quality, including safe working hours, but also reflecting changing expectations of doctors in terms of work-life balance, such as an increase in part-time working. There has also been a strengthening of industrial awards that regulate the terms and conditions of junior doctors. The consequences of this for the clinical experience of doctors in training are debated.

1 AIHW 2001, Australian Hospital Statistics 1998-99 www.aihw.gov.au/publication-detail/?id=6442467163&tab=2, accessed 23/1/15

2 AIHW 2014, Australian

Changes to medical education

Medical education in Australia has grown from an initial base of three medical schools with no infrastructure for further training to the current system of multiple medical schools and specialist colleges, distinct and accredited phases of education and robust national frameworks to support the training of the medical workforce. It now comprises four phases – basic (university), prevocational (including internship), vocational (specialist) and continuing professional development, as outlined in Figure 1.

While this diagram shows the typical linear progression of doctors from university education through to qualification in specialist or general practice, in many cases the progression is not linear, with the entry point to specialist training often occurring later than shown, based on specialist training entry requirements and individual circumstances and preferences.

Basic medical education initially reflected requirements of the UK General Medical Council. It has since developed under a range of influences including US and UK thinking on curriculum development that led to the establishment of hospital-based academic departments to provide clinical teaching.[3] Landmark Australian reports in 1973 and 1988, meanwhile, led to an expansion of medical school places, support for emerging disciplines and other innovations.

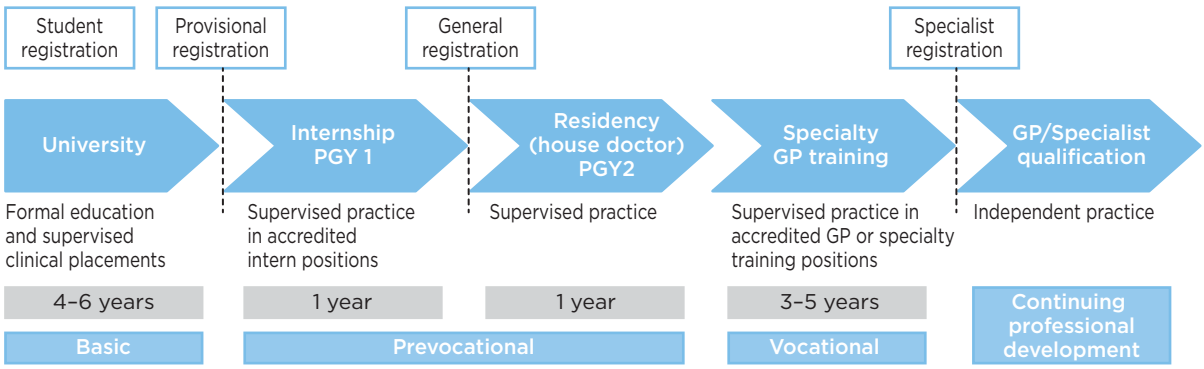
Over this time, we have seen student selection drawn from a wider pool of applicants, particularly with the move to graduate entry medical schools; the introduction of problem-based learning and the expansion of community-based teaching. Since 2000 a rapid expansion in medical schools, driven by workforce considerations, has led to eight new schools being established within a decade, graduate numbers almost trebling and further diversification in student demographics.[4]

Internship, gradually introduced between the 1930s and 1970s and described as a legacy of the British system, was:

> *initially intended to be a period of apprenticeship with little formal educational structure, when junior doctors progressed under supervision from "knowing" to "doing".*

The establishment of Postgraduate Medical Councils from the 1980s onwards progressively formalised the governance of intern training, including through accreditation standards and the development, in 2010, of an Australian Curriculum Framework for Junior Doctors as a guide to learning outcomes for the two year prevocational period.

Figure 1: Medical Education Pathway in Australia



3 Geffen (2014), A brief history of medical education and training in Australia, MJA 201.

4 Geffen (2014), p. S21

5 Ibid

The development of vocational training, meanwhile, has expanded from its initial tertiary teaching hospital focus to encompass private and community sectors, including through the establishment of general practice as a specialty. It has also been guided by major overseas developments, including the 1984 *Physicians for the twenty first century* report of the Association of American Medical Colleges and the 1996 Royal College of Physicians and Surgeons of Canada *CanMEDS Physician Competency Framework.* The latter in particular marked a move towards competency-based training which has been given impetus here through the implementation of accreditation processes but which has also prompted debate.[5]

The growing remit of the Australian Medical Council (AMC), which now accredits university through to vocational training, has brought consistent oversight of the quality of medical education, while the introduction of national registration and accreditation in 2010 means that

> *mechanisms are now in place, for the first time, for integration of all phases of medical education to meet the local and regional challenges facing Australia's medical workforce.*[6]

6 ibid

THREE

Medical registration in Australia

While the focus of this Review is on requirements for doctors to reach general registration, it is useful to briefly explain the broader medical registration categories in Australia.

Since 2010 the Medical Board of Australia (MBA) is responsible for the registration of medical practitioners and medical students in Australia. There are four main types of medical registration which apply to students and graduates of Australian and New Zealand medical schools in the course of their transition from university to specialist practice:

- *Student registration* applies to students enrolled in an approved program of study leading to registration as a medical practitioner. With the introduction of the National Registration and Accreditation Scheme, there was agreement that students should be registered in the interests of public safety. However, unlike registration for qualified health professionals, information about students is not published online or publicly available. Under the scheme, the MBA is able to act on student impairment matters or when there is a conviction of a serious nature that may impact on public safety.
- *Provisional registration* applies to applicants required to complete a period of approved supervised practice to become eligible for general registration. Those eligible to apply for provisional registration are Australian and New Zealand Medical Graduates, Australian Medical Council (AMC) Certificate holders and those applying via the Competent Authority Pathway. Australian and New Zealand medical school graduates must apply for provisional registration to undertake a period of approved intern training to become eligible for general registration. Interns are only permitted to work in accredited intern positions. They are not permitted to undertake any clinical work outside their allocated intern position.
- *General registration* is available to Australian and New Zealand medical school graduates who have completed approved intern training and international medical graduates who have completed the requirements of the competent authority pathway or the standard pathway. Interns who are provisionally registered are eligible to apply for general registration upon satisfactory completion of 12 months of clinical experience in accredited terms as specified in the *Granting general registration as a medical practitioner to Australian and New Zealand medical graduates on completion of intern training registration* standard.
- *Specialist Registration* is available to medical practitioners who have been assessed by an AMC-accredited specialist college as being eligible for fellowship. The Australian Health Practitioner Regulation Agency (AHPRA) publishes an online Specialists Register that includes details of practitioners' specialty and field of specialty practice, consistent with the list of specialties, fields of specialty practice and specialist titles approved by the Ministerial Council. Medical practitioners with the necessary qualifications in the approved specialties are included on the Specialist Register and their specialist title will be protected by law. Entry into fellowship training programs is governed by the respective specialist medical colleges. General registration is a pre-requisite for entry into specialist training for Australian medical graduates. Specialist registration means the practitioner can practise independently without supervision.

FOUR

Internship in Australia

Internship requirements

The current requirements for internship in Australia are set out in the Registration Standard *Granting general registration as a medical practitioner to Australian and New Zealand medical graduates on completion of intern training*, which came into effect in January 2014.

The Standard describes internship as

> *a period of mandatory supervised general clinical experience. It allows medical graduates to consolidate and apply clinical knowledge and skills while taking increasing responsibility for the provision of safe, high quality patient care. Diagnostic, communication skills, management skills, including therapeutic and procedural skills, and professionalism are developed under appropriate supervision. Internship also informs career choices for many graduates by providing experience in different medical specialties including general practice, and providing a grounding for subsequent vocational (specialist) training.*
>
> *Completion of the internship leads to general registration. General registration indicates that the practitioner has the skills, knowledge and experience to work as a safe entry level medical practitioner able to practise within the limits of their training.*[7]

The Standard requires interns to undertake a minimum of 47 weeks full time equivalent service including mandatory periods (terms) of at least 8 weeks in emergency medical care and at least 10 weeks each in medicine and surgery. Internship may be undertaken part-time, but once started must be completed within three years.

Interns can only work in accredited intern positions at accredited facilities. The MBA has delegated the authority to accredit institutions for intern training to Postgraduate Medical Councils (PMCs) in each State and Territory. The Australian Medical Council (AMC) reviews these bodies on behalf of the MBA, assessing them against the requirements set out in *Intern training – Domains for assessing accreditation authorities*.

Each PMC accredits intern training positions in their State/Territory and each has its own accreditation standards which must be met for a facility and/or position to be accredited. While not a requirement of the MBA, some States and Territories also accredit postgraduate year two (PGY2) positions. As previously mentioned, the Confederation of Postgraduate Medical Education Councils (CPMEC) developed an Australian Curriculum Framework for Junior Doctors which sets out broad learning outcomes for the two-year prevocational period, though this does not have any formal status in the intern registration process.

Internship assessment

The intern year has no examinations, with assessment of interns being work-based.

The MBA has developed *Intern outcome statements* that outline the broad and significant outcomes interns should achieve by the end of their programs. These are set within four domains – the intern as scientist and scholar; the intern as practitioner; the intern as a health advocate and the intern as a professional and leader.

7 Medical Board of Australia *Granting general registration as a medical practitioner to Australian and New Zealand medical graduates on completion of intern training.*

Intern training providers are required to certify completion of internship by completing the MBA *Certificate of completion of an accredited internship* form. On the basis of the information provided, the MBA makes the decision on granting general registration.

The MBA requires evidence that interns have satisfactorily completed at least 47 weeks experience in supervised clinical practice; performed satisfactorily under supervision in emergency medical care, medicine and surgery; achieved an overall satisfactory rating and met the standard expected for general registration at the end of the intern year, as confirmed by the Director of Clinical Training, Director of Medical Services or other authorised person.

The Director of Clinical Training is usually a senior clinician who oversees intern training within a facility or other training location. The training provider is also required to identify a Term Supervisor for each intern term, usually a consultant, who is responsible, amongst other things, for orientation to the term and intern assessment within their term.

The work-based assessment of intern training requires term supervisors to complete mid- and end-of term reports. Assessment must be based on interns achieving outcomes stated in the *Intern outcome statements*. To facilitate consistency, a national *Intern training-Term assessment form* has been developed, however training providers may use locally developed forms where these meet the national standards.

The national term assessment form requires intern performance to be rated against the outcome statements on a five point scale and the form provides behavioural anchors for each outcome statement.

The form also requires a global score, to assist in determining overall satisfactory performance, which uses a three point rating scale:

- *Satisfactory*- the intern has met performance expectations in the term;
- *Borderline*- further information, assessment and remediation may be required before the intern can demonstrate they meet performance expectations in the term;
- *Unsatisfactory*- the intern has not met performance expectations in the term.

Term assessments are not required to be submitted to the MBA. The intern training provider is only required to submit the Certificate of Completion. The MBA has clarified that

> *Term Supervisors are expected to indicate whether interns have satisfactorily passed each term, but the Medical Board will consider the totality of advice in deciding whether to grant general registration. An intern who has performed marginally or unsatisfactorily in a specified term but who has demonstrated 'significant' progress with evidence of remediation may be deemed to have met the standard expected for general registration by the end of the year.*

Employment arrangements

The majority of internships are undertaken in the public hospital system with states and territories funding the full cost of internship. Interns are employed and get paid a salary, with base salaries ranging from $61,560 to $72,513 across the States and Territories. Equivalent salaries for other health graduates range from $53,768 - $63,770 for nurses, $52,068 - $102,960 for dentists and $50,781 to $60,801 for physiotherapists. However, graduates in these professions can achieve general registration at the point of graduation.

The investment in internship is not limited to interns' salaries, with significant additional costs involved in supporting their training and supervision, such as education programs, training facilities and the time commitment of senior staff to provide formal teaching.

8 National Medical Intern Summit 2013 Background Paper, p.. 6

NSW has calculated this total investment, including salary and on-costs, to be in the order of at least $100,000 per position, while Queensland's calculations are in the order of $120,000.[8] The Commonwealth Medical Internship (CMI) programme, established to fund up to 100 internships a year in the private sector from 2013/14, is also based on $100,000 per position.

The CMI programme guidelines outline that funding will assist with the reasonable cost of delivering each accredited intern place, which may include salary; on-costs, including supervision, support and development; reasonable travel and accommodation for interns doing rotations away from their home city/town; and additional costs (such as minor one-off capital expenditure), if a case can be made. Graduates taking up positions in the CMI programme are obliged to undertake a return of service period in a rural or regional location.

While internship includes formal teaching and support, it is primarily a work based year of on-the-job learning. Interns' contribution to patient care is therefore essential to their clinical learning and the consolidation of their skills.

However, while much training during the internship is incorporated in the work role, it appears that there has been a progressive increase in the amount of more structured educational activities undertaken during normal working hours. It is possible that this component has also increased in response to intern numbers.

Interns' productivity in service delivery is therefore constrained by the formal requirements and structure of the intern year, and involves a balance between education, supervision and support on the one hand and need and opportunity to contribute to patient care on the other.

After completing internship and obtaining general registration, most doctors have traditionally continued to work in the public hospital system for another year in a resident / house officer role before entering general practice or other specialty training. Concerns have been raised that the growth in intern numbers may have impacted on availability of second and subsequent year hospital medical officer positions.

FIVE

Term of Reference 1: Purpose of internship and whether current model remains valid and fit for purpose

As previously noted, the initial form of internship was an apprenticeship system that enabled doctors to progress from 'knowing' to 'doing', completion of which marked an end point of sorts in the formal training process, as doctors with general registration were then able to practise independently as general practitioners.

Since then, internship and the systems around it have evolved to the point where it now forms a foundation component of a lengthy continuum of postgraduate training rather than an end (general registration and the ability to practise independently) in itself. The consequence of achieving general registration is substantially different today than it was in the past.

One significant change has been the introduction in 1996 of Section 19AA of the *Health Insurance Act 1973 (The Act)* to recognise and support general practice as a vocational specialty and to provide a framework for achieving long term improvements in the quality of doctors working in Australia.

Section 19AA applies to all doctors who obtained medical registration after 1 November 1996, are Australian citizens or permanent residents and who do not hold continued recognition by the Royal Australian College of General Practitioners (RACGP) or Australian College of Rural and Remote Medicine (ACRRM) or by another recognised specialist college. Under section 19AA doctors must complete a program of postgraduate vocational training to be eligible to receive a Medicare provider number with access to the Medicare benefits arrangements.[9]

General registration no longer, therefore, provides the ability to practise independently as a General Practitioner, with extensive further postgraduate training and assessment required before such practice is permitted. This is also the case for practice as a specialist. A small number of doctors may provide clinical services outside this structure in non-Medicare funded services.

The employment of all junior doctors within the hospital system, meanwhile, at either postgraduate year two (PGY2) level or higher, occurs within an environment of graduated supervision, with a range of quality and safety requirements and guidelines as well as restrictions on access to Medicare benefits.[10] The employment of more senior non-specialist workforce such as Hospitalists and Career Medical Officers is subject to formal, merit-based recruitment processes and provision of appropriate supervision arrangements.

This raises a question, from the context of managing risk to patient care quality and safety, how is the internship different to that of other junior medical positions? Is there still a public safety benefit from the mandatory internship given that independent practice no longer occurs until after significant further training? What then, is the purpose of internship in today's health system? Why is provisional registration limited to the first post-graduate year when effectively independent practice cannot occur until vocational training is complete?

The MBA intern registration standard indicates a number of stated purposes of internship:

1. To allow graduates to consolidate and apply clinical knowledge and skills while taking increasing responsibility for provision of care.
2. To develop diagnostic, communication, management skills, including therapeutic and procedural skills, and professionalism, under appropriate supervision.
3. To inform career choices for graduates by providing experience in different medical specialties including general practice.
4. To provide a grounding for subsequent vocational (specialist) training.
5. To lead to general registration, which indicates that the practitioner has the skills, knowledge and experience to work as a safe entry level medical practitioner able to practise within the limits of their training.

9 There are some exemptions from section 19AA for certain workforce and training programs.

10 Under Section 3GA of the Act medical practitioners undertaking postgraduate education or training placements on approved orkforce training programs to provide professional medical services are eligible to attract Medicare benefits

The first four of these are important aspects of the transition to practice for new graduates irrespective of whether they are part of a registration process or not.

All new graduates, in health and other professions, require supervision and support as they transition into the work place. This transition can be a competitive and stressful time, where graduates adapt to new work environments and cultures and grapple with their new roles and teams. The first postgraduate year provides a critical foundation for future practice.

From an employer point of view, the selection and support of new graduates is an important human resource strategy, with considerable investment made by organisations in building their future workforce. This investment provides a structure of initial experience and expectations; facilitates the integration of new graduates into effective teams and provides the basis for future contribution to the organisation.

The period of transition to practice will exist regardless of what it is called and how it is defined. It is useful, therefore, to examine how well the current internship model achieves the aims of the registration standard.

1. The consolidation and application of clinical knowledge and skills is a key feature of internship, providing the foundational experiences for doctors to become competent clinicians, able to make decisions and perform procedures. Recent curricula have moved to use terminology such as core competencies or 'entrustable professional activities' which doctors can demonstrate proficiency in, as they transition from theory to practice.
   Anecdotal evidence suggests, however, that some interns would like and are capable of undertaking more responsibilities in patient care. The spectrum of medical graduates now includes an increasing number of people with prior health care experience in other professions This raises questions about the 'one size fits all' structure of the internship.
2. While internship facilitates the development of procedural and cognitive skills such as communication, professionalism and teamwork, some have argued that frequent, short rotations to completely new team environments may in fact impede the development these skills. Assumptions embedded within medical education include that rotations promote greater independence and teach doctors to adapt to varying styles, expectations and stress.[11] However, recent reviews have recommended fewer, longer rotations as important in building doctors' confidence and preparedness and facilitating their integration into effective teams.
3. Internship undoubtedly provides experiences that help doctors choose what careers they wish, or don't wish, to pursue. However, the extent to which it does this well is a matter for debate. Many specialities, such as public health, rarely, if ever, are offered as terms for interns yet some doctors choose to enter these careers. Conversely, there is little evidence of a strong correlation between mandatory terms in emergency care, for example, with doctors choosing to enter specialist emergency training. Meanwhile, the requirement for mandatory rotations mean there is less time available in the intern year for extended terms in other specialties.
4. Internship certainly provides an opportunity to become 'work-ready' - even though some argue interns should be more work-ready when they start - with doctors building skills that will be required for further practice and entry into vocational training. Yet many of the expectations and entry requirements for entry into College training programs are at a higher level than internship. Also, the current assessment of interns does not capture specific skills (e.g. procedures) that are prerequisites for admission to some programs. Are the expectations of what could be achieved during the internship set too low?
5. General registration and its implication of safety to practise as an entry-level practitioner now occurs within a significantly different environment than previously, with governance processes and safety systems designed to protect patients and practitioners. Given this, and the restrictions on independent practice previously described, does the current intern standard continue to overly invest the concept of safety in the individual?

11 Holmboe at al (2011) The rotational approach to medical education: time to confront our assumptions? Medical Education 45: 69-80

At a macro-economic level, the investment in intern training exceeds $300 million per annum, based on current intern numbers and costs. It is appropriate to ask, therefore, whether this investment is appropriately delivering the outcomes we want for our future medical workforce. Do the current stated aims of internship continue to be relevant, useful and achievable? Are those components that represent transition to practice able to be separated from a registration process?

A shared understanding of the purpose of the first postgraduate year is essential for this Review. To assist discussion, we pose a potential description of the purpose, as follows:

1. To provide a transition to the medical workforce in a system that is safe for patients and for graduates.
2. To consolidate a core set of entrustable activities and the assessment of those within a work environment, as a first step in the progression towards independent practice.

Would this definition help in analysing the different options available to support new graduates' transition to practice?

Intern assessment

Provisional registration is initially granted to medical graduates for 12 months. Interns who do not achieve general registration after 12 months may apply to the MBA to renew their provisional registration if they have not completed all of the specific requirements in time. While no national data are available on the number of graduates who encounter difficulty during internship, data from the Australian Health Practitioner Regulation Agency (AHPRA) show the vast majority successfully complete internship and obtain general registration within 12 months.

Over the period 2010-2013, the number of practitioners holding provisional registration for longer than 12 months varied between 0.6% and 1.3% of total intern numbers, the lowest being in 2013.

These data include a small number of interns working part-time, who therefore take longer than 12 months to achieve general registration, and not just those who took longer to reach general registration as a result of underperformance. Even fewer doctors took longer than two years to reach general registration or did not complete at all.[12]

This is arguably a positive reflection on the quality of medical training programs and on the selection process for entry to those programs. However, given that the intern assessment process has limited validation against other competency assessment processes, it could also raise a question about the effectiveness of the intern assessment process. For any system to achieve near perfect results is surprising. Does the current system effectively manage under-performing interns so that they progressively improve through the year? Does the fact that doctors currently complete a second, supervised postgraduate year have an influence on how intern performance is assessed?

The internship year is seen as a period when the performance of medical graduates under real and more stressful conditions can be assessed in a way that is not possible within their university training. What evidence is there that supports this? Do those medical graduates who perform poorly during internship or who do not complete it, also perform poorly in their medical program? In that case, why is remedial or other action not taken before internship?

As noted earlier, when the national intern registration standard came into effect in 2014, a new intern training term assessment form, developed by the Australian Medical Council, was also introduced. The new form provides behavioural anchors across key domains of practice, a feature which may better discriminate levels of performance than previous forms, some of which were found to be perform poorly in this regard.[13] What are the implications of this approach, for example, could it allow shorter as well as longer periods of provisional registration?

13 Bingham & Crampton 2011, *A review of prevocational medical trainee assessment in NSW*, MJA 195 (7).

12 AHPRA data received Jan 2015. 2 doctors extended for more than 24 months; 1 doctor did not transition to general registration. This data may not capture doctors who did not apply to extend provisional registration.

Length of rotations

While there have been recommendations to alter the length of intern training in Australia,[14] it has remained consistent at 12 months of supervised practice, with a common pattern of four or five rotational terms.

The time-based, rotational structure of medical education is deeply embedded, dating back to the development early last century of a system where "*trainees advance as a function of 'dwell-time', simply based on the amount of time spent in a program*".[15]

For many specialties, the amount of time spent in training is an important component of progressing from competence to mastery. Time-based training is also predictable which can facilitate both education and service delivery needs.

However, with changes in healthcare including new and emerging models of care, there is an opportunity to examine whether and how the current model should adapt. The UK *Shape of Training* review highlighted that patient needs should drive how we train doctors and noted that the current approach to progression is too rigid. It found that doctors should be able to progress through their training at an appropriate pace based on assessment of competencies and capabilities.[16]

This has led to calls to re-visit the status quo of the structure of rotations during university and postgraduate medical training. It has been suggested, for instance, that more patient-centred, longitudinal approaches to education that have been tested in a number of medical schools internationally[17] and in Australia, be considered.

A number of universities have introduced longitudinal integrated clerkships, which

> *allow medical students to participate in the comprehensive care of patients over time and to participate in continuing learning relationships with these patients' clinicians, while meeting the majority of the year's core clinical objectives across multiple disciplines simultaneously.*[18]

At a postgraduate level, longer periods of time within a clinical setting might better facilitate the inculcation of interns into the work environment and provide a longer learning relationship with both patients and clinicians.

The UK evaluation of the Foundation Year program found

> *ninety per cent of Foundation School rotations comprise three placements of four months in each year. Opinions vary between those who favour four and six-month placements but there is no support for placements that are shorter or longer than this. The Evaluation therefore recommends that placements should be of four or six months' duration.*[19]

The latter would enable completion of foundation year 1 requirements while completing just two placements.

The subsequent Shape of Training review supported longer placements for doctors, observing that

> *longer time in a stable work environment would give doctors more bespoke training opportunities, resulting in some being able to demonstrate competencies and capabilities rapidly while building their confidence.*[20]

While research into intern term assessments in Western Australia and Queensland found no effect of experience (i.e. whether a rotation was the intern's first, second or last rotation) on term assessment scores[21, 22], this may be a function of the assessment process rather than commentary on the skill level of interns as they progress through their 12 month internship.

Is the current structure of fixed-length rotations still the best model for internship? How does this structure align with new models of care, patient needs and competency-based training models?

14 *Australian Medical Education and Workforce into the 21st Century* (1988) Recommendation 6 (ii)

15 Holmboe et al, (2011), Medical Education 45; 69-80

16 *Securing the future of excellent patient care – Final Report of the independent review*

17 Klaber (2014) Postgraduate Medical Journal Vol 90 No 1062

18 Hirsch, et al (2014) Time to trust: Longitudinal Integrated Clerkships and Entrustable Professional Activities, Academic Medicine Vol 89, No 2.

19 Collins, ibid

20 *Securing the future of excellent patient care – Final Report of the independent review* p.35

21 Carr, Celenza & Lake, 2014, Medical Teacher, p. 983

22 Arem et al, (2013) Emergency Medicine Australasia 25, 68-74

Vertical integration of training

The rotation structure throughout undergraduate and postgraduate education means that many doctors will spend several discrete placements or rotations within a specialty, with students in the final years of their university programs undertaking rotations in several specialties and completing a pre-intern (PRINT) term prior to graduation.

As interns, these doctors will then complete further terms in some of the same specialties, perhaps repeated again in their PGY2 year before entry into specialty or general practice training. While the importance of time in building mastery has been noted, to what extent are the training outcomes achieved at each stage building upon and integrating the knowledge gained in previous placements? To what extent does prevocational training, including internship, build the skills required for entry into specialist training?

Other health professions

The majority of other health professions provide general registration to graduates on award of their higher education qualification, although employers often have other requirements before considering them work ready, including the need for graduated exposure to independent practice. This contrasts with medicine, where the registration process, rather than employer requirements, largely dictates that nature of the transition to practice for new graduates.

The Dental Board of Australia approves programs of study including those "*accredited by the Australian Dental Council that lead to registration or endorsement with the National Board*". The Board states.

> *a dentist's qualification that leads to registration provides the complete foundation knowledge to enable full scope in dental practice.*[23]

Graduates of Australian university programs accredited by the Dental Council do not require further training beyond their qualification to achieve the dental scope of practice registration standard. Internships for dental graduates have been promoted in some States as a means of retaining new graduates in public sector services, but it remains voluntary.

For nursing and midwifery, a similar situation applies, with graduates able to achieve registration status on award of their degree, but with additional requirements for individuals seeking to meet other registration standards such as endorsement as a nurse practitioner.

Other professional groups have moved from requirements for a period of supervised practice prior to full registration to models that incorporate alternate pathways. Medical radiation practice has both provisional and general registration. Graduates of the majority of university programs achieve provisional registration and are required to complete a period of supervised practice to become generally registered. Graduates compete for a limited number of intern-equivalent positions that provide this supervised practice. In recent years, a number of universities have introduced degree programs that incorporate the requirements necessary to achieve general registration. These programs are of longer duration (typically four instead of three years) and are listed by the Medical Radiation Practice Board as approved programs of study leading to general registration.

By contrast, pharmacy graduates are provisionally registered and are required to undertake an internship in order to meet general registration. However part of the process of gaining general registration is the completion of an examination set by the Pharmacy Board, which may consist of both oral and written components and which provides an independent benchmark of performance for all graduates.

Other jurisdictions

Requirements for internship or its equivalent in other jurisdictions are varied, with no universally consistent process for managing the transition from university to practice. The specific arrangements reflect the broader training environments of those countries, which differ from Australia in a number of ways. However, it is still useful to examine the varying approaches.

23 Dental Board of Australia Scope of practice registration standard and guidelines 31 October 2014

New Zealand

The Medical Council of New Zealand (MCNZ) is responsible for setting the registration standards for medical practice in New Zealand. As set out below, while there is a requirement for a period of supervised practice similar to the internship year, there is more flexibility in approach because the framework is competency based.

Graduates of New Zealand medical schools must complete a period of supervised practice, with the following requirements to be met before being granted a general scope of practice:

- *The completion of four accredited clinical attachments* – though no attachments are specified as mandatory. The reason for this is that accreditation standards link to the learning outcomes of the NZ Curriculum Framework for Prevocational Training, to ensure that every clinical attachment provides a quality learning experience
- *The attainment of the learning outcomes outlined in the New Zealand Curriculum Framework for Prevocational Training.* Prior learning from the trainee intern year (the final year of NZ medical school) will be taken into account;
- *Completion of a minimum of 10 weeks in each attachment*;
- *A recommendation for registration in a general scope of practice by an approved panel* (to include the Intern Supervisor);
- *Establishing an acceptable Professional Development Plan (PDP) for PGY2, to be completed during the PGY2.* This is a recent change, introduced to address concerns about the lack of structures and quality of learning for the PGY2 year.

Following a recent review, New Zealand now has a requirement that interns spend at least 12.5% of their time over their first two postgraduate years in community based and outpatient settings. This is equivalent to completing one attachment over the two year period, or alternatively a selection of attachments, each of which has a portion of time allocated to the community or outpatient setting.

United Kingdom

The General Medical Council (GMC) is responsible for setting the educational standards for all UK doctors through undergraduate and postgraduate education and training.

Graduates from UK medical schools receive provisional registration and must complete an *'acceptable programme for provisionally registered doctors'*, the only recognised programme being the Foundation Programme. Provisionally registered doctors can only take up posts in the Foundation Programme and must also hold a licence to practise.

The Foundation Programme is a two year generic program designed to form a bridge between medical school and specialist/general practice training. Satisfactory completion of foundation year 1 (F1) is necessary for the purposes of full registration by the GMC and is confirmed by the completion of a Certificate of Experience.

Universities, or their designated representative in postgraduate deaneries or foundation schools, are required to certify that provisionally registered doctors have met the outcomes for full registration set by the GMC and have completed a programme of 12 months before full registration is granted. There are no mandatory rotations specified for the F1 year.

Satisfactory performance in foundation year 2 (F2) leads to the award of a Foundation Achievement of Competence Document (FACD) which indicates that the doctor is ready to enter a core, specialty or general practice training programme.

Several recommendations of the 2013 review of medical training titled *Shape of Training Review* are of relevance in the context of this review including:

Recommendation 4: Medical schools, along with other appropriate organisations, must make sure medical graduates at the point of registration can work safely in a clinical role suitable to their competence level, and have experience of and insight into patient needs.

Recommendation 5: Full registration should move to the point of graduation from medical school, subject to the necessary legislation being approved by Parliament and educational, legal and regulatory measures are in place to assure patients and employers that doctors are fit to practise.

At the time of the release of the final report, the GMC commented that "s*ome of the recommendations will require further discussion, including the suggestion that full registration should be awarded at the point of graduation from medical school.*" As yet the change to move full registration to the point of graduation from medical school has not been implemented.

Canada

There is no national registration process in Canada, with each Province having its own rules, requirements and processes for licensure. In each province, the local College of Physicians and Surgeons manages the licensing process, though there has been agreement to establish a national standard in all provinces. Licensure requirements include the requirement to be a Licentiate of the Medical Council of Canada (LMCC), which the Medical Council of Canada (MCC) grants to graduate doctors who have satisfied the eligibility requirements and passed the MCC Qualifying Examination Parts I and II.

The Canadian medical training system replaced the internship as a postgraduate training stream in 1994. Instead, final year medical students choose a speciality training program affiliated with one of the 17 Canadian Faculties of Medicine. These are university-based residency programs accredited by either the College of Family Physicians or College des Medicines du Quebec (in Quebec) or by the Royal College of Physicians and Surgeons of Canada. The minimum duration for residency training is a two year family medicine program and the maximum is 6 or 7 years in specific Royal College accredited specialties.

While completing postgraduate training doctors hold a Postgraduate Education Certificate of Registration and can only practise medicine as required by the postgraduate program they are undertaking. Doctors can apply for an Independent Practice Certificate of Registration after certification by examination by either the Royal College of Physicians and Surgeons of Canada or the College of Family Physicians of Canada.

United States

The registration of doctors in the United States is governed at a state rather than national level, with individual medical licensing authorities ("state medical boards") of the various jurisdictions responsible for granting a license to practice medicine. Each medical licensing authority sets its own rules and regulations and requires passing an examination that demonstrates qualification for licensure.

The United States Medical Licensing Examination (USMLE) is a national three-step examination process which provides medical graduates the evidence of qualification for licensure. Results of the USMLE are reported to medical licensing authorities for use in granting the initial license to practice medicine. The USMLE provides a common evaluation system for applicants for initial medical licensure.

In the United States medical graduates progress to specialist training via a residency program which is selected towards the end of their university qualification programs and which uses the National Residency Match Program to place graduates in programs. There is no national internship program in the United States. Direct comparisons with the United States are less applicable, given the different structure of its university medical education system.

Discussion Questions

1. What is the purpose of internship, given that independent practice as a medical practitioner is now only possible after a minimum of 4 years of vocational training?
2. Is internship in its current form fit for purpose? Should the current model change? How should it change?
3. Is the training component of internship able to be separated from the clinical work role?
4. If the internship should continue largely as is, are there any changes that could improve this model?

SIX

Term of Reference 2: Effectiveness of the internship year in producing doctors with appropriate skills and competencies to meet national healthcare needs and support generalist practice

As mentioned earlier, significant changes have occurred in the organisation, practice and expectations of medical care in recent decades. These include a shift in the provision of care towards more private and community settings and a trend towards specialisation that has brought into focus the question of how best to build and maintain generalist practice. These are important changes in which to examine the current internship system.

Internship settings

While the MBA standards do not explicitly state where an internship can be completed (in fact they are silent on the issue), the requirement that 28 of the 47 weeks of internship must be completed in medical, surgical and emergency medicine care means that the focus of internship is the (public) acute hospital setting, with the majority of interns completing their internship entirely in that setting.

Also, while the public health system represents only one part of the system, it currently provides training for doctors who will eventually work not only in the public system, but also in private hospitals, general practice and overseas.

While the MBA standard allows internships to be undertaken in a private hospital setting, to date only a small number of intern positions have been established in private hospitals. Anecdotally the reasons for this include cost; lack of infrastructure to support intern training, supervision and pastoral care; and the loss of productivity resulting from the education, training and supervision requirements. The small number of private hospital internships appears to be inconsistent with where clinical services are delivered and also with where doctors will work after they complete their postgraduate medical training.

There are equally limited opportunities to undertake internship in a community or general practice setting. Again this is not consistent with where healthcare services are delivered and contrasts with the New Zealand requirement that doctors undertake 12.5% of their first two years in a community setting.

The UK *Shape of Training* review highlighted the need for more doctors who can provide care across a range of settings, and this has led to calls for introduction of *"programmes of learning and development that train 'in and for' integrated models of care and healthcare outside hospitals.*[24]

With the emergence of new models of care in ambulatory settings and the blurring of the boundary between primary and secondary care, is an important principle of medical training that it should be able to adapt to these new models?

Internship exposure

The internship structure varies across the different states and territories and is determined by state/territory policies, practices and requirements. In some jurisdictions interns work within a training network and rotate across a number of different facilities during their internship. In others, internship is completed entirely at one facility, with some occurring in large teaching hospitals and others in mid-sized, district hospitals.

This variation in intern experience comes on top of university clinical experiences that, due to the significant expansion in university medical programs in recent years, also span a range of models and

24 Klaber Postgrad Medical Journal April 2014 Vol 90 No 1062

settings. Some university programs provide more emphasis on primary or rural practice; while others concentrate more on the on acute setting placements. A South Australian study of interns in emergency terms found those who had undertaken six or more months in rural placements at medical school had greater opportunities to work with undifferentiated patients in internship, suggesting that extended rural placements may enhance preparedness for work as an intern.[25]

Variations across medical school and internship represent substantive differences in clinical exposure. Does this variation matter? Is internship in fact the equalizer of training that it is meant to be? Is an intern a better doctor if they have had a range of experiences in different locations, or is it better for them to be in one location and become familiar with their work environment?

As there is no national intern examination or other national assessment data it is difficult to make evidence-based comment about the quality of or differences between interns across the different training settings and experiences. It is also noted that the term assessments and Certificates of Completion are completed by local clinicians and therefore their assessments will be based on their experiences and expectations within a specific setting.

Rural and regional training

There has been a significant recent expansion in training infrastructure in rural and regional locations, particularly at the university level with the development of regionally-based medical schools, rural clinical schools and University Departments of Rural Health. All medical students now have some exposure to rural practice through their university training, with many spending a significant amount of time in a rural environment.

Some interns complete all of their internship in rural/regional locations while others may not undertake any rural experience. Recent research into junior doctors' experiences of training in rural Queensland found they were required to perform at a higher level compared to that required in metropolitan hospitals. Two thirds of those surveyed reported feeling uncomfortable with respect to their clinical practice and a similar amount reported changing their practice while in the rural location.[26] While the study cohort was primarily PGY2 and higher, these findings align with anecdotal evidence that rural rotations for interns provide a higher degree of clinical exposure, and hence learning opportunities.

A clear driver of national workforce policy has been to support health service delivery in regional, rural and remote locations, however as noted, the internship standards are silent on the setting in which intern training occurs. While all medical students have mandatory rural exposure during university and many specialist training programs also involve rural placements, should all interns also undertake rural experience?

Generalism and generalist skills

A commonly cited concern of health services is the need to maintain generalist clinical skills, particularly in regional and rural environments and in light of a growing trend towards sub-specialisation of the medical workforce. The increase in the number of people with multiple, long term and complex conditions, particularly among the elderly, and increased sub-specialisation is in fact driving a renewed interest in generalist medical training.[27]

The prevocational training years are therefore seen as important components of the training continuum that provide general clinical skills to doctors before they enter specialist or general practice training.

The terms 'generalist' and 'generalism' have been interpreted to mean many different things, including a form of specialisation, with the result that there appears to be no accepted definition of either term in Australia.

25 Morefield et al (2014) South Australian Medical Education & Training

26 Rowe et al (2014) Australian Journal of Rural Health 22, 63-67

27 *Securing the future of excellent patient care - Final Report of the independent review* p.22

A recent Canadian report provided definitions that draw a useful distinction between 'generalism' and 'generalists':

> *Generalism is a philosophy of care that is distinguished by a commitment to the breadth of practice within each discipline and collaboration with the larger health care team in order to respond to patient and community needs.*
>
> *Generalists are a specific set of physicians and surgeons with core abilities characterized by a broad-based practice. Generalists diagnose and manage clinical problems that are diverse, undifferentiated, and often complex. Generalists also have an essential role in coordinating patient care and advocating for patients.*[28]

How generalism or generalist skills are developed through internship is, however, unclear. The requirement that interns undertake rotations in surgery, medicine and emergency care is cited as an example. However, because most internships are served in higher level hospitals which are structured on sub-specialities, most interns serve their medical and surgical rotations in specialist units. While it is possible that this achieves the same end, there is little evidence to confirm it. Indeed what evidence is available suggests that exposure to generalist aspects of care is more likely to occur during regional and rural terms.

The Canadian definition of generalism as a philosophy of care implies an ongoing commitment to a breadth of practice, supported across the continuum of medical education and training, rather than comprising a time-limited period of 'generalist' training that occurs prior to specialisation. Equally, the definition of generalist as a sub-set of doctors with specific skills and training may help to frame the discussion on the role of internship in supporting career decisions into generalist pathways, which will be discussed later.

The question arises, therefore as to whether mandatory rotations in medicine, surgery and emergency care actually support generalism? These rotations may in fact attract interns to a specific specialty and they may start modelling their practice and approach with that specialty focus rather than a generalist focus.

Also, over the last twenty five years all interns have completed mandatory rotations yet at the same time the medical workforce has become more and more specialised.

Anecdotal evidence of the implications of this trend includes, for example, newly qualified physicians who feel unprepared to participate in a general medical on call roster, even after completing a general intern year and three years of basic physician training. Therefore is internship supporting the development of generalist skills? Do we have the right expectations about the role of internship in supporting generalism?

Given the alternative approaches in place in North America, where graduates stream into specialty training — some of which is generalist — directly from medical school, is our current prevocational training structure the only or best way that generalists and generalism can be supported? Should the same type of training be provided to all graduates, notwithstanding their varying interests and career preferences? Should the assessment of general clinical skills be focused on particular competencies or requirements for practice?

Internship, as the first postgraduate year of medical practice, also provides the opportunity for doctors to build critical professional competencies such as interpersonal and communication skills and the ability to work effectively in teams. Recent research found that interns scored higher on these skills than, for example, procedural skills or managing emergencies.[29]

While these may be considered 'soft' skills, they are hugely important in today's health environment. Patients expect to be more involved in decisions about their care, which requires an ability to communicate effectively with them, particularly when they have complex needs. Continuity of care between the hospital and community setting, meanwhile, requires good communication with patients and their community health providers to ensure appropriate follow-up and avoid unnecessary hospital visits.

28 Report of the Generalism and Generalist Task Force, Royal College of Physicians and Surgeons of Canada, 2013, p. 2.
29 Carr, Celenza & Lake, 2014, Medical Teacher, p. 983.

As new graduates enter the workplace, we need to provide an environment that reinforces the importance of empathy for patients and respect for other health professionals and equally enables doctors to feel comfortable asking for help. Research highlights the challenging nature of the transition from university to clinical practice, noting

> *in relation to the development of attitudes and behaviours, idealistic and sterile classroom teaching is often cast aside when newly qualified doctors are faced with the complexities and pressures of the workplace.*[30]

How well does the current internship model build the communication, teamwork and other professional skills required of our future medical workforce?

Discussion Questions

5. Is the intern year effective in building and assessing the skills required for future practice, both general clinical skills and professional skills?
6. Is the duration of internship sufficient to enable effective transitioning into clinical practice?
7. Does the variation in clinical exposure of the current intern model matter?
8. Should all interns have rural, general practice, private health and/or community based experience during their internship? Why?
9. Do the mandatory rotations in fact provide the experience in their nominal specialties? Should all interns do a surgical term? A medical term? An emergency medical care rotation? Should other rotations be mandatory?
10. Should we consider streaming directly into specialty or general practice training? What implications and opportunities would this have for service delivery and length of training?
11. To what extent does internship training prepare doctors for emerging models of clinical practice and for vocational training?

30 Tallentire & Smith (2012) Medical Education 46; 630-635.

SEVEN

Term of Reference 3: The role of internship in supporting career decision making by doctors

The MBA registration standard attributes specific importance to the intern year in supporting doctors' career choices, stating that

> *internship also informs career choices for many graduates by providing experience in different medical specialties including general practice, and providing a grounding for subsequent vocational (specialist) training.*

Medical career choices have been described as

> *a complex mix of individual aptitudes, preferences and characteristics; the structure of, and experiences during, undergraduate and postgraduate education; and the expected characteristics of different medical careers and jobs. The literature is not clear as to which of these factors policymakers should focus on.*[31]

The importance of internship as a factor in career decisions is difficult to determine. Many specialties such as public health, pathology and anaesthetics have few or no interns and yet many doctors choose to pursue careers in these specialties.

A range of research has been undertaken into doctors' career choices. In Australia, the Medical Schools Outcomes Database (MSOD) and Medicine in Australia: Balancing Employment and Life (MABEL) projects use longitudinal data to identify and understand the drivers of decision-making by doctors in their career and work preferences.

These data feature in a recent review by the Centre for Research Excellence in Medical Workforce Dynamics of research into doctors' career choices, including the matter of when in their career pathway doctors or medical students make critical career decisions.[32]

While noting that the majority of available research evidence focused on career intentions rather than actual career decisions, the report cites evidence from Australia and the UK that a minority of students have made their career choice by the end of medical school.

Using Australian data reported by final year medical students in 2011, the report found that only 15% were 'absolutely certain' of their stated preference for specialisation, with 59% 'moderately certain' and 26% not at all certain. The data suggest more certainty at the end of intern year, with the report noting that "*those who were uncertain had fallen from 51% in their final year, to 37% one year later in PGY1.*[33]

These results may, of course, be a product of the current system itself, given that many graduates will defer making career decisions until they have to — in this case, the end of the intern year. The difficulty for doctors to change pathways later on in the course of their specialty training also likely increases the pressure to delay decisions.

Following the Canadian change from internship to streaming into specialty training, there was concern about doctors being forced into premature decision-making. A 2009 report of the Canadian Core Competency Project, however, noted that '*the evidence characterizing the extent to which premature decision-making is a problem was conflicting.*' It found that "*although there was consensus that the issue of premature career choice is important, there was no consensus as to its causes or solutions.*" The report noted that while the competitive nature of choosing and attempting to enter specialty training causes anxiety, "*it was pointed out that measures to offset premature career decision-making such as delaying the timing of specialty selection…would not remove the inherent stresses of career decision-making."*[34]

31 Scott and Joyce (2014) The future of medical careers Medical Journal of Australia 201 (2)

32 Scott, Joyce, Cheng, Wang, (2015) *Medical Career Path Decision Making; A Rapid Review* University of Melbourne and Monash University

33 Scott et al 2015, p. 15, citing Medical Deans of Australia and New Zealand, 2012b

34 RCPSC; CFPC (2009) *Directions for Residency Education, 2009: A Final Report of the Core Competency Project* p. 35.

A 2011 survey of Australian final year medical students explored the factors influencing graduates' preferences for specialisation. The top three were found to be *interest in helping people; intellectual content of the specialty; atmosphere/work culture of the discipline*, while *experience of specialty* was listed as fourth most important.[35]

A further 2012 survey of PGY1 doctors on the same topic, found the most important influencing factors were *atmosphere of the discipline*; *interest in helping people, appraisal of own skills* and *intellectual content of the specialty*. *Work experience since graduating* was the eighth most important factor.[36]

Therefore, does the intern year, in its current regulated format, support career decision making in a way different to how decisions would be made during a first postgraduate year of medical practice? What are the features that would aid or hinder such decision making?

Profile of medical students

With the move towards graduate entry and more recently, masters-level medical programs, the profile of Australian medical students has changed, with many commencing students now older and with more experience than students entering directly from secondary school.

The Medical Training Review Panel (MTRP) 17th report shows that just over half (56.7%) the medical students commencing their studies in 2012 had already completed another degree, with 83.8% of these holding a tertiary qualification in science, medical science and health and/or allied health.[37] The report also shows that 43.6% were aged between 20-24 and another 12.6% aged between 25-29 years[38] on entry into their program.

This maturity and prior experience in a health environment may have implications for these students' career decisions. Are graduates who have previously studied and/or worked in other health fields or in other careers better equipped to make career decisions than those who enter university directly from school?

Medical students undertake clinical placements in all the clinical disciplines during their medical studies and this should also provide information and experience to inform their decisions about postgraduate training. How is a clinical placement experience different to that of an intern term for career decision making? If after completing a surgical clinical placement, students know they do not want to pursue a surgical career why should they still do a surgical rotation as interns? Is there room for a more tailored approach?

Generalist careers

While there remains some confusion over the terms generalism and generalist, we know it is important that pathways into generalist careers such as general medicine, general surgery and general practice are available and attractive. In addition, there is growing interest in other generalist roles such as that of the hospitalist/career medical officer, which are also important to consider.

Other countries have taken different approaches to building these generalist roles. In the US, qualification as a hospitalist involves a form of specialty training in its own right, while in Canada the pathway into general practice is through a streaming model. Since the Canadian system moved away from internship during the 1990s, it became possible for medical graduates to enter a two-year family medicine program directly from university in order to become general practitioners.

In Australia, access to general practice exposure at prevocational level has largely occurred only in the last decade. Introduced in 2005, the Commonwealth Prevocational General Practice Placement (PGPPP) program enabled some interns and PGY2 doctors to complete a rotation in General Practice as part of their prevocational training. The program aimed to enhance junior doctors' understanding of primary health care and encourage them to take up general practice as a career. That program was discontinued after 31 December 2014.

35 MSOD/Medical Deans 2011, cited in Scott et al (2015)

36 MSOD/Medical Deans 2012, p16. PGY1 cited in Scott et al (2015)

37 MTRP 17th Report 2014, p. 26

38 Ibid, p. 25

In announcing the cessation of the PGPPP, the Commonwealth Department of Health noted that

> *the PGPPP was introduced at a time when there was not enough demand for GP training places, and attracting hospital doctors into a career in general practice was necessary, but that is no longer the case. Demand for places on the Australian General Practice Training (AGPT) program has exceeded supply for a number of years. The PGPPP funding will be redirected to significantly expand AGPT program training places from 1 January 2015. AGPT training places will increase from 1,200 to 1,500 new places per year by 2015.*

Certainly, recent published data on the number of doctors in general practice training reflects the increasing demand for general practice training places — the two Colleges accredited to provide general practice training had a combined total of 4,087 training positions / trainees in 2013, an 18.6% increase from the previous year.[39] With the ending of PGPPP, a number of jurisdictions are now funding some general practice training positions, in recognition of the need for better integration of acute and primary health services.

It remains unclear as to the extent to which prevocational GP placements influence decisions to pursue general practice training and/or whether the PGPPP program contributed to the increase in demand for GP training places. Of course, there are other benefits for doctors undertaking GP terms irrespective of their career decisions, with a better understanding of the general practice environment helping future practice — perhaps an example of 'generalism'.

The development of hospitalist or career medical officer roles within the health system has taken different forms, with formal, university qualifications now available in some states to build the skills and knowledge of doctors entering those roles.

What is the role of internship in supporting pathways into areas of workforce demand such as generalist careers? What could make it more effective?

Rural and regional careers

As discussed previously, a key focus of national and state workforce policy has been to ensure availability and viability of medical workforce in regional and rural locations. Significant investment has been made in infrastructure and programs to support rural training, including rural clinical schools and University Departments of Rural Health as well as new medical schools based in regional and rural locations. At a postgraduate level, preferential rural recruitment programs have been used to facilitate graduates with an interest in rural practice to complete the majority of their prevocational training in a rural location. The Commonwealth Prevocational General Practice Placement Program included a requirement that 50% of all placements occur in rural and remote areas.

The Centre for Research Excellence in Medical Workforce Dynamics report examined available research on factors influencing choice of rural location, noting that *"by far the most common factor associated with rural practice across many countries and studies is the rural background of the doctor".*[40] The report cites research findings of

> *a strong association for GPs who spent more than 5 years growing up in a rural area, and for specialists who spent more than 11 years growing up in a rural area.*[41]

The report noted a scarcity of data on when in their pathway doctors make decisions to practice in rural and remote locations. It cites Medical School Outcomes Database data on the location preferences of final year medical students and PGY1s, which shows that 16.4% of PGY1 doctors surveyed preferred to be in rural and remote areas with only 4% preferring to be in towns of less than 10,000 people.[42]

39 MTRP 17th Report, p.55.

40 Scott et al (2015) *Medical Career Path Decision Making; A Rapid Review* University of Melbourne and Monash University p.25

41 Ibid

42 Ibid, p.26

The initiatives to support rural training have had varying success. They raise some rather more general questions about the relationship between internship, namely a general registration process, and career pathways. How critical and/or feasible is it for the general registration process to support doctor's career decisions, including specialty or location of practice? Are there alternative ways to facilitate career decisions?

Discussion questions

12. How important is it for the general registration process to support doctors' career decisions, including specialty or location of practice?
13. Are there alternative ways to facilitate such career decisions if the structure of internship
was to change?
14. Can or should the internship system be a mechanism for attracting doctors into specialties/locations of workforce need?
15. From a careers point of view what might be the risks and benefits of early streaming?

EIGHT

Term of Reference 4: Models to support expansion of intern training settings

The number of intern positions available nationally is determined by each State and Territory based on workforce need and capacity to train. Workforce requirements are based on forecast demand across public and private health services and the workforce supply necessary to meet this demand.

In recent decades, there has been an increase in the number of medical schools and a consequent increase in number of students requiring intern placement. The constraints on the capacity of public health services, the default intern training setting, to offer internships raises the issue for this review of considering innovative models to support expansion of intern training settings.

Barriers/constraints on expansion of intern training

The constraints on the capacity of health services to offer internships include:

1. The ability and willingness to fund the training infrastructure, salary costs, clinical caseload and supervision requirements for each position. Interns are new graduates with limited clinical experience and require supervision and support. As a result, establishment of each additional intern position requires investment in supervision and training, though there are economies of scale with increasing numbers of positions. As previously noted, the total cost of supporting an intern position, inclusive of salary has been estimated to range from $100,000 — $120,000 per position.
2. The ability to provide adequate supervision and support to interns, particularly in the context of the growing demands of delivering patient care services to meet the needs of their local communities. It is noted however, that supervision and support are required irrespective of whether new graduates are employed as interns or not.
3. The requirement for all interns to undertake mandatory terms in surgery, medicine and emergency care in their first year has been cited as a barrier to establishing new intern positions. Anecdotal advice from public facilities suggests that a key bottleneck for expanding intern training opportunities is the requirement for emergency medicine exposure. In the majority of states and territories, this exposure is provided through public Emergency Departments (EDs). Most EDs are busy patient care environments. As a result, for some EDs it is not feasible to divert registrar and consultant resources from patient care to intern education and training in an environment whereby the demand for ED services is constantly increasing.

In some cases, health services have cited a growing constraint on their ability to provide positions with sufficient clinical experience and exposure to meet the learning outcomes required for interns.

Private, general practice and community settings

The majority of internship positions are provided and paid for by the State and Territory public health system. Since 2013, the Commonwealth has supported access to internship positions for international full fee paying students in private facilities and rural and regional locations.

The Commonwealth Medical Internship (CMI) initiative is designed to increase capacity to train medical interns in alternative settings. It has so far provided funding to support up to 100 positions in private settings. Positions in the initiative come with a return of service obligation for graduates in a rural/regional location. Only international full fee paying medical graduates from on shore Australian medical schools who have not obtained a state or territory position are eligible to apply. This currently represents a very small component (3%) of the total intern positions available if all 100 positions are filled.

To date, the private hospital sector has not provided intern training positions outside of the CMI initiative or without funding and support from States and Territories. Private hospitals face similar cost barriers to creating intern positions to those of the public system, with some additional constraints. Most private facilities lack the appropriate training facilities required for intern training as well as training resources, such as registrars, to provide supervision for interns. Private hospitals generally do not take on doctors as employees, instead using a fee for service model where doctors derive income from billing patients. The requirements for accreditation, training of supervisors in assessment processes and so on, represents an additional consideration for private facilities wishing to establish positions. It is also reported that private hospital terms may be lower priority to be filled in the event of competing staffing requirements in the public system.

In the case of general practice, a number of jurisdictions are now funding some general practice training positions that were previously funded through the Commonwealth Prevocational General Practice Placement Program. This is in recognition of the need for better integration of acute and primary health services. However it is understood this funding does not support the same number of positions that were previously funded through PGPPP.

While not an evaluation of PGPPP itself, a recent South Australian paper examined the experiences of doctors undertaking emergency care terms in emergency departments and in general practice settings with emergency exposure, some of the latter being funded through the PGPPP. The review found that interns were well supervised in both settings, with opportunities to learn from undifferentiated and high acuity emergency presentations, though with some disparities in learning opportunities between the two settings.[43]

Given the barriers outlined here, and the fact that intern training delivered almost entirely by the public health system appears inconsistent with the profile and nature of health service delivery today, how can intern training be expanded to better incorporate general practice, community and private hospital settings? Would it be useful to have a principle that intern training should adapt to new and emerging models of care, such as ambulatory care models?

Training in the service delivery context

The most common and long standing employment model for interns is a one year contract. The one year contract reflected the registration requirement and enabled employers to (selectively) alter employment numbers and mix, particularly where employers had little or no say in the graduates allocated to them for an internship. As such, the internship arrangement can also be seen to have advantages to employers as they get to observe and choose, without being obliged to offer a longer term contract as would be normal in many other public sector appointments.

Some jurisdictions have two-year appointments in recognition of the fact that most graduates will undertake at least two years hospital based employment before streaming into specialty or general practice training. It is also an employee retention strategy, for example, to retain graduates in regional centres. From a training perspective such two-year arrangements could potentially provide more flexibility in term rotations and duration to meet the stated purposes of provisional registration.

Inherent in any employment arrangement from an employer's perspective is a service role, which as previously noted, provides the opportunity for interns to consolidate their skills while contributing to the productivity of the clinical service. Internship is a balance between training and education and service delivery, with scales tipped in either direction impacting on the productivity of the service role.

The extent to which the service role of interns has changed over time is unclear, given the introduction of shorter working weeks, restrictions on unpaid overtime, and other limits on hours worked, for example to reduce fatigue. Moreover, it is likely that these changes have been greater in larger and better staffed teaching hospitals than regional and rural centres. While it is widely reported that responsibilities and the work role of the intern has changed, there appears to be little documentary evidence of this. Moreover, the value-add that the medical graduate can bring to some of the allocated tasks seems to be fairly small, for the intern, patient and health care system. What has formally and informally changed in the roles and responsibilities of interns?

43 Morefield et al (2014) Core terms in emergency medicine for interns in South Australia: Training experiences in emergency departments and in general practice settings with emergency exposure SAMET

It is also unclear the extent to which the productive value of interns is constrained by the current internship model and whether changes to this model could, for example, improve the proposition for the private sector to invest in intern training. One factor cited as a potential barrier to internship in the private sector is the limitation on interns to independently order private pathology or radiology tests because of the lack of a provider number. Are there other constraints that could be examined?

Based on the premise that there has been a reduction in role responsibilities and an increase in education time in the internship year, it has been suggested that the model of appointment (and therefore pay) should be more equivalent to that of the apprenticeship model. In raising this, it must be noted that apprenticeships are usually for longer than one year, and no examples of graduate apprenticeships have been found. Other than reducing the direct costs of employment, and making explicit the service and training components, it is not clear that there are other advantages to this perspective.

In other professions, such as law, graduates are employed on a salaried basis, rather than paid an hourly rate as occurs in Australia. This is also the model of employment for junior doctors in the UK. Would there be advantages to this model for Australia?

Discussion Questions

16. What models might be viable to expand intern positions beyond the largely public hospital system model we have today?
17. How could/should internships in the private and community sectors be funded and supported?
18. Would there be value in linking availability of a paid intern year to a subsequent year of service
in an area of workforce need?
19. What options could be considered to fund training opportunities for medical graduates?

NINE

Where to from here

This discussion paper will be used to inform a comprehensive national consultation process to occur during the coming months, which will seek input from a range of stakeholders with an interest in this topic, including medical students and junior doctors, private and public health services, medical schools, Postgraduate Medical Councils, regulatory bodies, jurisdictions and consumers.

The consultation will also involve a written submissions process on the matters raised in this paper. Written submissions are being requested by **Friday 10th April 2015**.

A submission template to be used for responses is available on the COAG Health Council web page at www.coaghealthcouncil.gov.au/medicalinternreview.
The template provides an opportunity to address questions raised in the paper as well as to raise any other matters that need to be considered. Use of this template will greatly facilitate the review and analysis of submissions.

Following the consultation process, an options paper will be developed setting out potential pathways for change. Further, targeted consultation will occur on the options paper to inform development of the final report. It is anticipated that a final report will be completed by November 2015.

Phase Two of this Review will then consider the impacts of the recommendations made in this phase, as well as training options for international full fee paying students in the context of the recommendations.

APPENDIX ONE

Acronyms

ACRRM	Australian College of Rural and Remote Medicine
AHMAC	Australian Health Ministers' Advisory Council
AHPRA	Australian Health Practitioner Regulation Agency
AMC	Australian Medical Council
AIHW	Australian Institute of Health and Welfare
COAG	Council of Australian Governments
CPMEC	Confederation of Postgraduate Medical Education Councils
CMI	Commonwealth Medical Internship programme
GMC	General Medical Council (UK)
HWA	Health Workforce Australia
IFF	International Full Fee Paying medical students (at Australian Universities)
LMCC	Licentiate of the Medical Council of Canada
MABEL	Medicine in Australia: Balancing Employment and Life
MBA	Medical Board of Australia
MCC	Medical Council of Canada
MCNZ	Medical Council of New Zealand
MDANZ	Medical Deans Australia and New Zealand
MSOD	Medical Schools Outcomes Database
MTRP	Medical Training Review Panel
NRAS	National Registration and Accreditation Scheme
PDP	Professional Development Plan
PGPPP	Prevocational General Practice Placement Program
PGY1	Postgraduate Year 1
PGY2	Postgraduate Year 2
PMC	Postgraduate Medical Council
RACGP	Royal Australian College of General Practitioners
USMLE	United States Medical Licensing Examination

APPENDIX TWO

Domestic & International Medical School Graduates in Australian Universities by State/Territory, 2008-2018[44]

	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
Domestic (D) International (I)	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I
New South Wales																						
Newcastle/UNE	77	18	85	21	104	21	70	20	140	29	151	22	186	38	178	29	179	26	192	34	170	32
Sydney	208	55	208	54	221	35	222	32	237	38	236	53	265	58	220	70	232	78	228	80	228	80
Notre Dame Sydney	0	0	0	0	0	0	103	0	106	0	108	0	108	0	115	0	125	0	120	0	120	0
UNSW	177	39	163	36	166	55	187	36	198	46	212	63	232	54	225	60	187	63	216	62	214	59
UWS	0	0	0	0	0	0	86	0	91	9	107	7	112	23	105	15	107	23	103	17	102	20
Wollongong	0	0	0	0	63	4	67	10	66	11	72	8	75	7	76	9	76	9	75	12	75	12
TOTAL NSW	**462**	**112**	**456**	**111**	**554**	**115**	**735**	**98**	**838**	**133**	**886**	**153**	**978**	**180**	**919**	**183**	**906**	**199**	**934**	**205**	**909**	**203**
Victoria																						
Monash	159	52	165	74	181	94	219	70	290	67	0	0	0	0	0	0	0	0	0	0	0	0
Monash PG	0	0	0	0	0	0	0	0	0	0	64	6	68	15	82	10	75	7	72	10	72	10
Monash UG	0	0	0	0	0	0	0	0	0	0	237	58	285	49	263	53	248	63	263	58	259	56
Deakin	0	0	0	0	0	0	109	0	123	1	144	5	131	2	132	6	131	5	130	12	130	12
Melbourne	199	88	198	97	212	90	234	89	231	83	0	0	0	0	0	0	0	0	0	0	0	0
Melbourne MD	0	0	0	0	0	0	0	0	0	0	0	0	302	23	289	36	294	36	295	40	295	42
Melbourne UG	0	0	0	0	0	0	0	0	0	0	166	73	0	0	6	1	2	1	0	0	0	0
TOTAL VIC	**358**	**140**	**363**	**171**	**393**	**184**	**562**	**159**	**644**	**151**	**688**	**156**	**789**	**89**	**776**	**106**	**750**	**112**	**760**	**120**	**756**	**120**
Queensland																						
Bond (a)	0	0	55	4	74	1	81	1	69	1	83	2	80	2	77	2	92	2	95	1	95	1
Griffith (a)	70	0	116	2	151	0	133	0	150	0	153	0	147	0	149	0	152	6	154	8	155	10
Queensland	238	51	279	67	332	77	290	98	307	130	313	126	320	108	308	132	308	113	300	120	300	120
James Cook	66	0	82	2	94	3	88	2	92	3	137	2	143	23	170	27	171	17	175	23	203	34
Total Qld	**374**	**51**	**532**	**75**	**651**	**81**	**592**	**101**	**618**	**134**	**686**	**130**	**690**	**133**	**704**	**161**	**723**	**138**	**724**	**152**	**753**	**165**
Western Australia																						
Notre Dame WA(a)	75	0	80	0	86	0	98	0	104	0	98	0	96	0	98	0	111	0	106	0	106	0
UWA	142	10	182	15	207	25	172	0	164	0	0	0	0	0	0	0	0	0	209	30	209	30
UWA PG	0	0	0	0	0	0	0	0	0	0	58	0	58	0	60	0	58	9	0	0	0	0
UWA UG	0	0	0	0	0	0	0	27	0	21	126	28	134	31	147	32	130	22	0	0	0	0
Total WA	**217**	**10**	**262**	**15**	**293**	**25**	**270**	**27**	**269**	**21**	**282**	**28**	**288**	**31**	**305**	**32**	**299**	**31**	**315**	**30**	**315**	**30**
South Australia																						
Adelaide	98	48	83	38	94	40	97	21	111	24	127	25	153	36	150	21	157	15	164	25	124	35
Flinders	75	22	74	28	102	14	109	19	113	19	111	11	121	20	143	20	143	25	136	30	136	30
Total SA	**173**	**70**	**157**	**66**	**196**	**54**	**206**	**40**	**224**	**43**	**238**	**36**	**274**	**56**	**293**	**41**	**300**	**40**	**300**	**55**	**260**	**65**
Tasmania																						
Tasmania	64	14	73	21	89	11	67	28	97	16	105	14	88	27	97	23	86	25	104	25	95	25
Australian Capital Territory																						
ANU(a)	90	4	72	6	83	4	75	4	87	9	85	8	93	9	83	9	100	8	90	10	90	10
Total Australia	**1738**	**401**	**1915**	**465**	**2259**	**474**	**2507**	**457**	**2777**	**507**	**2970**	**525**	**3200**	**525**	**3177**	**555**	**3164**	**553**	**3227**	**597**	**3178**	**618**
Annual Increase			177	64	344	9	248	-17	270	50	193	18	230	0	-23	30	-13	-2	63	44	-49	21
Annual Increase (%)			10.2	16	18	2	11	-3.7	10.8	11	7	3.6	7.7	0	-0.7	5.7	-0.4	-0.4	2	8	-1.5	3.5

44 Medical Training Review Panel 15th and 17th Reports

APPENDIX THREE

Total Graduates of Australian Universities by State/Territory, 2008-2018[45]

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New South Wales	574	567	669	833	971	1039	1158	1102	1105	1139	1112
Victoria	498	534	577	721	795	844	878	882	862	880	876
Queensland	425	607	732	693	752	816	823	865	861	876	918
Western Australia	227	277	318	297	290	310	319	337	330	345	345
South Australia	243	223	250	246	267	274	330	334	340	355	325
Tasmania	78	94	100	95	113	119	115	120	111	129	120
Australian Capital Territory	94	78	87	79	96	93	102	92	108	100	100
Total	**2139**	**2380**	**2733**	**2964**	**3284**	**3495**	**3725**	**3732**	**3717**	**3824**	**3796**
Increase		241	353	231	320	211	230	7	-15	107	-28
% Increase		11.3	14.8	8.5	10.8	6.4	6.6	0.2	-0.4	2.9	-0.7
Increase 2008 — 2018											1657.0
% Increase 2008 — 2018											77.5

45 Medical Training Review Panel 15th and 17th Reports

APPENDIX FOUR

Number of Intern Positions by State/Territory, 2005-2014

	2005*	2006*	2007*	2008*	2009	2010	2011	2012	2013	2014	2015
New South Wales	566	628	533	688	668	657	756	850	927	955	980
Victoria	397	406	447	454	506	557	625	698	707	753	761
Queensland	280	323	357	411	444	558	644	663	678	705	705
South Australia	171	183	213	227	246	230	247	256	276	278	254
Western Australia	132	137	155	175	228	240	267	282	300	297	317
Tasmania	52	71	56	51	62	58	71	73	75	75	76
Northern Territory	24	23	15	24	27	32	35	41	44	44	44
Australian Capital Territory					62	62	78	88	93	96	92
Commonwealth#									22	76	
Australia	**1622**	**1771**	**1776**	**2030**	**2243**	**2394**	**2723**	**2951**	**3122**	**3279**	**3184**
Increase on previous year (%)		9.2	0.3	14.3	10.5	6.7	13.7	8.4	5.8	5.0	-2.9
Increase 2005 — 2015											1562
% increase 2005 — 2015											96.3

* Combines Australian Capital Territory and New South Wales data (NSW/ACT)

\# 2015 figures not yet available

References

Aram, N., Brazil, V., Davin, L., & Greenslade, J. (2013). Intern underperformance is detected more frequently in emergency medicine rotations. *Emergency Medicine Australasia, 25*(1), 68-74. doi: 10.1111/1742-6723.12031

Australian Institute of Health and Welfare. (2001). Australian hospital statistics 1998-99. Retrieved January 16, 2015 from www.aihw.gov.au/publication-detail/?id+6442467163&tab=2

Australian Institute of Health and Welfare. (2014). Australian hospital statistics 2012-13. Retrieved January 16, 2015 from www.aihw.gov.au/publication-detail/?id=60129546922

Bingham, C. M., & Crampton, R. (2011). A review of prevocational medical trainee assessment in New South Wales. *The Medical Journal of Australia, 195*(7), 410-412. doi: 10.5694/mja11.10109

Carr, S. E., Celenza, T., & Lake, F. R. (2014). Descriptive analysis of junior doctor assessment in the first postgraduate year. *Medical Teacher, 36*(11), 983-990. doi: 10.3109/0142159X.2014.918255

Collins, J. (2010). Foundation for excellence an evaluation of the foundation programme. *Medical Education England.* Retrieved January 16, 2015 from http://hee.nhs.uk/wp-content/uploads/sites/321/2012/08/Foundation-for-excellence-report.pdf

Dental Board of Australia. (2014). Scope of practice registration standard and guidelines. Retrieved January 14, 2015 from www.ada.org.au/dentalboardofaustralia.aspx

Doherty, R. L. (1988). Australian medical education into the 21st century. April 1988. Canberra: Australian Government Publishing Service, 1988.

Geffen, L. (2014). A brief history of medical education and training in Australia. *The Medical Journal of Australia, 7*(201), 19-22. doi: 10.5694/mja14.00118

Hirsch, D., Holmboe, S., Cate, (2014). Time to Trust: Longitudinal Integrated Clerkships and Entrustable Professional Activities. Academic Medicine, Vol 89, No. 2 Holmboe, E., Ginsburg, S., & Bernabeo, E. (2011). The rotational approach to medical education: Time to confront our assumptions. *Medical Education, 45*(1), 69-80. doi: 10.1111/j.1365-2923.2010.03847.x.

Klaber, R. E. (2014). Training and learning for the future: Making change happen. Postgraduate Medical Journal, 90(1062),183-184. doi:10.1136/postgradmedj-2014-132664

Medical Board of Australia. (2015). Granting general registration as a medical practitioner to Australian and New Zealand medical graduates on completion of intern training. Retrieved January 16, 2015 from www.aihw.gov.au/publication-detail/?id=60129546922

Morefield, K., Anthony, A., Bain, R., & Jones, A. (2014). Core terms in emergency medicine for interns in South Australia: Training experiences in emergency departments and in general practice settings with emergency exposure. *South Australian Medical Education & Training.* Retrieved 06 February 2015 from www.samet.org.au/wp-content/uploads/2014/12/REPORT-17.2-HAC-Core-terms-in-emergency-final-web-.pdf

NSW Ministry of Health. (2013). National medical intern summit background paper. Retrieved January 14, 2015 from www.health.nsw.gov.au

Rowe, C. J., Campbell, I. S., & Hargrave, L. A. (2014). Rural experience for junior doctors: Is it time to make it mandatory. *The Australian Journal of Rural Health, 22*(2), 63-67. doi: 10.1111/ajr.12082

Scott, A., & Joyce, C. M. (2014). The future of medical careers. *The Medical Journal of* Australia, 201(2), 82-83. doi: 10.5694/mja13.00063

Securing the future of excellent patient care. (2013). Retrieved January 16, 2015 from www.shapeoftraining.co.uk/home.asp

Tallentire, V. R., & Smith, S. E. (2012). Medical error: Time to get real. *Medical Education, 46*(7), 630-635. doi: 10.1111/j.1365-2923.2012.04292.x.

The Department of Health. (2014). Medical training review panel: 17th report. Retrieved January 16, 2015 from www.health.gov.au/internet/main/publishing.nsf/Content/work-pubs-mtrp-17

The Royal College of Physicians and Surgeons of Canada. Directions for Residency Education, (2009). A Final Report of the Core Competency Project. February 2009. Ottawa: The Royal College of Physicians and Surgeons of Canada.