



# National Clinical Training Review

Report to the

Medical Training Review Panel  
Clinical Training Sub-Committee

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# Contents

<b>Background</b> .....	1
Methodology .....	1
<b>Executive Summary</b> .....	3
Recommendations .....	4
<b>1. Clinical Training in Australian Medical Schools</b>	
1.1 Context .....	8
1.2 Entry Requirements .....	8
1.3 Early Clinical Training .....	9
1.4 Clinical Skills Laboratories .....	10
1.5 Clinical Placements.....	10
1.6 Length of Placements.....	11
1.7 Specialties .....	11
1.8 Organisation of Clinical Placements.....	12
1.9 Clinical Training in a Rural Setting.....	12
1.10 Community Settings .....	13
1.11 Private Sector.....	13
1.12 General Practice .....	14
1.13 Indigenous Health.....	14
<b>2. Quality Assurance in Clinical Training</b>	
2.1 Elements Required for Quality Clinical Placements .....	16
2.2 Casemix .....	16
2.3 Supervision .....	16
2.4 Infrastructure.....	17
<b>3. Clinical Placement Capacity, Challenges and Strategies</b>	
3.1 Current Clinical Placement Capacity.....	18
3.2 Challenges to Expanding Capacity for Clinical Placements .....	18
3.3 Strategies for Expanding Capacity .....	18
<b>References</b> .....	20
<b>APPENDICES</b>	
Appendix I: Commencing Medical Students 2000-2010 .....	22
Appendix II: Graduate Projections 2002-2012 .....	24
Appendix III: Clinical Training Overview .....	26
Appendix IV: Specialty Rotations by School.....	29
Appendix V: 2007 Clinical Rotation Places by Medical School, Hospital and Specialty .....	30
Appendix VI: Projected Final Year Placement Requirements 2007-2012 .....	37

## Background

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As a result of discussions with the chair of the Medical Training Review Panel (MTRP) in early 2007 regarding future planning for clinical training based on projected medical student numbers, Medical Deans Australia and New Zealand (Medical Deans) was contracted to undertake a project to gather data on clinical education and training requirements.

The project reports to the MTRP through the Clinical Training Sub-Committee.

The project has three components:

Phase 1: What is the current situation for clinical training?

Phase 2: What are the elements required for quality clinical placements?

Phase 3: Develop agreement about what constitutes quality clinical placements

Phase 4: Determine true capacity and how this can be supported

In addition, an analysis of past data kept by Medical Deans on student and graduate numbers provides a picture of numbers and placements as well as on-going work arising from Phases 1-4, particularly in regard to expanding current capacity.

The project was originally scheduled to run from 1 July 2007 to 30 June 2008, however, it was not until September 2007, when a full-time Project Officer was engaged, that the bulk of the work commenced.

### Methodology

This part of the review has involved the following key elements:

#### Data gathering

- Medical Deans' student statistics
- Structure and content Schools' clinical training programs
- Organisation of clinical training placements and rotations
- Current clinical training sites and capacities
- Elements of quality placements and assessment of quality
- Strategies for addressing clinical training needs
- State health department initiatives in regard to clinical training and clinical placements

#### Consultation with stakeholders

- Deans, Clinical Deans, senior medical school administrative staff
- Jurisdictional representatives on the Health Workforce Principal Committee
- Australian Medical Council
- Medical students
- Australian Medical Students Association

An initial pilot study of three medical schools was undertaken in September 2007 to trial and evaluate the project methodology, and identify key issues and strategies to meet future clinical training requirements. The three schools used for the pilot study were Newcastle, Flinders and Melbourne. From this study an Interim Report was prepared and submitted to the Clinical Training Sub-Committee in October 2007.

It was clear from the pilot study that the complexity and diversity of medical programs would require face-to-face discussions between the Project Officer and relevant staff and stakeholders rather than a standard survey document. Many of the issues that have been drawn out in this report have been as a result of frank conversations regarding clinical training

that would not necessarily have been reflected in a survey. The short time frame for reporting also required data to be gathered and analysed quickly and the timing particularly for medical schools at the end of the academic year with exams, applicant interviews, and preparation for the new academic year meant that their time to complete a survey was limited.

This draft report, while a significant undertaking in a very short period of time, is clearly the first phase in the development of a national approach to understanding the impact of increased student numbers on clinical placements and how placements can be expanded. It is noted that a concurrent study by CPMEC has been prepared for the pre-vocational years which signals a strategic commitment to the development of a continuum for medical training.

## Executive Summary

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Medical Deans Australia and New Zealand (Medical Deans) has conducted a national review of clinical training in Australian medical schools on behalf of the Commonwealth Department of Health and Ageing (DoHA). The review has been in response to the increase in the number of medical student places, the establishment of new medical schools and the impact of these factors on the provision of quality clinical training for medical students.

Before 2000, there were 10 medical schools in Australia and this number will almost double in 2008. The Council of Australian Government's (COAG) communiqué of 2006 set out the health workforce strategy which included increasing medical student numbers by funding an additional 605 places and followed the earlier lifting of the cap on domestic full-fee paying students to 25 per cent. The communiqué also outlined agreement of the jurisdictions to provide clinical training places for the resultant number of medical students and interns.

As a result, commencing medical students dramatically increased in 2007 and 2008. The number of clinical places required for final year students will increase by 80 per cent over the period 2007 to 2012. This increase varies between medical schools ranging from 10.4 per cent to 180 per cent. It is noted that medical students are undertaking up to three years of supervised full-time clinical placements and the impact of the increased numbers will be felt as early as 2009.

Medical schools reported that capacity in all settings was concerning and that in certain specialties the situation is becoming critical. While pressure areas vary between schools, the majority of schools were concerned about securing sufficient general practice placements. Other pressure areas identified were paediatrics, emergency medicine and psychiatry.

Training a medical student is expensive. In 2006, the Auckland and Otago medical schools undertook an analysis of the real cost of training a medical student and estimated that it was NZ\$46K per student per annum, averaged over the duration of the medical degree. Based on this review, the New Zealand government increased its contribution to medical education by 50 to 70 per cent, differentiating between pre-clinical and clinical years. This funding is approximately 60 per cent greater than in Australia, despite recent changes in Commonwealth Support Places and the medical student loading. It is noted that in New Zealand there is a student contribution in the form of annual fees, which is approximately NZ\$10K per annum (GST is rebated).

While medical programs have some similarities there are a number of differences between them including the length of degrees, entry requirements, and the structure of the curriculum and clinical training. All schools use an integrated learning model where teaching and learning of basic medical and clinical sciences are supported by clinical skills training in labs and in health care settings. All medical students spend at least the final two years of their degree in direct patient contact in hospital, general practice, community health settings or a combination of all three.

The changing nature of medical practice such as shorter hospital stays, increased day procedures and a move to ambulatory settings and the private sector, means that medical schools no longer rely on public teaching hospitals alone for clinical placements. While increased involvement of public hospitals is necessary to respond to increased numbers, medical schools are looking to adapt their clinical training programs, particularly clinical placements, to include a wide range of health care settings to ensure that students are placed where patients are presenting and to prepare them for future practice options.

The challenge for medical schools in providing quality and sustainable clinical training for their students lies in overcoming barriers to expanding capacity of places including:

- identification of appropriate settings for increased numbers in traditional as well as new settings
- availability and engagement of suitably trained health care professionals to supervise clinical placements
- provision of infrastructure to support medical education in clinical settings including physical teaching space, accommodation, IT, and support staff
- a culture of service-delivery in some settings that does not value or include teaching in clinical practice

The success of the Rural Clinical Schools (RCS) program has been the result of a Commonwealth (Department of Health and Ageing) funding model for teaching staff and infrastructure. Students and teachers are well supported and education has become an integral part of health service delivery, at the same time enhancing the quality of that service. In addition, the injection of funding into regional communities and the commitment to expanding local health services has seen the development of partnerships with local government and business to further support clinical teaching.

Medical Deans recognises that targeted funding is required to overcome these barriers to expanding capacity that builds on the success of the rural clinical school model in urban and outer urban settings.

## Recommendations

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### **1. Integrating Medical Education into Service Delivery**

The increased demand on clinicians to focus on service delivery has seen a move away from education and training being an integral part of medical practice. Clinicians argue that they are now busier and have less time to teach and many private practitioners consider the opportunity cost of taking medical students too great. There is a need for a cultural change in health services management to integrate education and medical student training into healthcare delivery.

#### ***Recommendation 1***

***Medical Education needs to be an integral and adequately funded part of health care delivery***

### **2. Funding Medical Education**

Currently funding for medical education is fragmented with the Commonwealth Departments of Health and Ageing and Education, Employment, and Workplace Relations, and the jurisdictions supporting the system. Any provision of funding to support the expansion of clinical places should include some performance indicators that address teaching and learning. The Australian Healthcare Agreements (AHCA), for example, have not in the past included any explicit requirement or KPIs which are necessary to ensure that funding objectives are achieved. There is opportunity to embed this in the AHCA currently being negotiated. Funding for teaching needs to be considered by the National Health and Hospitals Reform Commission given that there are a number of stakeholders in the continuum of clinical medical education.

***Recommendation 2***

***Funding for teaching and infrastructure to be accompanied by performance indicators addressing teaching and learning objectives, for example, in the forthcoming Australian Healthcare Agreements.***

**3. Expanding Medical Education across the Spectrum of Health Services**

In order to effectively contribute to the development of a medical workforce that is prepared and capable to practice in a variety of settings, medical students must be able to see valued career paths in all areas of the Australian health system, especially rural and regional Australia and outer metropolitan areas where workforce shortages are acute. Without postgraduate training opportunities, medical students in a regional medical school have fewer teachers and role models and are forced to undertake postgraduate training in city hospitals with the likelihood that few will return. The result is that rural and regional Australia and outer metropolitan areas will continue to have inadequate access to health care.

Medical schools are increasingly looking to the private hospital sector as a source of clinical placements. Some schools have always had collaborative partnerships with local private hospitals while other schools have struggled to develop relationships with the private sector. The success of engagement with the private sector is dependent on selling the value of integrating teaching into service delivery and establishing partnerships with private health care providers. In addition, the move to extend vocational training into non public hospital areas through the Expanded Settings for Specialist Training Program could be extended to include students and pre-vocational trainees.

***Recommendation 3(a)***

***Provision of pre-vocational and vocational places in rural/regional/outer-urban areas and in private hospitals to ensure career paths for students in these locations and expand clinical placement capacity.***

***Recommendation 3(b)***

***Facilitate collaborative relationships between private health care providers, jurisdictions and universities in order to expand capacity***

**4. Collaboration**

The establishment of new schools post-2000 was generally the result of an attempt to address current and future workforce needs in regional Australia. Different models of clinical training and structure of specialty rotations can be attributed to geographic location as schools adapt their clinical placements to reflect the health needs of the communities in which they are based as well as the availability of health services. A number of collaborative arrangements between medical schools are in place to support and enhance clinical placement opportunities for these new schools as well as established schools. In addition, innovation in medical degree programs and curriculum development should be encouraged to ensure that current health practice and effective modes of medical education are incorporated.

***Recommendation 4***

***Collaborative arrangements between medical schools to be supported to enhance capacity and build long-term sustainability of clinical placements.***



## **5. Funding General Practice, Community and Private Settings**

While teaching should be built into hospital agreements and employment contracts of public hospital clinicians, the increasing move to using general practice, community settings and the private sector for clinical placements raises the issue of how to encourage medical practitioners to take students in these settings. Financial payment is provided by the Commonwealth to GPs taking students through the Practice Incentive Payment (PIP), however, similar financial incentives are not available to other community settings or for other private practitioners. As medical schools are increasingly looking to expand clinical training into general practice and community settings, it is timely to review the PIP scheme to ensure that it is able to adequately support teaching in general practice and extend into other areas of the private sector.

### ***Recommendation 5***

***Review Practice Incentive Payments and other initiatives to facilitate student teaching in the private sector.***

## **6. Quality Medical Teaching and Supervision**

It is important that medical teachers have the skills and confidence to supervise and train medical students. This includes not only the provision of professional development programs in teaching but also ensuring that the learning objectives of the placement and the roles and responsibilities of both the student and teacher are clearly defined and communicated.

Currently there are no quantifiable measures in regards to supervision and for determining true capacity for clinical placements. The Australian Medical Council has recently completed a review of its guidelines for assessing clinical placements. Further work needs to be undertaken to determine broad benchmarks and quantifiable measures for supervision such as ratios of students to supervisors, depending on the clinical training setting.

### ***Recommendation 6***

***Provision of educational and professional resources to ensure competent supervision of medical students.***

## **7. Vertical Integration of Medical Education**

Clinical teaching occurs in addition to clinical practice and service demands take precedence over teaching. It is therefore important that clinical teachers have adequate resources and support to give them time to teach, including administrative support.

In hospital settings where a consultant is working in a multidisciplinary team, medical student teaching is often undertaken by registrars, interns and other members of that team in addition to the consultant. It is important that these groups are supported in their teaching efforts. Similarly, GPs may have a registrar or intern to assist with teaching as well as the practice nurse and in some cases allied health staff.

A systematic focus on the vertical integration of medical education, as in these examples, will provide the best use of scarce human and physical resources. This would involve medical schools, Postgraduate Medical Councils, Colleges, and the Australian Medical Council. Other ways to lessen the burden on senior clinical teachers, particularly in general practice and community settings, is to structure placements so that students are not dependent on the one practitioner the entire time but instead access a number of different health settings during clinical placements.

***Recommendation 7***

***Develop structures to maximise use of teaching staff and resources through vertical integration.***

**8. Infrastructure**

Infrastructure to support medical education is a key element in ensuring quality clinical placements and has been the subject of targeted Commonwealth funding in the past when establishing rural clinical schools. As medical student numbers increase, there is a need to expand existing infrastructure in current clinical placement sites, particularly public hospitals so that students can be adequately accommodated and learning supported.

Similarly, infrastructure is required for general practices, community and private settings. It is recognised that this infrastructure will be used not only by medical students but by pre-vocational and vocational trainees as well as nursing and other allied health students.

Clinical skills laboratories are essential for clinical training to provide a flexible and controlled learning environment which allows learners to make mistakes while mastering procedures and other skills. There is a need to develop and expand clinical skills laboratories because of these educational benefits and in response to casemix changes reducing the availability of long-stay hospital inpatients.

***Recommendation 8***

***Increase infrastructure to expand capacity in existing and non-traditional settings including:***

- ***Teaching space and facilities including IT***
- ***Clinical skills laboratories***
- ***Consulting space in general practice and community settings***
- ***Student accommodation in non-urban settings***

**9. Indigenous Health Placements**

Closing the gap on Indigenous health is a national priority and the Indigenous Health Curriculum Framework, nationally agreed by medical schools and endorsed by the Australian Medical Council, includes provision for Indigenous Health to be an integral part of medical education. In order to achieve this objective it is important that Indigenous Health clinical placement sites are adequately resourced to ensure quality clinical training can be provided.

***Recommendation 9***

***Resourcing to ensure that all students gain clinical experience in an Indigenous health setting***

# 1. Clinical Training in Australian Medical Schools

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## 1.1 Background

In 2007, there were 17 medical schools across Australia and this number has increased to 19 in 2008 with the Deakin and Notre Dame Sydney programs enrolling their first cohorts of students. In addition, Monash has introduced a four-year graduate entry program at its Gippsland campus commencing in 2008 and a Joint Medical Program between Newcastle and the University of New England commences in 2008.

Accreditation of medical schools and medical courses is the responsibility of the Australian Medical Council (AMC) which sets the standards and provides external independent assurance of the quality of basic medical education.<sup>1</sup>

While there are some similarities between medical degrees there are a number of differences. This diversity is encouraged by the AMC. The following table summarises some of the similarities and differences between medical degrees in regard to structure and clinical training.

**Table 1: Similarities and differences between medical degrees and clinical training**

Similarities	Differences
<ul style="list-style-type: none"><li>• Medical degrees are Bachelor level</li></ul>	<ul style="list-style-type: none"><li>• Entry requirements for medical degrees</li></ul>
<ul style="list-style-type: none"><li>• Clinical training commences from week one of a medical degree</li></ul>	<ul style="list-style-type: none"><li>• Length of medical program</li></ul>
<ul style="list-style-type: none"><li>• Full-time clinical placements in final years of degree</li></ul>	<ul style="list-style-type: none"><li>• Number of years in full-time clinical rotations</li></ul>
<ul style="list-style-type: none"><li>• Collaborative arrangements with clinical service providers to enable clinical teaching</li></ul>	<ul style="list-style-type: none"><li>• Length of rotation terms</li></ul>
<ul style="list-style-type: none"><li>• Use of hospitals for clinical rotations</li></ul>	<ul style="list-style-type: none"><li>• Structure of specialty rotations</li></ul>
<ul style="list-style-type: none"><li>• Dependence on general practice for clinical training</li></ul>	<ul style="list-style-type: none"><li>• Engagement with the private sector</li></ul>
<ul style="list-style-type: none"><li>• Use of community settings in early clinical training</li></ul>	<ul style="list-style-type: none"><li>• Organisation of clinical placements</li></ul>
<ul style="list-style-type: none"><li>• Use of clinical skills laboratories, simulated patients</li></ul>	<ul style="list-style-type: none"><li>• Use of clinical school model</li></ul>
<ul style="list-style-type: none"><li>• Clinical training in a rural setting</li></ul>	<ul style="list-style-type: none"><li>• Opportunities for clinical experience in an Indigenous health setting</li></ul>
<ul style="list-style-type: none"><li>• Assessment of clinical placements</li></ul>	<ul style="list-style-type: none"><li>• 12 month rotations in a rural setting</li></ul>
<ul style="list-style-type: none"><li>• University-delivered professional development opportunities for clinical teachers</li></ul>	

## 1.2 Entry Requirements

Pathways into a medical degree are by school leaver or graduate entry with some schools (eg Melbourne, UWA and Monash) offering both. The duration of a medical degree varies and school leaver entry programs are typically five or six years in length and graduate entry programs four years. Table 2 shows the schools offering school leaver or graduate entry medical programs and the duration of each program.

**Table 2: Pathways into medical degrees and course duration**

School Leaver Entry#	Course Duration (Years)	Graduate Entry	Course Duration (Years)
Adelaide	6	ANU	4
Bond*	4.6	Deakin	4
James Cook	6	Flinders	4
Melbourne**	6	Griffith	4
Monash	5	Melbourne	4.5
Newcastle/UNE^	5	Monash – Gippsland	4
UNSW	6	Notre Dame Sydney	4
Tasmania	5	Notre Dame WA	4
UWA	6	Queensland	4
Western Sydney	5	Sydney	4
		UWA	4.5
		Wollongong	4

# Most school leaver-entry programs take students who may have an undergraduate degree

\* Bond University operates a three-term year with medical students commencing in second semester (May)

\*\* Melbourne will change to a graduate entry only course from 2011

^ Joint Medical Program (JMP) with University of New England from 2008

The types of places medical students occupy include Commonwealth Supported Places (CSP), Bonded Medical Places (BMP), Medical Rural Bonded Scholarships (MRBS), full-fee paying domestic places and international student places. In addition, South Australia and Queensland provide a limited number of State government-funded medical scholarship places. Not all schools offer domestic full-fee places or international student places. Bond University, however, only offers full-fee paying domestic places.

### 1.3 Early Clinical Training

All schools provide an integrated learning program where visits to hospitals, GPs or other health services are used to contextualize and further explore the clinical problems and systems learned in the classroom and skills labs. Clinical training in the early years is usually conducted in groups and sessions are of a short duration. The length of time students spend in community settings, GP and hospitals varies between medical schools.

While there may be some use of hospital settings during this phase, in general students are undertaking visits and placements in general practice and community health settings such as aged care facilities. Student participation varies between settings and is often limited to observation, particularly in general practice. The extent of patient contact is much less than in later years although there is an expectation that there would be some time given to discussing patient care with students.

Nevertheless, some schools have indicated emerging difficulties in placing students in clinical settings in the early years with the increase in student numbers resulting in junior and senior students competing for places. Flinders reported that in the past there were enough general practices to provide two to three half day places for junior students and three visits to consulting clinics. The increase in student numbers has resulted in senior students being given priority for these places over the junior students. Similarly, there is less room for junior students on hospital wards as senior students take priority.

#### 1.4 Clinical Skills Laboratories

The use of clinical skills laboratories in clinical settings is also expanding both in Australia and internationally. These facilities provide a flexible, controlled learning environment, which allows learners to make mistakes while mastering procedures and other skills, and avoids the dangers of beginners practising procedures with recognised risks on patients. The clinical skills laboratory environment is suitable for clinical skills education for all health professional trainees at pre-graduate, pre-vocational and vocational training levels and is ideally suited to promoting multi-disciplinary teamwork.

Medical schools have attempted to develop these facilities in hospital settings because of these educational benefits and as a response to increasing training requirements in a setting of casemix changes reducing the availability of long-stay hospital inpatients, who in the past volunteered to assist with this training. However, in comparison to Europe, the UK and North America, this development has been limited and patchy. Coordination with pre-vocational and vocational medical education and with education in other health disciplines has rarely been achieved.

#### 1.5 Clinical Placements

Clinical placements enable a student to practically apply the skills and knowledge acquired during the early part of their degree. The AMC is of the view that clinical placements are the most effective tool to enable students to develop the clinical competence and judgment required to practise safely and effectively as interns<sup>1</sup>. In the traditional hospital placement, students are attached to clinical teams or consultants and participate in bedside teaching, ward rounds, clinics and clinical meetings. There is opportunity for students to act in a pre-intern role by clerking and examining patients. The clinical rotation terms also involve students in formal teaching sessions such as tutorials and lectures either at the clinical school, hospital or via videolink to the main university campus.

The duration of a medical degree impacts on the number of years students spend in clinical settings. Table 3 shows school leaver entry programs usually provide a longer period of full-time clinical rotations.

**Table 3: Number of Years in Full-time Clinical Placements by Medical School**

2 Years	2.5 Years	3 Years
Deakin (GE)	Bond (SLE)	Adelaide (SLE)
Flinders (GE)	Melbourne	James Cook (SLE)
Griffith (GE)	(SLE & GE)	Monash (SLE)
UNSW (SLE)	Newcastle (SLE)	Western Australia
ND (Syd) (GE)	Tasmania (SLE)	(SLE & GE)
ND (WA) (GE)	Wollongong (GE)	UWS (SLE)
Queensland (GE)		
Sydney (GE)		

SLE = School Leaver Entry (provision for taking students with an undergraduate degree)  
GE = Graduate Entry

The AMC requires medical students to undertake “at least two years primarily in direct contact with patients as well as personal contact with patients during other parts of the course”.<sup>1</sup>

## 1.6 Length of Placements

The length of rotations varies between schools and disciplines. In some cases, the length of placements is determined by the availability of clinicians willing to take students and the number of students to be rotated through that placement. That is, a shorter rotation term enables more students to undertake the placement over a 12 month period while also providing some flexibility for the supervisor to take a break from teaching.

The following table details the range of time students spend in full-time clinical rotations.

**Table 4: Length of full-time clinical rotation terms by medical school**

4 weeks	5 weeks	6 weeks	7 weeks	8 weeks	9 weeks	10 weeks	Full Year
Adelaide Newcastle Sydney UWA Tasmania	Deakin Melbourne Notre Dame (Syd) UWA UWS Wollongong	Adelaide Flinders Melbourne Monash UWA Notre Dame (WA)	Deakin Griffith	ANU Bond Flinders James Cook Newcastle Notre Dame (Syd) Notre Dame (WA) Queensland Sydney Tasmania UNSW UWA	Adelaide Melbourne Tasmania	UWA West Syd Notre Dame (WA)	Flinders Wollongong Deakin Melbourne

The majority of clinical rotations are undertaken in public hospitals. A limited number of private hospitals provide places for clinical rotation and the opportunity varies between schools and disciplines. See Appendix V for the various hospitals used for clinical placements. Students may also gain exposure to clinical cases in a private setting if the consultant they are working with also has a private practice, even if there is no formal arrangement with the private hospital.

## 1.7 Specialties

In most schools, students rotate through a range of specialties. The following disciplines have been identified as common across all schools:

- Medicine
- Surgery
- Paediatrics/Children's and Adolescent Health
- O&G/Women's Health/Reproductive Medicine
- Psychiatry
- General Practice

The AMC guidelines state that students need "exposure to patients with a range of common medical, surgical, paediatric, gynaecological and psychiatric problems".<sup>1</sup>

Some schools, like Melbourne, structure the first year of placements around systems rather than specific specialties and at Flinders, students have a range of acute care or ambulatory selectives to choose from in their final year. The other model is to place students in a rural or regional location for a full year where they gain exposure to patients and cases in all of the specialties identified above. This model is (or will be) used by Flinders, James Cook, Melbourne, UWA, Tasmania, Deakin and Wollongong.

See Appendix IV for details of specialty rotations by medical school.

Medical schools reported that capacity in certain specialties for clinical placements is becoming critical and while pressure areas vary between schools, the majority of schools were concerned about securing sufficient general practice placements. Other pressure areas identified were paediatrics, emergency medicine and psychiatry.

### **1.8 Organisation of Clinical Placements**

Most medical schools use a clinical school model for the organisation and oversight of clinical placements. Within each clinical school there are multiple hospital, general practice and community health sites and students may move between the different hospitals and other sites associated with that school during their rotations. The clinical school arranges the timetabling, organises lectures and tutorials and provides support services for both students and clinical teachers.

Other models exist such as at UWA where placements are organised by the discipline school. For example, the School of Surgery arranges placements in that discipline across multiple sites. In smaller schools, placements are organised by central university staff, however, timetabling and student support is the responsibility of hospital-based staff.

Collaborative arrangements between medical schools for clinical placements have begun to emerge where students are being placed in the same site or as a result of strategic partnerships between schools to expand capacity. For example, Griffith, Bond and the local Division of General Practice, a staff member is employed by the two schools at the Division to organise general practice placements for the two schools. This is a highly advantageous situation as the general practice placements are organised in a coordinated fashion where there are two schools in a relatively small geographic location. In addition, the close association with the Division of General Practice means that the staff member has access to a number of general practice resources including practice databases which would not normally be available to medical schools.

Other examples of collaborative arrangements include:

- Rural Clinical School of Western Australia, a collaboration between UWA and Notre Dame (WA), which organises places and supports students from both schools
- Partnership between Sydney, UWS and Wollongong at the Northern Rivers University Department of Rural Health to organise clinical placements for students from the three schools in that region
- Joint Rural Clinical School in Bendigo between Melbourne and Monash

### **1.9 Clinical Training in a Rural Setting**

Clinical training in a rural setting is a component of all schools' clinical training programs which has been facilitated by the Rural Clinical School (RCS) Program. The RCS program has been very successful in providing targeted funding for staff and infrastructure to enable students to undertake clinical training in rural settings.

Schools such as Flinders, James Cook, Tasmania, Deakin, Wollongong, Melbourne, ANU, UWA, Notre Dame (WA) and Notre Dame (Sydney) offer a full-year rotation for students in a rural or regional community. With primary funding from DoHA, students are provided with a range of incentives and support including rent-free accommodation, relocation allowance and the provision of resources such as mobile phone and laptop. Students are allocated to a specific general practice with a GP Supervisor, however, it is not considered a general practice placement and students follow patients through primary care and the hospital system. Individual schools are also entering into partnerships with each other to collaborate on the delivery of rural training in shared sites. For example, Flinders and Adelaide share facilities

in the Barossa Valley, South Australia, and Sydney, Wollongong and UWS share facilities in the Northern Rivers, NSW.

The result is that students and clinical teachers are well supported and education has become an integral part of health service delivery. In addition, the injection of funding into regional communities and the commitment to expanding local health services has seen the development of partnerships with local government and business to further support clinical teaching.

Schools reported that they did not have difficulty in filling rural places and in fact these places were often oversubscribed. Anecdotally, students highly value the rural clinical training experience. They have a defined and valued role in the clinical team and can be more involved in the management of patient care than at a city-based hospital.

### **1.10 Community Settings**

Medical schools make use of community settings to provide students with exposure to medical practice. While some schools utilise these most in early clinical training years other schools have or will integrate community practice into the formal rotation years. Settings include:

- Community health centres
- Aged care facilities
- Women's health centres
- Child health centres
- Aboriginal Health Service
- Drug and Alcohol Services
- Ambulance Services

These settings are usually built into a general practice rotation and some schools combine community settings in other specialty rotations such as paediatrics and psychiatry. However, students would not spend the entire rotation in a community setting (excluding general practice) alone.

Similarly, limited access to hospital places has forced some schools, particularly new schools, to think more creatively about structuring clinical rotations. UWS, for example, will “stitch” together a variety of practice settings into most of a rotation including hospital, general practice and health agencies. Those schools providing an integrated rural/community-based curriculum would also use a variety of settings including community health agencies during the 12-month rotation.

### **1.11 Private Sector**

Medical schools are increasingly looking to the private sector as a source of clinical placements. Some schools have always had collaborative partnerships with local private hospitals while other schools have struggled to develop relationships with the private sector. In some cases, arrangements have been ad hoc with clinicians working in both public and private hospitals taking students to the private setting to see specific cases.

The success of engagement with the private sector is dependent on selling the value of integrating teaching into service delivery. This requires a champion within the private hospital such as a senior staff specialist or medical director take up cause with hospital management.

Some schools reported that developing mutually agreeable contracts with private health providers has delayed the development of clinical education in certain locations. Defining



student roles and duties, access to students' academic records, patients rights and issues around intellectual property have been identified.

### **1.12 General Practice**

Medical schools are increasingly looking to general practice as a major source for clinical experience throughout all years of a medical program as well as during the rotation years. However, as has already been noted, medical schools are concerned about securing enough general practices to meet the increased medical school numbers.

Some GPs are no longer willing to take students and it has been estimated that less than 20 per cent of general practices in Australia are involved in teaching. The opportunity cost of taking students is often considered too high and similarly, corporate general practices have a business model which does not include teaching either GP trainees or medical students.

Some other reasons expressed by medical schools as to why general practices do not take or have decided to no longer take students include:

- Lack of space resulting from competing influences of a multidisciplinary practice
- Workforce in practices has changed, more part-time GPs
- Competition for training from interns and GP registrars
- Efforts not acknowledged
- Disconnected from medical school

In regards to assessing the quality of a practice for placing students, the following elements have been identified as important:

- Practice accredited and GP is vocationally registered
- Physical space
- GP willing to participate in teacher training
- Possibly some experience of students in the practice

Some rural general practices have been supported through the provision of funding for student space and other infrastructure. The nature of these practices is different from urban general practices as the GP practices in a diversified setting including the local hospital, undertakes a range of procedures and has more exposure to acute cases. Students undertaking clinical placements in rural general practice would generally have a different learning experience to an urban general practice.

The Practice Incentive Payment (PIP) scheme is a Commonwealth initiative aimed at rewarding GPs for undertaking service-related programs including medical student teaching. As medical schools are increasingly looking to expand clinical training in the general practice setting, it is timely to review the PIP scheme to ensure that GPs are adequately supported to undertake teaching.

### **1.13 Indigenous Health**

The Indigenous Health Curriculum Framework<sup>2</sup> has been nationally agreed by all medical deans and provides a set of guidelines for Indigenous Health to be an integral part of medical education. The framework has been endorsed by the AMC and medical schools are required to report on the implementation of the guidelines as part of the accreditation process.

In regards to clinical training, some schools have been successful in providing opportunities for students to gain some clinical experience in an Indigenous Health setting. It is noted that this would often occur during the early part of the medical program as well as during elective rotation terms.

If closing the gap on Indigenous Health is a national priority, it is essential that opportunities are created for medical students to be able to gain clinical experience in Indigenous Health settings.

## 2. Quality Clinical Placements

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### 2.1 Elements required for quality clinical placements

As described in Section 1, clinical placements are undertaken in a variety of settings including hospital (public and private), general practice and community health agencies.

Three key elements have been identified by medical schools and jurisdictions as essential for quality clinical placements and are applied across all settings:

- Casemix
- Supervision
- Infrastructure

The AMC has always had a rigorous process in place to assess the quality of clinical training offered by medical schools, and the accreditation standards reflect this approach. However, the AMC has recently completed a review of its guidelines to ensure the appropriateness and adequacy of its standards for the assessment of the rapidly increasing variety of clinical teaching placement opportunities, including the issue of shared clinical teaching sites.<sup>3</sup> As a result, the AMC Medical School Accreditation Committee is giving greater attention to the evidence provided by medical schools for the quality and sustainability of their clinical training programs.

Similarly, the jurisdictions agree that these three broad areas are at the centre of strategic efforts to expand and enhance quality.

### 2.2 Casemix

Medical schools strive to provide students with clinical placements that will expose them to a range of conditions, presentations, skills, procedures in a given discipline or disciplines of medical practice. The changing nature of medical practice such as shorter hospital stays, increased day procedures and a move to ambulatory settings and the private sector, has raised questions as to the suitability of traditional hospital settings for quality clinical placements. As a result, medical schools are looking to adapt their clinical placements, to include a wide range of health care settings to ensure that students are placed where patients are presenting.

When considering new sites for placements, the casemix of that site is carefully examined. Schools consult with a wide range of groups including clinicians, health professionals, local health authorities and community practitioners regarding the case mix and suitability of a site for medical student placements.

Many schools have developed a list of problems or conditions that students should see during their placement years and seek to ensure that students are placed in settings where they will see these cases.

Another issue related to casemix is access to patients and patients' rights. Schools have developed consent forms and information resources for patients and no schools reported that they had any significant issues around patient consent.

### 2.3 Supervision

The availability of suitably trained medical teachers to supervise students is perhaps the greatest challenge facing medical schools in their efforts to expand clinical placement capacity.

Medical schools have reported that some senior clinical academic positions remain unfilled despite funding and incentives and that recruitment of suitably qualified clinicians has been

difficult. Most jurisdictions provide award payments to clinical academic staff to partially bridge the gap between university and hospital specialists' salaries, however, they are unable to compete with private practice earnings.

The increasing move to using general practice, community settings and the private sector for clinical placements raises the issue of how to encourage medical practitioners to take students in these settings. Financial payment is provided by the Commonwealth to GPs taking students through the Practice Incentive Payment (PIP) however, similar financial incentives are not available to other community settings.

In addition, clinical teachers need adequate resources and support to give them time to teach, including administrative support. In hospital settings where a consultant is working in a multidisciplinary team, medical student teaching is often undertaken by registrars, interns and other members of that team in addition to the consultant. It is important that these groups are supported in their teaching efforts.

Similarly, GPs may have a registrar or intern to assist with teaching as well as practice nurses and in some cases allied health staff. Other ways to lessen the burden on clinical teachers, particularly in general practice and community settings, is to structure placements so that students are not in the one practice the entire time and instead a number of different health settings sites make up the clinical placement. In multidisciplinary practices, students should be able to work with other health professionals not just the GP.

Medical teachers need to have the skills and confidence to supervise and train medical students. This includes providing professional development programs in teaching and assessment as well as ensuring that teachers know what to teach. Learning objectives of the placement and the roles of student and teacher should be clearly defined and communicated.

## **2.4 Infrastructure**

The infrastructure requirements of a quality clinical placement have been identified as follows:

- Physical teaching space eg lecture and seminar rooms in hospitals, videoconferencing and AV equipment
- Room for students to see patients in general practice, consulting clinics etc
- Computers and IT infrastructure
- Student accommodation in rural, regional and outer urban areas
- Clinical skills laboratories

Schools reported that existing infrastructure at some hospital sites would not be adequate for the increased number of student placements. This included IT resources, size of tutorial and lecture rooms and other student space. At times staffing deficiencies at some sites, including public hospitals, can be such that there are concerns about quality of practice and teaching. It is therefore important that the quality and suitability of infrastructure is taken into account.

### 3. Clinical Placement Capacity, Challenges and Strategies

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#### 3.1 Current Clinical Placement Capacity

In 2007, there were 1,908 final year medical students in Australian medical schools undertaking clinical placements. By 2012, this number will increase to 3,437 representing an 80 per cent increase in required clinical places nationally for final year medical students. This figure varies between jurisdictions as follows:

NSW	92.9%
Vic	81.1%
Qld	95.6%
SA	29.1%
WA	125.4%
Tas	43.8%
ACT	22.1%

The percentage increase varies between individual medical schools during this period ranging from 10.4% (Sydney) to 180% (Newcastle). See Appendix VI for full details of final year clinical placement requirements by medical school.

#### 3.2 Challenges to Expanding Capacity for Clinical Placements

##### Health Services

- Changing the culture of health services and health professionals to include education and training as an integral part of health service delivery

##### Curriculum

- Clear definition of clinical training requirements to prepare students for internships

##### Workforce Issues

- Workforce shortages
- Ageing health workforce
- Increase in VMOs, less staff specialists
- Inadequate number of specialists and GPs to teach in some specialties

##### Supervision

- Recruitment of clinicians into academic and teaching roles
- Appropriate remuneration of clinical teachers including general practitioners
- Ensuring clinicians have the skills and support to take on teaching roles

##### Competition for Places

- Competing demand for places by pre-vocational and vocational trainees
- Competing demand for places by more than one medical school in geographic location

#### 3.3 Strategies for Expanding Capacity

Medical schools have begun planning for the increase in student numbers and sourcing the required number of clinical places. As already noted, a number of collaborative partnerships have been established between medical schools with the aim of expanding capacity and cost-sharing (1.8). Schools reported that they are also looking at where they can expand places, particularly in local private hospitals and broader community settings.

The jurisdictions are also looking at the issue of clinical placements across a range of health professions including medicine.

### **Queensland**

In 2006, a Taskforce on Clinical Education and Training was established to review and make recommendations to the Minister for Health.<sup>4</sup> One of the key initiatives to come out of this Taskforce was the establishment of the Medical Students Clinical Placement Subsidy Scheme which provides funding over three years to support staffing appointments both teaching and administrative support positions and infrastructure. Other initiatives aimed at improving the quality of clinical training include:

- funding to facilitate access to training for medical teachers
- development of the IMG workforce
- exploring a concept for a clinical education and training productivity and innovation board/agency
- appointment of a State-wide Director of Medical Education and Training

### **Victoria**

The Department of Human Services (DHS) has developed a series of strategies around the organisation and management of clinical placements for a range of health professions in Victoria including medicine.<sup>5</sup> A number of research projects have been undertaken including the development of sustainable models for placements in rural Victoria and issues around establishing community health service teaching centres as well as a scoping project on medical student placements.<sup>6</sup> A further project looking at integrating students into general practices is currently being undertaken. The DHS has provided more than \$30M in funding for teaching infrastructure and further funding to health services for academic teaching staff and infrastructure in rural locations. Other initiatives include:

- discussions about consistency of data collection and the merits of a central database to store placement data
- discussion about the establishment of a clinical placement agency
- establishment of a Clinical Placements Group to manage allocation of medical student clinical placements in acute public hospitals
- development of standard fees which medical schools are charged for clinical placements in public hospitals (in 2007: \$1,111 for each full-time CSP student, \$2,222 for each domestic fee-paying student and \$3,333 for each international fee-paying student).

### **Western Australia**

A Joint Consultative Committee on Medical Student Training established with representation from Department of Health, UWA and Notre Dame (WA) to work across medical student placement issues. A new award for hospital clinicians will see an increase in the provision of gap funding for clinical academic appointments.

### **South Australia**

Plans are in place to convert country hospitals to general hospitals, suitable for medical student training. Capacity will also be enhanced through the construction of new hospitals and changing the role of outer metropolitan hospitals, although new sites will not be operational until 2016. The Department of Health is about to commence a project to scope resource requirements for clinical placements and will look at nursing in the first instance.

## References

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1. Australian Medical Council 2002 *Assessment and Accreditation of Medical Schools: Standards and Procedures*, AMC Canberra.
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3. Australian Medical Council 2007 *Clinical Placements in Undergraduate Medical Education: Applying AMC Standards to the Assessment of Clinical Teaching Placements*, AMC, Canberra.
4. Queensland Government 2007 *Ministerial Taskforce on Clinical Education and Training Final Report -March 2007*, Queensland Government, Brisbane.
5. Victorian Government Department of Human Services 2007 *Clinical Placements in Victoria, Establishing a Statewide Approach*. Victorian Government DHS, Melbourne.
6. <http://www.health.vic.gov.au/workforce/placements.htm#scoping>

## APPENDICES



## Commencing Medical Students 2000-2006

	2000			2001			2002			2003			2004			2005			2006		
	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL
<b>NSW</b>																					
Sydney	91	27	118	197	37	234	191	36	227	181	53	234	197	59	256	211	58	269	214	54	268
UNSW	190	46	236	174	52	226	177	53	230	176	56	232	182	43	225	186	56	242	211	46	257
Newcastle	74	21	95	78	17	95	76	15	91	86	17	103	92	22	114	101	24	125	91	20	111
Western Syd			0			0			0			0			0			0			0
Wollongong			0			0			0			0			0			0			0
Notre Dame (Syd)			0			0			0			0			0			0			0
<b>TOTAL NSW</b>	<b>355</b>	<b>94</b>	<b>449</b>	<b>449</b>	<b>106</b>	<b>555</b>	<b>444</b>	<b>104</b>	<b>548</b>	<b>443</b>	<b>126</b>	<b>569</b>	<b>471</b>	<b>124</b>	<b>595</b>	<b>498</b>	<b>138</b>	<b>636</b>	<b>516</b>	<b>120</b>	<b>636</b>
<b>VIC</b>																					
Melbourne	139	80	219	193	83	276	189	83	272	185	87	272	146	85	231	147	80	227	220	78	298
Monash	149	42	191	0	40	40	154	61	215	159	51	210	161	64	225	176	75	251	187	85	272
Deakin			0			0			0			0			0			0			0
<b>TOTAL VIC</b>	<b>288</b>	<b>122</b>	<b>410</b>	<b>193</b>	<b>123</b>	<b>316</b>	<b>343</b>	<b>144</b>	<b>487</b>	<b>344</b>	<b>138</b>	<b>482</b>	<b>307</b>	<b>149</b>	<b>456</b>	<b>323</b>	<b>155</b>	<b>478</b>	<b>407</b>	<b>163</b>	<b>570</b>
<b>QLD</b>																					
Queensland	226	1	227	237	3	240	235	11	246	264	11	275	283	30	313	250	58	308	265	52	317
JCU	64	0	64	79	0	79	81	0	81	82	2	84	96	4	100	95	4	99	93	6	99
Griffith			0			0			0			0			0	86	0	86	123	3	126
Bond			0			0			0			0			0	65	7	72	81	3	84
<b>TOTAL QLD</b>	<b>290</b>	<b>1</b>	<b>291</b>	<b>316</b>	<b>3</b>	<b>319</b>	<b>316</b>	<b>11</b>	<b>327</b>	<b>346</b>	<b>13</b>	<b>359</b>	<b>379</b>	<b>34</b>	<b>413</b>	<b>496</b>	<b>69</b>	<b>565</b>	<b>562</b>	<b>64</b>	<b>626</b>
<b>SA</b>																					
Adelaide	101	36	137	102	34	136	99	53	152	106	40	146	103	44	147	102	36	138	117	16	133
Flinders	58	30	88	67	24	91	66	32	98	68	28	96	81	27	108	80	23	103	81	29	110
<b>TOTAL SA</b>	<b>159</b>	<b>66</b>	<b>225</b>	<b>169</b>	<b>58</b>	<b>227</b>	<b>165</b>	<b>85</b>	<b>250</b>	<b>174</b>	<b>68</b>	<b>242</b>	<b>184</b>	<b>71</b>	<b>255</b>	<b>182</b>	<b>59</b>	<b>241</b>	<b>198</b>	<b>45</b>	<b>243</b>
<b>WA</b>																					
UWA UG	123	6	129	137	5	142	140	3	143	140	10	150	189	16	205	148	26	174	130	19	149
UWA Grad																21	0	21	39	0	39
Notre Dame (WA)			0			0			0			0			0	81	0	81	86	0	86
<b>TOTAL WA</b>	<b>123</b>	<b>6</b>	<b>129</b>	<b>137</b>	<b>5</b>	<b>142</b>	<b>140</b>	<b>3</b>	<b>143</b>	<b>140</b>	<b>10</b>	<b>150</b>	<b>189</b>	<b>16</b>	<b>205</b>	<b>250</b>	<b>26</b>	<b>276</b>	<b>255</b>	<b>19</b>	<b>274</b>
<b>TAS</b>																					
UTas	50	10	60	62	14	76	62	20	82	64	23	87	90	25	115	55	7	62	55	9	64
<b>TOTAL TAS</b>	<b>50</b>	<b>10</b>	<b>60</b>	<b>62</b>	<b>14</b>	<b>76</b>	<b>62</b>	<b>20</b>	<b>82</b>	<b>64</b>	<b>23</b>	<b>87</b>	<b>90</b>	<b>25</b>	<b>115</b>	<b>55</b>	<b>7</b>	<b>62</b>	<b>55</b>	<b>9</b>	<b>64</b>
<b>ACT</b>																					
ANU			0			0			0			0	80	2	82	88	6	94	78	6	84
<b>TOTAL ACT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>2</b>	<b>82</b>	<b>88</b>	<b>6</b>	<b>94</b>	<b>78</b>	<b>6</b>	<b>84</b>
<b>NATIONAL TOTAL</b>	<b>1265</b>	<b>299</b>	<b>1564</b>	<b>1326</b>	<b>309</b>	<b>1635</b>	<b>1470</b>	<b>367</b>	<b>1837</b>	<b>1511</b>	<b>378</b>	<b>1889</b>	<b>1700</b>	<b>421</b>	<b>2121</b>	<b>1892</b>	<b>460</b>	<b>2352</b>	<b>2071</b>	<b>426</b>	<b>2497</b>

## Commencing Medical Students 2007-2010

	2007			2008			2009			2010		
	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL
<b>NSW</b>												
Sydney	226	38	264	229	45	274	230	45	275	230	45	275
UNSW	214	61	275	214	60	274	196	70	266	196	70	266
Newcastle/UNE*	92	21	113	188	22	210	192	22	214	196	22	218
Western Syd	104	0	104	100	5	105	102	10	112	104	12	116
Wollongong	72	7	79	72	11	83	72	12	84	72	12	84
Notre Dame (Syd)	0	0	0	112	0	112	114	0	114	116	0	116
<b>TOTAL NSW</b>	<b>708</b>	<b>127</b>	<b>835</b>	<b>915</b>	<b>143</b>	<b>1058</b>	<b>906</b>	<b>159</b>	<b>1065</b>	<b>914</b>	<b>161</b>	<b>1075</b>
<b>VIC</b>												
Melbourne UG	157	73	230	170	75	245	0	0	0	n/a	n/a	0
Melbourne PG	84	9	93	75	10	85	70	10	80	245	85	330
Monash** #	238	75	313	277	72	349	284	80	364	284	80	364
Deakin			0	120	0	120	128	0	128	144	0	144
<b>TOTAL VIC</b>	<b>479</b>	<b>157</b>	<b>636</b>	<b>642</b>	<b>157</b>	<b>799</b>	<b>482</b>	<b>90</b>	<b>572</b>	<b>673</b>	<b>165</b>	<b>838</b>
<b>QLD</b>												
Queensland	320	54	374	330	70	400	337	71	408	344	72	416
JCU	106	6	112	150	5	155	153	5	158	156	5	161
Griffith	150	0	150	148	0	148	152	0	152	152	0	152
Bond	85	0	85	85	0	85	87	0	87	89	0	89
<b>TOTAL QLD</b>	<b>661</b>	<b>60</b>	<b>721</b>	<b>713</b>	<b>75</b>	<b>788</b>	<b>729</b>	<b>76</b>	<b>805</b>	<b>741</b>	<b>77</b>	<b>818</b>
<b>SA</b>												
Adelaide	146	24	170	146	24	170	149	24	173	152	25	177
Flinders	105	18	123	116	20	136	110	25	135	110	25	135
<b>TOTAL SA</b>	<b>251</b>	<b>42</b>	<b>293</b>	<b>262</b>	<b>44</b>	<b>306</b>	<b>259</b>	<b>49</b>	<b>308</b>	<b>262</b>	<b>50</b>	<b>312</b>
<b>WA</b>												
UWA UG	115	25	140	116	25	141	132	23	155	132	23	155
UWA PG	59	0	59	62	0	62	60	3	63	60	3	63
Notre Dame (WA)	100	0	100	100	0	100	102	0	102	104	0	104
<b>TOTAL WA</b>	<b>274</b>	<b>25</b>	<b>299</b>	<b>278</b>	<b>25</b>	<b>303</b>	<b>294</b>	<b>26</b>	<b>320</b>	<b>296</b>	<b>26</b>	<b>322</b>
<b>TAS</b>												
UTas	106	21	127	110	20	130	100	20	120	100	20	120
<b>TOTAL TAS</b>	<b>106</b>	<b>21</b>	<b>127</b>	<b>110</b>	<b>20</b>	<b>130</b>	<b>100</b>	<b>20</b>	<b>120</b>	<b>100</b>	<b>20</b>	<b>120</b>
<b>ACT</b>												
ANU	81	4	85	80	12	92	82	12	94	83	12	95
<b>TOTAL ACT</b>	<b>81</b>	<b>4</b>	<b>85</b>	<b>80</b>	<b>12</b>	<b>92</b>	<b>82</b>	<b>12</b>	<b>94</b>	<b>83</b>	<b>12</b>	<b>95</b>
<b>NATIONAL TOTAL</b>	<b>2560</b>	<b>436</b>	<b>2996</b>	<b>3000</b>	<b>476</b>	<b>3476</b>	<b>2852</b>	<b>432</b>	<b>3284</b>	<b>3069</b>	<b>511</b>	<b>3581</b>

\* from 2008 Joint Medical Program (JMP) with the University of New England

\*\* from 2008 Monash offers a graduate entry MBBS at its Gippsland campus, numbers are included

# Monash University Malaysia offers an AMC accredited MBBS. Commencing numbers not included in table are: 2007-62, 2008-95, 2009-128, 2010-144

## Medical Graduates 2002-2006

	2002			2003			2004			2005			2006		
	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL
<b>NSW</b>															
Sydney	185	12	197	188	15	203	190	31	221	176	42	218	147	33	180
UNSW	165	24	189	159	29	188	163	23	186	188	23	211	166	32	198
Newcastle	65	15	80	59	11	70	65	15	80	59	14	73	61	16	77
Western Syd			0			0			0			0			0
Wollongong			0			0			0			0			0
Notre Dame (Syd)			0			0			0			0			0
<b>TOTAL NSW</b>	<b>415</b>	<b>51</b>	<b>466</b>	<b>406</b>	<b>55</b>	<b>461</b>	<b>418</b>	<b>69</b>	<b>487</b>	<b>423</b>	<b>79</b>	<b>502</b>	<b>374</b>	<b>81</b>	<b>455</b>
<b>VIC</b>															
Melbourne	174	39	213	206	64	270	179	75	254	178	83	261	211	73	284
Monash	150	3	153	145	10	155	144	5	149	143	28	171	123	52	175
Deakin			0			0			0			0			0
<b>TOTAL VIC</b>	<b>324</b>	<b>42</b>	<b>366</b>	<b>351</b>	<b>74</b>	<b>425</b>	<b>323</b>	<b>80</b>	<b>403</b>	<b>321</b>	<b>111</b>	<b>432</b>	<b>334</b>	<b>125</b>	<b>459</b>
<b>QLD</b>															
Queensland	220	1	221	215	1	216	225	4	229	218	8	226	215	9	224
JCU			0			0			0	58	0	58	74	1	75
Griffith			0			0			0			0			0
Bond			0			0			0			0			0
<b>TOTAL QLD</b>	<b>220</b>	<b>1</b>	<b>221</b>	<b>215</b>	<b>1</b>	<b>216</b>	<b>225</b>	<b>4</b>	<b>229</b>	<b>276</b>	<b>8</b>	<b>284</b>	<b>289</b>	<b>10</b>	<b>299</b>
<b>SA</b>															
Adelaide	84	32	116	81	32	113	94	33	127	85	29	114	92	36	128
Flinders	58	20	78	56	25	81	67	20	87	62	28	90	66	26	92
<b>TOTAL SA</b>	<b>142</b>	<b>52</b>	<b>194</b>	<b>137</b>	<b>57</b>	<b>194</b>	<b>161</b>	<b>53</b>	<b>214</b>	<b>147</b>	<b>57</b>	<b>204</b>	<b>158</b>	<b>62</b>	<b>220</b>
<b>WA</b>															
UWA	110	6	116	112	10	122	105	2	107	107	2	109	118	7	125
Notre Dame (WA)			0			0			0			0			0
<b>TOTAL WA</b>	<b>110</b>	<b>6</b>	<b>116</b>	<b>112</b>	<b>10</b>	<b>122</b>	<b>105</b>	<b>2</b>	<b>107</b>	<b>107</b>	<b>2</b>	<b>109</b>	<b>118</b>	<b>7</b>	<b>125</b>
<b>TAS</b>															
UTas	53	9	62	45	6	51	55	8	63	46	10	56	62	12	74
<b>TOTAL TAS</b>	<b>53</b>	<b>9</b>	<b>62</b>	<b>45</b>	<b>6</b>	<b>51</b>	<b>55</b>	<b>8</b>	<b>63</b>	<b>46</b>	<b>10</b>	<b>56</b>	<b>62</b>	<b>12</b>	<b>74</b>
<b>ACT</b>															
ANU			0			0			0			0			0
<b>TOTAL ACT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>NATIONAL TOTAL</b>	<b>1264</b>	<b>161</b>	<b>1425</b>	<b>1266</b>	<b>203</b>	<b>1469</b>	<b>1287</b>	<b>216</b>	<b>1503</b>	<b>1320</b>	<b>267</b>	<b>1587</b>	<b>1335</b>	<b>297</b>	<b>1632</b>

## Projected Medical Graduates 2007-2012

	2007			2008			2009			2010			2011			2012		
	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL	Dom	Intl	TOTAL
<b>NSW</b>																		
Sydney	202	47	249	210	54	264	214	55	269	226	38	264	229	45	274	230	45	275
UNSW	185	24	209	182	39	221	164	37	201	163	50	213	189	43	232	199	59	258
Newcastle/UNE*	60	15	75	75	19	94	91	33	124	87	20	107	92	21	113	188	22	210
Western Syd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90
Wollongong	0	0	0	0	0	0	0	0	0	72	7	79	72	10	82	72	11	83
Notre Dame (Syd)	0	0	0	0	0	0	0	0	0	0	0	0	112	0	112	112	0	112
<b>TOTAL NSW</b>	447	86	533	467	112	579	469	125	594	548	115	663	694	119	813	891	137	1028
<b>VIC</b>																		
Melbourne	192	79	271	211	71	282	214	87	301	211	70	281	223	93	316	230	112	342
Monash**	145	45	190	166	65	231	169	80	249	172	87	259	287	85	372	280	85	365
Deakin	0	0	0	0	0	0	0	0	0	0	0	0	120	0	120	128	0	128
<b>TOTAL VIC</b>	337	124	461	377	136	513	383	167	550	383	157	540	630	178	808	638	197	835
<b>QLD</b>																		
Queensland	298	25	323	252	70	322	273	46	319	320	54	374	333	70	403	343	73	416
JCU	65	1	66	74	1	75	90	0	90	96	3	99	92	4	96	106	6	112
Griffith	0	0	0	86	0	86	123	3	126	150	0	150	150	0	150	148	0	148
Bond	0	0	0	0	0	0	65	0	65	78	0	78	85	0	85	85	0	85
<b>TOTAL QLD</b>	363	26	389	412	71	483	551	49	600	644	57	701	660	74	734	682	79	761
<b>SA</b>																		
Adelaide	87	41	128	99	47	146	80	47	127	98	34	132	97	15	112	146	24	170
Flinders	77	29	106	76	23	99	80	28	108	104	16	120	115	18	133	109	23	132
<b>TOTAL SA</b>	164	70	234	175	70	245	160	75	235	202	50	252	212	33	245	255	47	302
<b>WA</b>																		
UWA	130	4	134	159	12	171	176	22	198	180	26	206	183	22	205	175	25	200
Notre Dame (WA)	0	0	0	76	0	76	81	0	81	100	0	100	100	0	100	102	0	102
<b>TOTAL WA</b>	130	4	134	235	12	247	257	22	279	280	26	306	283	22	305	277	25	302
<b>TAS</b>																		
UTas	65	15	80	61	17	78	83	15	98	86	14	100	95	20	115	95	20	115
<b>TOTAL TAS</b>	65	15	80	61	17	78	83	15	98	86	14	100	95	20	115	95	20	115
<b>ACT</b>																		
ANU	76	1	77	93	5	98	80	6	86	81	4	85	80	12	92	82	12	94
<b>TOTAL ACT</b>	76	1	77	93	5	98	80	6	86	81	4	85	80	12	92	82	12	94
<b>NATIONAL TOTAL</b>	1582	326	1908	1820	423	2243	1983	459	2442	2224	423	2647	2654	458	3112	2920	517	3437

\* from 2008 Joint Medical Program (JMP) with the University of New England

\*\* Monash Gippsland first graduates in 2011

























