

Creating and Sustaining the Next Generation of the Clinical Academic Workforce

Issues and Strategies for Australia and New Zealand

A Discussion Paper prepared for Medical Deans Australia and New Zealand

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Executive Summary

This Discussion Paper is designed to encourage an informed debate and assist Medical Deans in reaching a consensus on two key questions:

1. What are the **major challenges** facing the clinical academic workforce in Australia and New Zealand?
2. What are the **best strategies** to tackle these challenges to ensure sustainability of the next generation of the clinical academic workforce?

It is first proposed that a **broad definition of the clinical academic workforce be adopted comprising 'academic clinician educators', 'academic clinician scientists' and 'clinician educators'**. The first two groups are university-based clinicians with a predominant focus on teaching or research respectively, while clinician educators are health service doctors whose primary role is patient care but who also have a major commitment to teaching and may undertake some research.

Adopting an inclusive approach recognises the significant contribution of clinician educators to medical education, as well as influencing how the problems are perceived and accordingly, how strategies are developed to ensure sustainability of the clinical academic workforce.

Major challenges (and some opportunities)

There has been considerable debate internationally, particularly in the United Kingdom, about whether there is a 'crisis' in academic medicine. While not downplaying the very real issues that exist, some of the concerns reflect changing power dynamics across the higher education and health sectors.

The very concept of 'academic medicine' is, itself, evolving. Medical undergraduate education is now being delivered in a wide range of community-based settings and also in rural Australian towns, courtesy of the extraordinary success of rural clinical schools. The emphasis on early work-integrated learning has given more prominence to the role of health services and clinician educators. At the same time, some health services are seeking to put their teaching responsibilities on a commercial basis which is fundamentally changing the historical relationships between universities and public hospitals.

Specific challenges impacting on the clinical academic workforce in Australia and New Zealand include:

- The ability to recruit and retain a skilled clinical academic workforce is potentially being outstripped by the **growth in demand for medical undergraduate education** (a 116% growth in commencing medical students in Australia between 2000 and 2010);
- There is a long-term trend across higher education towards **greater use of fractional appointments** and casual staff. The ratio of academic staff FTE to head count is lowest for recently established medical schools; these schools are strongly reliant on health service clinicians who often teach at very low fractional appointments (e.g. 0.1 or 0.2); and
- It is generally accepted that the **clinical academic workforce is ageing**.

But, these challenges are balanced by **some opportunities that hold promise for the ability to sustain a viable clinical academic workforce into the future** as follows:

- Medical students express **interest in medical teaching and research**, at levels that would be more than sufficient to 'replenish' the clinical academic workforce. The key is converting 'interest' to action.

- The emergence of graduate entry programs has seen the creation of a **cadre of well-qualified medical students**, about 8% of whom already hold a postgraduate qualification on entry to medical school. By the time they emerge as young doctors, medical students are now more likely to have academic achievements that will both inspire them and equip them for an academic career involving teaching and research.
- Australian data indicate **quite strong growth in recent years in doctors choosing academic careers as teachers and educators** (a 44% increase between 2004 and 2008).

Potential strategies

The strategies that have been developed reflect that **the challenges facing the clinical academic workforce are multi-faceted and may vary across different types of medical schools**. The strategies have been grouped along two dimensions: the first spans the spectrum from recruitment to retention; and the second distinguishes whether strategies require national action or are suitable for local implementation.

1. Establish an **Integrated Clinical Academic Training Programme** (recruitment, national action)
2. Facilitate **communities of practice for clinician educators in academia and health services** (retention, national action)
3. Implement a **vertically integrated rural medical career pathway** (retention, national action)
4. Implement **structured mentoring and role model programs** (recruitment, local action)
5. Promote **faculty development, leadership and the scholarship of medical education** (retention, local action)
6. Develop **remuneration support mechanisms** (recruitment, local action)
7. Establish **Academic Health Centres** (recruitment, local action).

Medical Deans may wish to consider:

- Is there support for progressing the introduction of an Integrated Clinical Academic Training Programme for Australia and New Zealand? Is there agreement on the key elements and framework for such a programme? What would be the most important first steps in commencing planning on this programme?
- Which of the other strategies (2-7) above has the highest priority?
- Are there other important strategies that should be incorporated in planning for the future sustainability of the clinical academic workforce in Australia and New Zealand?

*"Tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn."*¹

1. Introduction and Purpose

Over the past decade, major academic medical organizations in the United Kingdom and the United States have opined on the future of academic medicine. In the UK the Academy of Medical Sciences and the Royal Colleges have warned of the disincentives facing young doctors interested in pursuing a clinical academic career and the associated risks to clinical research.^{2, 3, 4} In the US organizations including the Institute of Medicine and the Commonwealth Fund Task Force on Academic Health Centers have focussed on the perceived threats to the financial sustainability of academic health centers as governments and health insurers attempt to restrain rising health expenditures.^{5 6} In 2003 the British Medical Journal, the Lancet and 40 other partners launched the International Campaign to Revitalise Academic Medicine (ICRAM).⁷ Yet, tellingly, a major ICRAM report in 2005 on strategies to respond to the 'crisis' began with the cautionary warning that:

*"There is widespread, even universal, agreement that things are not right but little agreement on the exact nature of the problem".*⁸

Australia and New Zealand have not been immune to this general malaise about the future of academic medicine. Concerns have been raised on several fronts: some focus on the perceived threat to teaching hospitals associated with the implementation of casemix purchasing models for public hospital services.⁹ Others highlight the growing disconnect between clinical, teaching and research roles as the sector struggles to balance the growing demand for medical education in the face of current workforce shortages and rapid growth in clinical service provision.¹⁰ More generally, concerns have been raised about the capacity of the clinical academic workforce to keep pace with, and match, the growth in demand for medical undergraduate education.

This Discussion Paper is essentially about the diagnosis and prognosis for the clinical academic workforce in Australia and New Zealand. It is intended to stimulate debate and help shape a consensus on two key questions:

1. What are the major challenges facing the clinical academic workforce in Australia and New Zealand?
2. What are the best strategies to tackle these challenges to ensure sustainability of the next generation of the clinical academic workforce?

This paper is organised into four main sections. Section 2 begins by proposing a broad definition of the clinical academic workforce and its environment. Section 3 presents the available data internationally and in Australia and New Zealand that describe some of the issues impacting on the clinical academic workforce. Section 4 identifies relevant issues from the literature organized as to how they impact on the clinical academic workforce. Finally, Section 5 presents a matrix approach to the development of potential strategies that could be used to tackle the heterogeneous nature of the challenges facing academic medicine.

Given its status as a Discussion Paper, each section of this report includes a series of questions to stimulate debate on the issues and potential ways forward.

2. Defining the Clinical Academic Workforce

Traditionally, the three pillars of academic medicine have been viewed as teaching, research and clinical practice. Under this model, the clinical academic was akin to the well-rounded 'Renaissance man', being accomplished and able to make significant contributions in each of the three domains. But, this model has been steadily eroded according to a former Chief Medical Officer in England:

"In the past, clinical academics were required to fulfil multiple roles (researcher, teacher, administrator, professional leader) but the growing demands in all these areas means that today's 'jack of all trades' will be master of none".¹¹

More importantly for the purposes of this Discussion Paper, this model is limited in that it assumes that the clinical academic workforce is equivalent to medically qualified individuals who are substantively employed by a university. A narrow definition of the clinical academic workforce influences both how the problems are perceived and how strategies are developed to tackle these problems.

Instead, **this Discussion Paper adopts a broad and more inclusive approach to defining the clinical academic workforce.** Australian medical education researchers based at the University of Sydney and the University of Queensland¹² have proposed that there are three subgroups of clinicians engaged in teaching and research as follows:

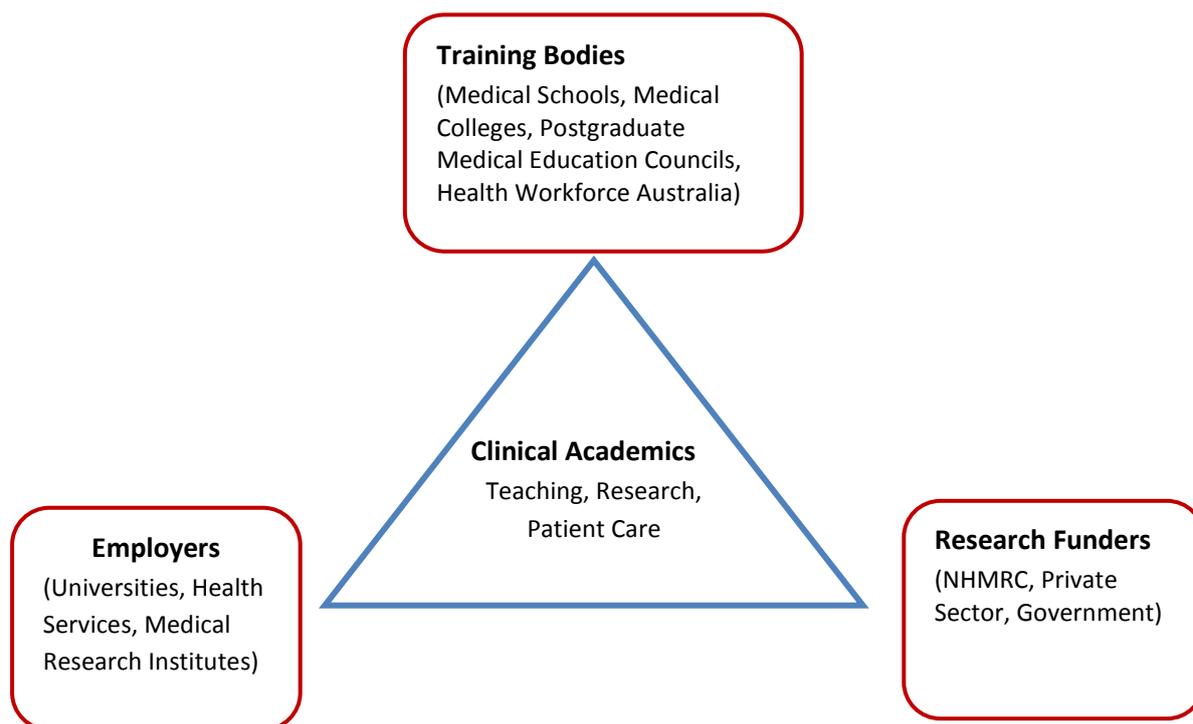
- **Academic clinician educators:** university-salaried doctors who are primarily engaged in teaching and learning, maintain some clinical practice and have variable degrees of involvement in research;
- **Clinician educators:** doctors employed by health service providers who are primarily engaged in clinical practice, regularly teach and have some or little involvement in research; and
- **Academic clinician scientists:** university-salaried doctors who are primarily engaged in medical clinical sciences or health services research, maintain some clinical practice and have variable involvement in teaching.

This framing of the clinical academic workforce identifies that medically qualified individuals can be on different 'tracks', each of which can contribute to the discipline of academic medicine. It also recognises the significant contribution to medical education of many clinicians employed by health services: while their primary focus is on patient care, many of these clinicians have a major commitment to, and professional orientation towards, teaching the next generation of doctors.

In the United Kingdom, the final report of the Academic Careers Sub-Committee of Modernising Medical Careers (otherwise referred to as the Walport report) framed the environment in which the clinical academic workforce operated as comprising employers, research funders and training bodies. Figure 1 (derived from the Walport report) presents this environment for the Australian and New Zealand context.

Figure 1 illustrates that Medical Deans Australia and New Zealand is not the only organisation with a strong interest in the sustainability of the clinical academic workforce. Other key organisations include the Medical Colleges and the Postgraduate Medical Education Councils, the National Health and Medical Research Council and, of course, health services and medical research institutes who depend on this workforce for producing patient care and research respectively.

Figure 1: The clinical academic workforce environment



Discussion Questions:

- *Is there support for using the three-track approach (academic clinician educators, clinician educators and academic clinician scientists) as the basis for discussing the clinical academic workforce?*
- *Are there other important stakeholders that should be included in the Figure 1 representation of the clinical academic workforce environment in Australia and New Zealand?*

3. Size and Composition of the Clinical Academic Workforce

Ideally, an analysis of the clinical academic workforce would be informed by robust data that identifies how attributes of this workforce have changed, or are projected to change, relative to demand for this workforce. As Australian and New Zealand data are limited, this section presents a composite picture of the changes in the clinical academic workforce drawn from international studies, complemented by local data that illustrates some aspects of workforce composition (such as the use of fractional appointments) for Australian and New Zealand medical schools.

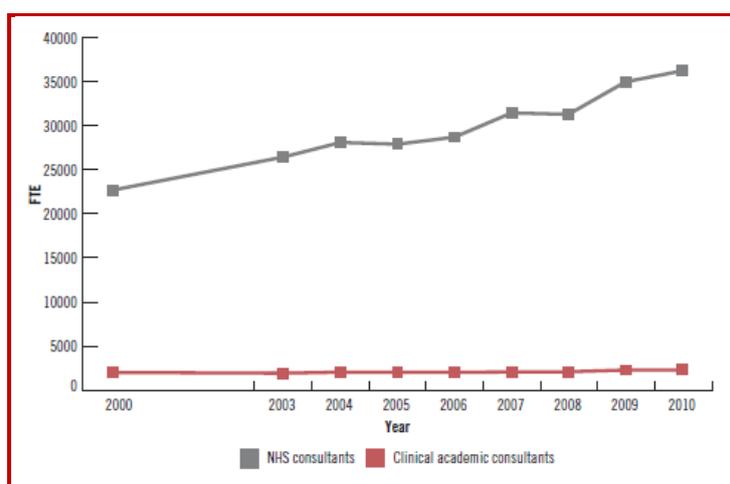
3.1 Absolute and/or relative changes in the size of the clinical academic workforce

3.1.1 United Kingdom

In the UK the Medical Schools Council has regularly surveyed staffing levels of medical clinical academics for about the past decade. These surveys capture data on medical clinical academics employed by medical schools, so they comprise two of the three tracks described earlier - academic clinician educators and academic clinician scientists, but not clinician educators. Key findings of the 2010 survey include:

- **An absolute decline in workforce numbers:** The number of FTE medical clinical academics declined annually from 3,519 in 2000 to 2,930 in 2006. While the size of the medical clinical academic workforce has increased gradually from 2006 onwards, there were still 10% fewer medical clinical academics in 2010 (3,175 FTE) than in 2000. This is a very high attrition rate, even before increased demand from a growing medical student population is taken into consideration.
- **A decline relative to the NHS workforce:** Another measure of workforce sustainability is the growth of the clinical academic workforce relative to the growth of the clinical workforce who are mainly engaged in patient care. Figure 2 indicates that between 2000 and 2010 there was a 46% increase in the number of NHS consultants, but only a 9.4% increase in the number of clinical academic consultants. The most rapid increase in NHS consultant posts seems to have occurred in the second half of the 2000s, corresponding to the significant investment by the English government in the NHS, some of which may have improved the relative remuneration of NHS doctors.

Figure 2: Change in NHS consultants and clinical academic consultants, United Kingdom, 2000-2010



Source: Medical Schools Council 2011, A survey of staffing levels of medical clinical academics in UK medical schools, London.

3.1.2 Australia

While there are no data collections specific to the clinical academic workforce, some Australian data on the medical teaching and research workforce is available through the AIHW annual medical labour force surveys (undertaken by registration boards). For registered medical practitioners currently employed in medicine in Australia, the survey disaggregates this population into clinicians and non-clinicians. The 'non-clinician' population is further disaggregated into: administrators, teacher/educators, researchers, public health physicians, occupational health physicians and other non-clinicians.

Analysis of AIHW medical labour force data indicates that:

- Between 1997 and 2008, **the Australian clinician medical labour force increased by 45%, while the non-clinician medical labour force (that includes clinical academics) grew by only 14%**. This is a similar aggregate picture to the UK Medical Schools Council finding of relatively higher growth in the NHS workforce.
- It is not possible to use the pre-2000 labour force surveys to identify changes in the number of teacher/educators and researchers as the methodology for assigning staff to the clinician/non-clinician categories changed in 2000.
- In 2008 **there were 798 medical practitioners employed as teacher/educators and 1,131 employed as researchers**, comprising 1.2% and 1.65% respectively of registered medical practitioners employed in medicine in Australia. Table 1 shows the change between 2004 and 2008 in these categories, indicating a **substantial growth in the number of teacher/educator medical practitioners but a slight fall in the number of medical practitioners employed as researchers**.

Table 1: Employed medical practitioners by field of medicine, Australia, 2004 and 2008

Field	2004		2008		Change in number between 2004 and 2008 (%)
	Number	%	Number	%	
Primary care practitioner	22,011	37.8	24,029	35.0	9.2
Hospital non-specialist	6,202	10.7	7,902	11.5	27.4
Specialist	19,043	32.7	22,471	32.7	18.0
Specialist-in-training	6,710	11.5	8,825	12.9	31.5
Other clinician	891	1.3	..
Total clinicians	53,966	92.7	64,117	93.4	18.8
Administrator	1,300	2.2	1,287	1.9	-1.0
<i>Teacher/educator</i>	<i>556</i>	<i>1.0</i>	<i>798</i>	<i>1.2</i>	<i>43.5</i>
<i>Researcher</i>	<i>1,171</i>	<i>2.0</i>	<i>1,131</i>	<i>1.7</i>	<i>-3.4</i>
Other non-clinician	1,217	2.1	1,355	2.0	11.3
Total non-clinicians	4,245	7.3	4,571	6.7	18.0

Source: AIHW 2010, Medical labour force 2008 detailed tables, Table 5, www.aihw.gov.au

3.1.3 New Zealand

The annual surveys of the Medical Council of New Zealand report the number of medical practitioners using the categories of: general practice, house officer, medical officer, primary care other than GP, registrar, specialist and other.¹³ **The 'other' medical practitioner category (perhaps similar to the Australian non-clinician category) comprised a headcount of 291 doctors or 2.5% of the medical workforce in 2010, up from 207 doctors (or 2.4%) in 2005.** Unlike the situation in the United Kingdom and Australia, the 'other' category of medical practitioners in New Zealand grew more rapidly between 2005 and 2010 (41% increase) than the

total medical workforce (31% increase). However, it is unclear precisely what types of medical practitioners are included in the 'other' category, so the contribution of the clinical academic workforce to this growth is unknown.

3.1.4 United States

O'Sullivan and colleagues cite personal communication with the Association of American Medical Colleges in 2008 in stating that 'only 11.8% of US medical school graduates become academic doctors'.¹⁴ However, these data are not directly comparable with medical education systems in the UK, Australia and New Zealand, given the role of US medical schools in postgraduate medical education.

3.1.5 Canada

A 2009 discussion paper by the Association of Faculties of Medicine of Canada (AFMC) included another measure of the relative undersupply of the clinical academic workforce.¹⁵ The AFMC report observed that in the decade since 1999, there had been a 63% increase in medical undergraduate enrolment and a 69% increase in postgraduate enrolment in Canadian faculties of medicine. However, the number of part-time faculty increased by only 9%, while the number of full-time faculty increased by 27%. (Note: this pattern of higher rates of growth in full-time faculty is not replicated in Australia – see Section 3.2.3 for further information). The issue that Australia shares with Canada is the rapid growth in demand for medical education. Since 2000 there has been a 60% growth in the number of medical graduates from Australian universities, while the growth in commencing medical students has been even more significant (116%).

This pattern of demand for medical education outstripping the growth in the supply of the clinical academic workforce is an issue common to many countries.

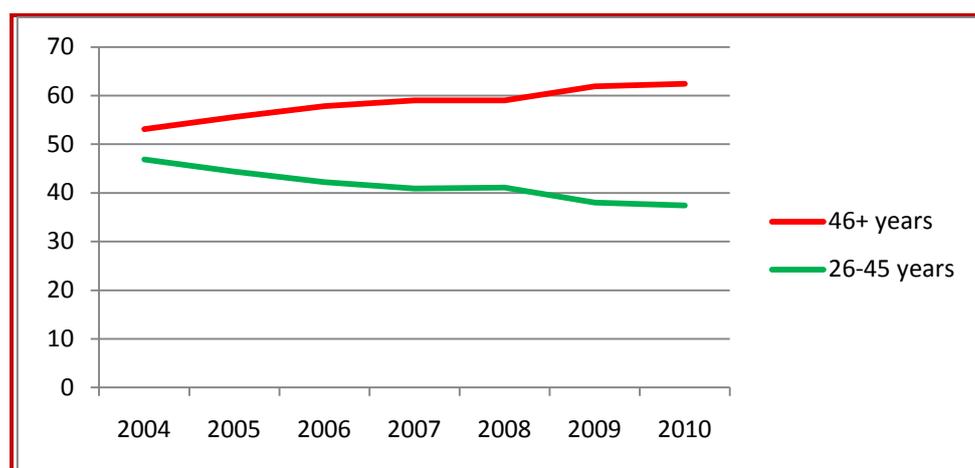
3.2 *Composition of the clinical academic workforce*

Other dimensions of the clinical academic workforce (apart from total numbers) are relevant in understanding its future sustainability. Frequently cited issues include ageing and the increasing dependence on casual and short-term fractional appointments.

3.2.1 An ageing clinical academic workforce

The most reliable data on ageing are from the UK Medical Schools Council surveys which have reported the age profile since 2004. Figure 3 illustrates the worsening of the age profile. In 2010 the share of the clinical academic workforce aged 46 or over is approaching two-thirds (62.4%); this compares to about one-half (53.1%) of the clinical academic workforce in this older age range only six years earlier in 2004. Over the same period, the share of the clinical academic workforce aged 56 and over increased from 17.5% to 22.9%. This ageing (higher numbers in the 'old, old' categories) will accelerate, given that the greatest number of clinical academics are currently in the 46-55 age range.

Figure 3: Age profile of the clinical academic workforce, United Kingdom, 2004-2010



Source: Medical Schools Council 2011, A survey of staffing levels of medical clinical academics in UK medical schools, London

3.2.2 A more senior clinical academic workforce

In the United Kingdom a more mature clinical academic workforce is also characterised by increased seniority of academic grades. Between 2000 and 2010 the academic grade profile changed as follows:

- **Professors:** increased from 29.4% to 41.5% of the clinical academic workforce;
- **Readers/senior lecturers:** decreased from 47.0% to 41.6%; and
- **Lecturers:** decreased from 23.6% to 16.9%.

The extent to which this changing profile is due to ‘escalation creep’, rather than reflecting genuine changes in the seniority of the clinical academic workforce, is unknown.

While there is no routine source of academic grade data for the Australian and New Zealand clinical academic workforce, medical schools provided data on their academic profile in 2009 under the Medical Deans Benchmarking Project. The ‘seniority’ of the academic grade profile has been calculated by examining the share of FTE in Levels D & E relative to all (non-casual) academic staff.

Table 2 shows the seniority of academic grades for medical schools which have been grouped into the following three categories:

- **Group of Eight:** The University of Adelaide, the Australian National University, the University of Melbourne, Monash University, the University of New South Wales, the University of Queensland, the University of Sydney, the University of Western Australia
- **Other Established Medical Schools (before 2000):** The University of Otago, the University of Auckland, the University of Tasmania, Flinders University, the University of Newcastle
- **Recent Medical Schools (2000 onwards):** James Cook University, Griffith University, the University of Notre Dame, the University of Wollongong, Deakin University.

(Note: Analysis of Benchmarking Project data in this Discussion Paper has excluded Bond University due to its different business model).

Table 2: Share of senior academic staff (FTE) by medical school groupings, 2009

Medical school grouping	Grades D & E academic staff/all academic staff (FTE)
Group of Eight	0.31
Other established medical schools (before 2000)	0.29
Recent medical schools (2000 onwards)	0.34

Source: Benchmarking Project (unpublished data), Medical Deans

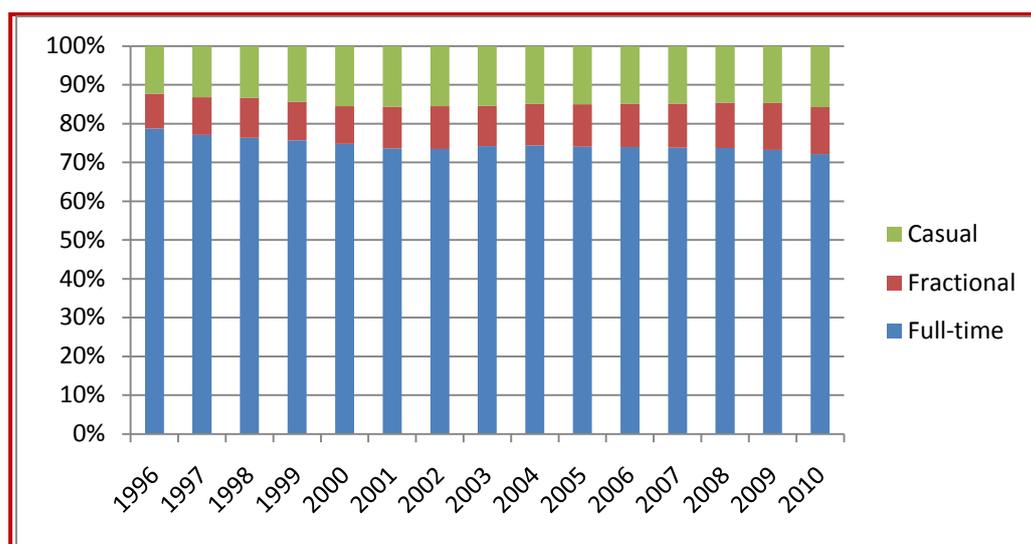
Note: This analysis excludes 2 medical schools that were not able to provide comparable data.

Table 2 appears to show that the more recently established medical schools have higher shares of senior (Grades D & E) academic staff; this may be an artefact of these schools employing more casual staff and potentially having smaller numbers of staff in Grades A, B & C. These data should be treated with caution and are indicative only, as they may not have been provided consistently across all medical schools.

3.2.3 An increasingly part-time clinical academic workforce

Labour force statistics reported by the Australian Department of Education, Employment and Workplace Relations indicate the long-term trend towards greater use of full-time fractional appointments and casual staff in Australian higher education institutions. Figure 4 indicates that between 1996 and 2010, the share of FTE staff who were employed on a full-time basis declined from 78.7% to 72.2%.

Figure 4: Profile of FTE staff in higher education institutions, Australia, 1996 to 2010



Source: DEEWR 2010, Selected higher education statistics – Staff 2010

Similar trend data is not available at a sufficiently disaggregated basis for medical schools. However, discussion with individual Deans of Medical Schools in Australia and New Zealand has highlighted the increased reliance in many medical schools on staff employed at very low fractional appointments (e.g. 0.1 or 0.2). Feedback from rural medical schools is that these fractional appointments are frequently clinicians with a full-time clinical load in health services who are strongly altruistic and invested in teaching the next generation of doctors. This approach to medical education involves strong reliance on ‘clinician educators’ in health services, with reduced input from university-based ‘academic clinician educators’.

The extent to which there is variation across medical schools in the use of fractional appointments has been examined through analysis of data from the Benchmarking Project. The ratio of full-time equivalent (FTE) to head count for academic staff is one crude indicator of the extent of fractional appointments across academic staff in medical schools. For example, a ratio of 1 would mean that the medical school had a head count

equivalent to its number of FTE academic staff (all staff are full-time); a ratio of 0.33 would mean that the medical school had a head count that was three times the number of its FTE academic staff (hence, employing more part-time staff). Table 3 indicates that the ratio of academic staff FTE to head count is lowest at 0.32 for the most recently established medical schools, many of which would be classified as rural. Table 3 also indicates that the Group of Eight medical schools have more reliance on part-time staff than the other established medical schools.

Table 3: Academic staffing profile (FTE: head count) by medical school groupings, 2009

Medical school grouping	Ratio academic staff FTE to head count
Group of Eight	0.51
Other established medical schools (before 2000)	0.61
Recent medical schools (2000 onwards)	0.32

Source: Benchmarking Project (unpublished data), Medical Deans

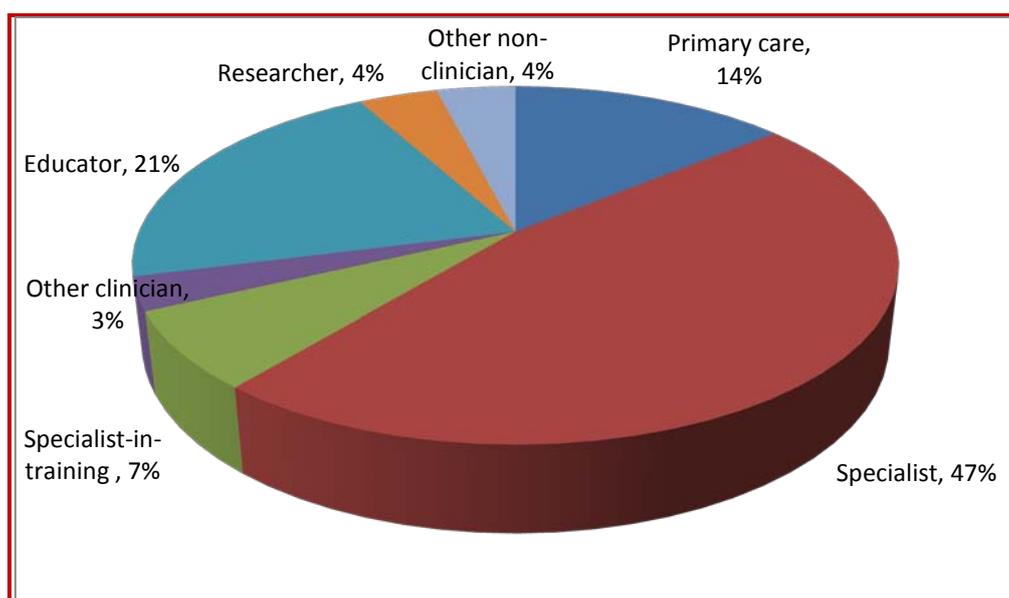
Note: This analysis excludes 3 medical schools that were not able to provide comparable data.

For medical schools, the reliance on fractional appointments implies a shift towards greater use of 'clinician educators'. In part, this may be an inevitable consequence of some of the changing dynamics of how medical education is being delivered: the growth of graduate entry programs and more emphasis on work integrated learning earlier in medical undergraduate degrees; the establishment of rural clinical schools which has involved expanding the pool of clinician educators; and the expansion of clinical training to a much wider range of community-based settings.

A study by medical educators at Monash University challenges the commonly held assumption that most medical education is provided by university-employed staff.¹⁶ Using unpublished data from the AIHW's medical labour force surveys, the study examined the proportion of time spent on medical education in 2006 using the clinician and non-clinician categories previously described (see Table 1).

Figure 5 shows that about one-quarter of medical education time was provided by university-based staff (educators and researchers). Unfortunately, the medical labour force surveys do not allow this analysis to be disaggregated by undergraduate and postgraduate education; this would no doubt result in a very different picture, reflecting the different contributions of medical schools and the Medical Colleges to undergraduate and postgraduate medical education respectively. Nonetheless, Figure 5 lends weight to the typology of the clinical academic workforce proposed in Section 2 of this paper: that is, clinician educators (who are more likely to hold fractional appointments) should be considered in any analysis of the clinical academic workforce, alongside academic clinician educators and academic clinician scientists.

Figure 5: Share of total time spent on medical education in Australia, by main occupation, 2006



Source: Joyce, Piterman and Wesselingh, 2009, 'The widening gap between clinical, teaching and research work', Medical Journal of Australia 19(3): 169-72.

3.3 The pipeline into the clinical academic workforce

The final data relevant to understanding the clinical academic workforce are indicators that measure whether young doctors are likely to choose an academic career, relative to other career options.

The Medical Schools Outcomes Database (MSOD) includes Australian and New Zealand data on interest in medical teaching and research for commencing medical students (since 2005) and for exiting medical students (since 2008). The Australian National Reports indicate that:

- In 2005 and 2006, about two-thirds of commencing medical students at the six medical schools (then participating in the survey) indicated they had an 'interest in medical teaching and/or research'.
- In subsequent years, this question was split to elicit interest in medical teaching separately from interest in research, and the survey was extended to all Australian medical schools. Over the last three years (2008 to 2010), **about two-fifths of commencing medical students (range of 42% to 45% across the 3 years) have expressed interest in medical teaching, while about one-third (range of 31% to 36%) have expressed interest in research.**
- The first longitudinal cohorts of students completed the exit questionnaire in 2008 (3 medical schools) and 2009 (8 medical schools). In 2009 **about three-quarters (78%) of exiting students at the 8 participating medical schools expressed interest in medical teaching, while about one-half (49%) expressed interest in research.**

These data suggest relatively strong interest among medical students in contributing to medical teaching (and research) in the future. However, it is unclear how much of this interest relates to pursuit of a full-time career in academic medicine versus intended participation in teaching and research as a subsidiary activity by future clinicians. It is also unknown at this stage (although the longitudinal tracking nature of MSOD will support this analysis in the future) the extent to which 'interest' in medical teaching and research is converted to actual participation in these fields.

In thinking about the pipeline for medical students interested in a career in academic medicine, another relevant measure might be the completion of other (non-medical) degrees. The assumption is that most academic clinician scientists would generally hold a doctorate in addition to their medical qualifications, while many academic clinician educators would also hold multiple degrees.

In examining the projected requirements for the Australian medical research workforce, Schofield and colleagues have argued that Australia has a relatively low rate of PhD completions in the workforce (8 per 100,000) compared with other nations: the US rate is 11 per 100,000, while Germany (20) and Switzerland (28) have even higher rates of PhD completions.¹⁷ However, the MSOD sheds some interesting light on the extent to which medical students might be disproportionately more likely than the general population to hold a PhD and/or other (non-medical) degrees.

The 2011 Medical Training Review Panel annual report included MSOD data from the 2009 cohort of commencing medical students. These students were asked about their highest prior tertiary qualification, with the results disaggregated by students in undergraduate entry and graduate entry programs. Table 4 indicates that only about 7% of commencing medical students in undergraduate entry programs have completed a prior degree, compared to most medical students in graduate entry programs (by definition). However, **of particular relevance to the future clinical academic pipeline is that about 8% of all graduate entry commencing medical students had completed either a Masters or PhD qualification.** This is a strong pool of candidates that are likely to be actively interested in an academic career, perhaps suggesting an unintended beneficial outcome of the implementation of graduate entry degree programs.

Table 4: Highest level of prior tertiary qualification for commencing medical students, by type of medical degree entry program, Australia, 2009

Level of prior degree	Undergraduate entry	Proportion undergraduate (%)	Graduate entry	Proportion graduate entry (%)	Total
PhD	1	0.9	39	2.4	40
Masters	13	11.9	92	5.6	105
Graduate Diploma / Certificate	15	13.8	51	31	66
Honours	10	9.2	236	14.1	246
Bachelor	63	57.8	1,219	74.3	1,282
Other / Unknown	7	6.4	3	0.2	10
Total with prior degree	109	100.0	1,640	100.0	1,749
Total students	1,501		1,661		3,161

Source: Based on Table 2.8, MTRP 2011, Fourteenth Annual report (based on MSOD data)

From 2009, the MSOD exit questionnaire has also asked students if they have undertaken (not necessarily completed) any additional university qualifications since commencing medical school. Table 5 reports the number and level of additional qualifications for the 2009 exiting cohort of medical students. (As this is a different cohort to the 2009 commencing students reported in Table 4, the data are obviously not additive). **Table 5 indicates that a substantial share (20%) of exiting medical students in 2009 had undertaken an additional qualification while they were completing their medical degree.** About 4% of students had undertaken two additional qualifications. Again, this represents another strong pool of doctors who may be both interested and well-suited to a career in academic medicine.

Table 5: Additional tertiary qualifications for exiting medical students, Australia, 2009

Level of degree undertaken since commencing medical school	First degree (Number)	First degree (%)	Second degree (Number)	Second degree (%)
PhD	5	2.3	2	4.4
Masters	2	0.9	8	17.8
Graduate Diploma / Certificate	6	2.8	5	11.1
Honours	0	0	1	2.2
Bachelor	200	91.7	27	60.0
Other / Unknown	5	2.3	2	4.4
Total undertaking degree	218	100.0	45	100.0
Total students completing exit questionnaire	1084		1084	

Source: Medical Deans 2011, Unpublished MSOD data

In summary, Section 3 has described and quantified some of the challenges facing the clinical academic workforce including:

- The **growth of the clinical academic workforce has not necessarily kept pace with the rapid growth in demand for medical education** experienced over the past decade;
- However, Australian medical labour force data indicate that **there has been comparatively strong growth in medical practitioners being employed in medical education** (teachers/educators) (44% between 2004 and 2008), relative to medical practitioners being employed as clinicians (19%). More aggregate data in New Zealand suggest a similar trend;
- While demographic trend data are not available for Australian and New Zealand medical schools, **it is generally accepted that the academic workforce is ageing**, similar to the recorded pattern for UK medical schools;
- There is a **long-term shift across academia towards more use of part-time and casual staff**. The more recently established medical schools (since 2000) in Australia and New Zealand appear to make more use of limited fractional appointments, particularly some of the rural medical schools;
- Australian **medical students express high levels of interest in medical teaching and research**. Even more promisingly, relatively high shares (about 8%) of commencing medical students in graduate entry programs have already completed other postgraduate degrees. Also encouraging is the finding that about one-fifth of exiting medical students had undertaken other qualifications while studying for their medical degree.

Discussion Questions:

- *For the data presented, what attributes of the workforce constitute the most significant threats? The most promising opportunities?*
- *To what extent are these threats and opportunities common to all medical schools? Or, do they vary according to attributes of the medical school (e.g. age, location, research intensity, type of undergraduate entry program, other features)?*
- *Are there other data available that contribute to understanding the future sustainability of the clinical academic workforce?*

4. Other Challenges Facing the Clinical Academic Workforce

Section 3 has highlighted some of the challenges using data that describes the magnitude and composition of the clinical academic workforce. This section outlines the issues for the clinical academic workforce identified from other literature.

4.1 ICRAM's views of the issues affecting academic medicine

As described in Section 1, the International Campaign to Revitalise Academic Medicine (ICRAM) is an international consortium that has been involved in analysing the issues affecting academic medicine, as well as proposing strategies to redress these problems.

In its 2005 report, the ICRAM identified what it described as 'current instabilities' in academic medicine.¹⁸ For the purposes of this Discussion Paper, these factors have been grouped into the following four categories (and are listed below in Table 6):

- Issues affecting individual recruitment to academic medicine;
- Issues affecting individual retention in academic medicine;
- Issues affecting the systemic attractiveness of academic medicine; and
- Other issues relevant to the future of academic medicine.

While this issues grouping was not used by ICRAM, it perhaps serves to highlight that many of the 'current instabilities' raised by ICRAM are very broad concerns related to the portrayal of academic medicine and the environment in which it is operating. Fewer issues were identified by ICRAM that directly impinge on recruitment to, and retention in, academic medicine.

Table 6: Instabilities affecting academic medicine

Issues affecting individual recruitment to academic medicine	Issues affecting individual retention in academic medicine	Issues affecting the systemic attractiveness of academic medicine	Other issues relevant to academic medicine
<ul style="list-style-type: none"> • Unclear and inflexible career path • Financial disincentives for academic medicine careers • Growing reluctance of doctors to pursue a career in research 	<ul style="list-style-type: none"> • Emerging impossibility for simultaneous competency in clinical practice, research and teaching for individuals • Inappropriateness of using citation indices in research assessment • Problems with career progression, particularly for women 	<ul style="list-style-type: none"> • Inadequate leadership in academic medicine • Lack of well-resourced institution to speak for academic medicine • Poor relationship between academic medicine and key stakeholders including patients, policymakers, practitioners, the public and media • Squeezing of academic medicine due to pressure on health services and introduction of health care reforms 	<ul style="list-style-type: none"> • Lack of capacity for translational research • Research often not concerned with biggest health problems • Substantial gap between best, evidence-based practice and what actually happens • Growing gap between academics and practitioners • Failure of medical education to prepare graduates for careers in modern medicine

Source: Derived from: Awasthi, S., Beardmore, J. et al. 2005, The future of academic medicine: Five scenarios to 2005, Milbank Memorial Fund

4.2 Other literature on barriers and enablers influencing the clinical academic workforce

4.2.1 Factors influencing entry into the clinical academic workforce

A 2006 systematic review of the literature from 1990 to May 2005 examined factors that acted as disincentives or incentives to choosing a career in academic medicine.¹⁹ Table 7 summarises the identified disincentives, showing the relevant study population. **Lower remuneration is a common theme**, although the majority of these studies were undertaken in North America where medical students are likely to have high levels of student debt.

Table 7: Disincentives to a career in academic medicine (quantitative studies)

Study participants	Main findings
GPs working in academic departments in the United Kingdom	Lower income (81%) Competing pressures to do clinical service, teach and research (38%)
All members of the Canadian Association of Radiologists and all physicians who completed the radiology residency program at the University of British Columbia from 1980 to 1990	Lower income in academic medicine (30%) Pressure to carry out research and publish (16%)
Neurology program directors in US and Canada asked to invite residents in their programs	Median debt - \$25 to 49,999 for those interested in academic medicine; \$100 to 124,999 for those uncertain; \$50 to \$74,999 for those not interested in academic medicine (p<.003)
Fellows of the American College of Obstetrics and Gynaecology and obstetrics and gynaecology residents taking the 1998 in-training exam	Academic medicine too bureaucratic Low income in academic medicine
Random sample of candidates who passed the qualifying exam for the American Board of Dermatology	Low income (65%) Politics (30%) Lack of autonomy (25%)
Radiologists who graduated between 1981 and 2000 from Columbia University, New York	Lower financial rewards (77%) Low efficiency in academic institutions (54%) Family influence (54%)

Source: Straus, S. E., C. Straus and K. Tzanetos 2006, 'Career choice in academic medicine', *Journal of General Internal Medicine* 21: 1222-9.

The systematic review also identified the following **five incentives to enter academic medicine**:

- **Completion of graduate degree/fellowship or research:** A career in academic medicine was positively associated with: completion of graduate degrees (including a PhD or MPH); participation in fellowship programs or success in research training programs; completion of research and publication during medical school and residency.
- **Desire to carry out research:** Several studies have identified that those in academic medicine have more positive views about the value of research and the challenge associated with research than those in non-academic medical careers.
- **Desire to teach:** Similar findings were observed in regard to teaching, with satisfied physician educators finding stimulation from their students and valuing their impact on training.
- **Intellectual stimulation:** The intellectual stimulation available through an academic career was important over and above the opportunity to teach and undertake research.

- **Influence of a mentor or role model:** Doctors in academic medicine were more likely to have reported the positive influence of a mentor or role model in their career decision versus those in private practice.

In addition to the systematic review, the other reports likely to be of most relevance to Australia and New Zealand in understanding factors influencing entry into the clinical academic workforce are those produced by the UK Academy of Medical Sciences (AMS). The AMS has identified three key disincentives to a career in academic medicine, namely:

- The lack of a career structure in clinical academic medicine;
- Insufficient flexibility in combining clinical and research training; and
- The prolonged insecurity of clinical academic training.²⁰

The first two issues about the lack of a career structure and the inflexibility of combining clinical and research training are essentially about **the difficulties medical students face in navigating a pathway into the clinical academic workforce**. These concerns are mirrored in Australian studies. For example, Kumar and colleagues have argued that the ‘training and professional progression pathways in academic medicine are long, inflexible and financially unattractive’. They cite one of the participants in their focus groups/interviews study at one Australian medical school as follows:

*“...you need an ordinary degree, honours degree, PhD and specified number of post-doctoral research, all poorly paid, and very insecure, at the end of which you might, if you’re lucky, get a lectureship, which is not as secure as it used to be, it’s not very well paid, and for which you can expect a lot of hard work before you get to, say, the lofty heights of an associate professor whereupon you’ll probably be ready to retire”.*²¹

4.2.2 Factors influencing retention in, or attractiveness of, the clinical academic workforce

Other studies have focussed on the experience and satisfaction of clinical academic staff to better understand concerns of those ‘in the system’. While there is clearly some overlap in issues affecting recruitment and retention, these studies identify a range of other factors that are likely to be important in the future sustainability of the clinical academic workforce.

Some of these other factors include:

- **Teaching viewed as the ‘poor relation of research’:** Several studies have argued that teaching is often poorly valued, relative to research, so impacting on the satisfaction of staff on the ‘academic clinician educator’ track. It has been suggested for example that academic promotion and reward schemes need to be changed to incorporate the value of teaching.²² While this issue may be universal, it has also been argued that academic teaching may be less valued in some research-intensive universities.²³ A pithy quote from the former editor of JAMA summarised the problem as follows:

*“The traditional 3-legged stool of academic medicine comprising education, patient care, and research is broken. The education leg is currently being held together by peanut butter and bubble gum combined with the unselfish persistence of faculty dedicated to teaching. At a minimum, medical schools must recognize the importance of teaching in promotion and tenure decisions”.*²⁴

- **Insecurity of academic positions and competition for research funding:** Another aspect of the challenge from the perspective of would-be researchers is the competitive nature of the research environment. Difficulties in obtaining research grants have been cited as a major disincentive by junior doctors in academic posts in the UK.²⁵ These doctors were also concerned about the limited availability of senior academic appointments, an issue which impacts on academic clinician educators as well as academic clinician scientists.
- **Autonomy, work-life balance and juggling the competing pressures of teaching, research and patient care:** Many studies cite issues about the general pressures faced by academics to succeed in multiple areas. A common theme – reflecting the three-track approach to the clinical academic workforce – is about staff wanting to change their work patterns to devote more time to their particular professional orientation (whether it be teaching, research or clinical practice).^{26, 27} Academic staff surveyed at a Canadian medical faculty spoke of how juggling competing demands resulted in task fragmentation and limited their scholarly output, suggesting that:

*“It would be extremely helpful to be able to take a block of time off from clinical work, say a month, and during this block of time it is known and expected that you are working on education scholarship, but you would still receive a salary during this time.”*²⁸
- **Professional leadership, mentors and faculty support:** A final bundle of issues relates to leadership in academic medicine. This can include many dimensions including supporting innovation in clinical teaching, continuous faculty development and ensuring accountability in assessment.²⁹ The importance of good socialisation and support practices has also been advocated in response to what are seen to be typically informal and laissez-faire approaches to staff development.³⁰

Discussion Questions:

- *Are there other factors that are considered to be significant incentives or disincentives to either recruitment or retention to the clinical academic workforce?*
- *For Australia and New Zealand, what are the most important barriers and disincentives to a clinical academic career that need to be overcome?*

5. Potential Strategies to Improve Sustainability of the Clinical Academic Workforce

The challenges confronting academic medicine are heterogeneous. Different factors impact at different stages in the pathway of choosing to enter or stay in academic medicine. Moreover, some of the issues affecting the sustainability of the clinical academic workforce are likely to vary across different types of medical schools: rurality, ability to attract research funding and academic reputation may independently influence success in building a clinical academic workforce. The issues may also differ depending on the clinical track or professional orientation – whether the doctor is predominantly a clinician educator, an academic clinician educator or an academic clinician scientist.

This diversity of issues and perspectives means that there is not likely to be a ‘one size fits all’ solution. Instead, a suite of strategies might be needed to tackle different aspects of the issues facing academic medicine. In thinking about potential strategies, two organizing dimensions have been considered:

- Whether the strategy primarily targets recruitment or whether it is more generally directed towards increasing retention and the attractiveness of a career in the clinical academic workforce; and
- Whether the strategy is a ‘structural’ reform that requires action at the national or whole-of-system level or whether it can be implemented successfully at a local level by individual medical schools.

Table 8 summarises some potential strategies described in this final section of the Discussion Paper, arrayed within this 2x2 matrix. These are not the entire universe of potential strategies; they have been selected based on recommendations from the literature and/or the views of individual medical deans about the strategies most likely to be required in Australia and New Zealand.

Table 8: Potential strategies to improve sustainability of the clinical academic workforce

	Targeting recruitment	Targeting retention and attractiveness of academic medicine
Requires national action	1. Establish an Integrated Clinical Academic Training Programme	2. Facilitate communities of practice for clinician educators in academia and health services 3. Implement a vertically integrated rural medical career pathway
Suitable for local implementation	4. Implement structured mentoring and role model programs	5. Promote faculty development, leadership and the scholarship of medical education 6. Develop remuneration support mechanisms 7. Establish Academic Health Centres

5.1 Establish an Integrated Clinical Academic Training Programme

The development and implementation of an integrated academic training path in the UK was an outcome of the Walport report under the Modernising Medical Careers reform theme of the NHS.³¹ The Walport proposals responded, in particular, to concerns about the lack of a clear route of entry into academic medicine, the inflexibility in the balance of clinical and academic training, and the shortage of adequately structured and supported positions upon completion of training.

The Walport report proposals built upon other major changes that were being introduced to postgraduate medical education, including the introduction of two-year Foundation Programmes and the remodelling of specialist training to be more competency-based (rather than time served). Figure 6, taken from the Walport report, illustrates the proposed integrated academic training paths for researchers and educationalists.

Figure 6: Integrated academic training paths

Figure 6.1: Integrated academic training path for researchers

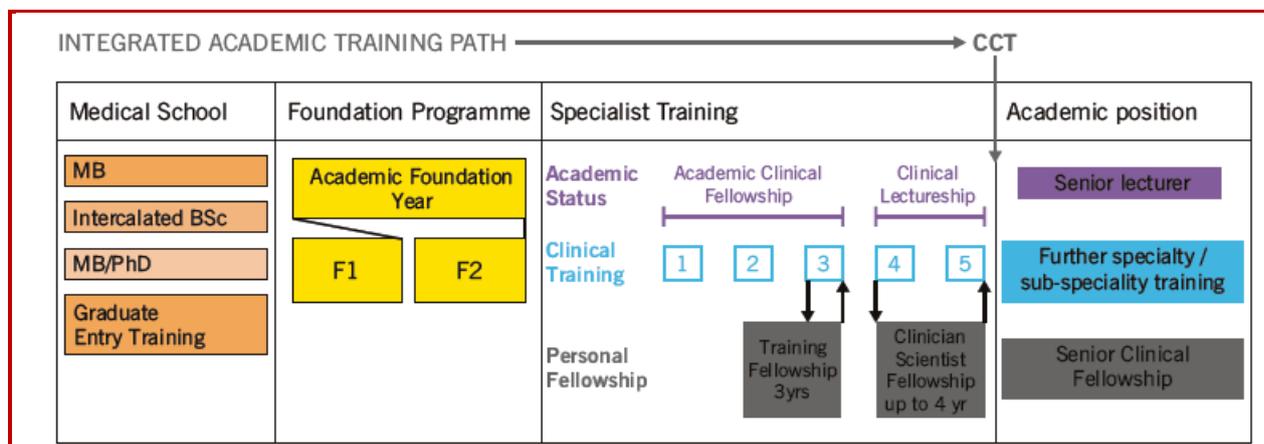
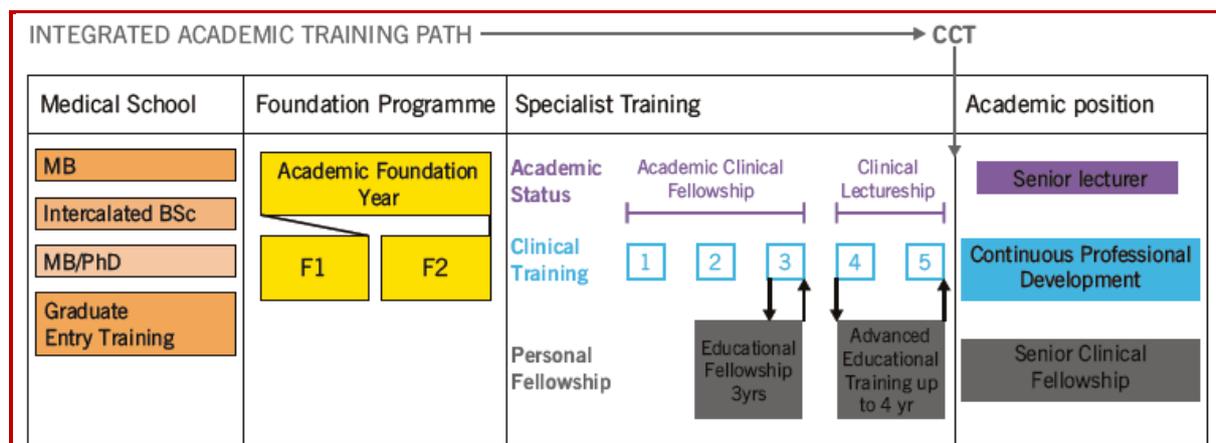


Figure 6.2: Integrated academic training path for educationalists



Note: CCT is Certificate of Completion of Training

The key elements of a proposal to introduce a similar integrated academic training programme in Australia and New Zealand are outlined in Figure 7. The establishment of an integrated academic training programme would involve a partnership between universities, the medical colleges and national departments of health in both countries, driven by the objective of providing a comprehensive and strategic approach to the development of the next generation of clinical academics. The outcome would be a clinical training scheme that provided clear direction and opportunity to doctors potentially interested in a career in academic medicine.

The development of such a program in Australia and New Zealand would give equal prominence to the development of both academic clinician educators and academic clinician scientists. (It should be noted that while the Walport report includes both of these academic tracks, much of the UK emphasis has been on strengthening the research arm of the clinical academic workforce, rather than the educational or patient care arms.)

Figure 7: Proposal for an integrated clinical academic training programme

Primary Medical Qualification

At this stage it is not proposed that fundamental changes are made to the primary medical qualification. Universities may decide to develop an integrated MBBS / PhD programme which may alter subsequent academic training by removing the need to achieve a higher degree by research. The opportunity to support the development of combined MBBS / PhD programmes would be significantly enhanced with the availability of competitive scholarships that for the student would remove the costs of the additional three years of study. The scholarship would need to include fees, living costs and a contribution to research costs.

Academic Internship

An integrated substantive two-year academic internship would be established. This would contain core elements of the current PGY1 and PGY2 framework but would be coupled with key academic components. The ratio between clinical and academic components would be around 75:25. The academic internships would be made available as a partnership between a university and a health care provider. The trainee would be given certainty of employment for the two-year period. The academic component would include some research experience, coupled with education in research methods and education. These components would be designed to provide a common platform for progression into the next stage of the academic pathway.

Junior Clinical Fellowship

This role would be a full time role for two / three years to enable the completion of a supervised higher degree by research (MD or PhD). The Fellow would be based within a host academic department and enrol in a full time degree. They may, as a graduate teaching assistant (or equivalent), undertake a small amount of supervised teaching. Options for remuneration include scholarship or salary.

Senior Clinical Fellowship

The senior clinical fellowship will run throughout the duration of specialist/vocational training. To be eligible the applicant must have already completed a higher degree by research. It is proposed that for each vocational training pathway a specific number of training positions are made available for senior clinical fellowships. The number could either be based on:-

- estimated workforce requirements. This would take into account the overall size of the training programme, the age of the current academic workforce, estimated need (educational and research requirements) and current vacancies
- a fixed percentage of the available training places. This would see each training programme allocate the same percentage of places to senior clinical fellowships. Based upon indicative calculations, currently this would be approximately 5% of all places if Australia and New Zealand are to meet estimated net academic medical workforce requirements.

The Fellow will be appointed into a substantive role for the duration of their training and be based within a host academic department. They will rotate through a series of posts appropriate to their vocational training. Approximately 25% of their time during the course of the vocational training would be devoted to academic work. This would equate to approximately 1 year of a 4 year vocational training programme. The fellowship must allow the individual to be based in one geographical location for its duration. It would be anticipated that a number of trainees, building an academic career in the scholarship of education would develop a portfolio of research and scholarship over this period focussed upon medical / health professional education.

Clinical Lectureship

A number of clinical lectureship positions would be established. These would be for medical academics who had completed their clinical and academic training, prior to appointment as a medical academic specialist / senior lecturer. They would provide an opportunity to develop an independent academic portfolio of research. The positions would be competitively appointed and hosted jointly by a university and a health care provider. In addition to full salary, the position would come with sufficient research funding to support the nominated 2 year research project.

These positions would carry a small clinical load (0.2 to 0.4 FTE maximum). The lecturer would be expected to make a contribution to teaching of medical students but the balance (0.5FTE) would be devoted to a funded research project.

Source: Professor Iain Martin, Dean, Faculty of Medical and Health Sciences, University of Auckland

As Figure 7 indicates, critical success factors for the establishment of an integrated academic training programme in Australia and New Zealand will include:

- The development of new and integrated models for academic internships that allow trainees to balance academic learning (including research experience and education in research methods) and clinical learning;
- The identification of funding options and sources to support the delivery of structured approaches to academic development; and
- The capacity to flexibly integrate specialist/vocational training with ongoing academic progression on a structured career pathway.

5.2 Facilitate communities of practice for clinician educators in academia and health services

The changing nature of medical education outlined in Section 3 includes an earlier exposure to clinical practice (work integrated learning) across a wide range of settings, with universities also increasingly relying on clinician educators employed under short-term fractional appointments (Table 3). Taking postgraduate training into account, about three-quarters of all time spent in medical education is provided by doctors whose orientation is primarily clinical (Figure 5).

Accordingly, this second strategy is driven by the view that the development of collaborative linkages across doctors involved in medical education in academia and health services could serve two important functions: it could potentially reinvigorate the status of scholarship in medical education; and it could provide support and a stronger academic orientation for clinician educators who may be somewhat isolated in their teaching roles.

One model for how this strategy might work is offered by the ‘national clinician educator program’ developed by the Royal College of Physicians & Surgeons of Canada in 2007.³² It is important to note that the College’s usage of the term ‘clinician educator’ is different to that adopted in this Discussion Paper. The College uses the term to describe doctors with formal training in medical education who provide consultative advice for educational projects undertaken by faculty in the health professions; these doctors may be employed in universities or hospitals. Putting linguistic differences to one side, the potentially translatable concept is about establishing a virtual community of practice involving senior medical educators in university medical schools and in health services.

While the domain of the Canadian model is postgraduate medical education, medical schools in Australia and New Zealand could encourage the development of a community of practice for undergraduate medical education. The Canadian model evolved to shift from information-sharing to ‘work-relevant knowledge building’ based around a series of projects, led by individual members of the community of practice. Projects undertaken by the Canadian community of practice included: education scholarship; faculty development courses and educational workshops; conference development and presentations; accreditation standards; and publications. While there has not been a formal evaluation of the Canadian model, participants have cited positive benefits of the program including: improved educational problem-solving, recognition of educational needs and development of new projects, enhanced personal educational expertise, maintenance of professional satisfaction and retention of group members.

This strategy has been listed as one involving national action, meaning that it would yield better outcomes if it were undertaken on a wider scale than being implemented on an ad hoc basis by individual medical schools. However, the usual understanding of a community of practice is that such a development cannot be ‘mandated’, but must be initiated by local ‘champions’ that can communicate the benefits of collaborative networking across institutional boundaries. This strategy is proposing that medical schools provide support to

encouraging the emergence and bringing together of such medical education ‘champions’ in a community of practice operating across Australia and New Zealand.

5.3 Implement a vertically integrated rural medical career pathway

The evaluation of the rural clinical schools and university departments of rural health (the Urbis review) demonstrated the success of these programs in building a rural clinical academic workforce.³³ These programs were testament to the ability to expand the clinical academic workforce and to create a research culture in rural Australia. Their success was based upon significant investment in infrastructure to undertake clinical training, coupled with funding that recognised the diseconomies of scale associated with the provision of clinical teaching on a distributed basis in rural and remote locations.

While these programs are well-regarded, a challenge raised by the Urbis review is whether further action is required to tackle the lack of rural internships, prevocational placements and vocational training opportunities in rural and remote Australia. From the perspective of the sustainability of the clinical academic workforce, the issues include:

- Ensuring that rural clinical education environments are sufficiently attractive to retain existing academic staff and to recruit new staff from other locations; and
- Promoting ‘regeneration from within’, meaning that some rurally trained young doctors graduate to a career in academic medicine in rural areas.

The concern identified in the Urbis review (and echoed by rural medical schools) is that the disjunction in medical training – with limited access to prevocational and vocational training opportunities in rural areas – results in ‘leakage’ of rural doctors back to metropolitan areas.

Strategies to tackle this issue could involve incremental, or more fundamental, reform of rural medical education. For example, the Commonwealth Government is already increasing its level of financial support for specialist medical training places that are being offered in partnership with the medical colleges. Over 500 specialist trainee doctors are being supported under the Specialist Training Program, with about one-half of the training sites located in regional, rural and remote areas.³⁴

While this initial investment is welcome, it will need to be rapidly expanded to respond to the unprecedented demand for specialist training that will flow from the substantial increases in the number of medical graduates over the past and coming decades. This situation is likely to require a major commitment by Health Workforce Australia to planning, and potentially funding, specialist training places. This will need to be underpinned by a coherent, national strategy for the distribution of specialist training places, which could, for example, seek to ensure adequate distribution of these places in rural areas and other identified ‘areas of need’.

In terms of the clinical academic workforce, there would be value in leveraging off the existing investment in rural clinical schools and university departments of rural health. Funding the academic component of specialist registrar posts in rural areas could help support the ‘internal regeneration’ of academic medicine in rural areas.

At a more fundamental level, the Urbis review recommended that governments encourage vertical integration opportunities “to link more closely rural clinical schools, postgraduate and vocational training systems, including the implementation of a rural medical career pathway”. Such an approach would be compatible, and could be aligned, with the establishment of an integrated academic training programme outlined earlier.

5.4 **Implement structured mentoring and role model programs**

Moving from national to more local action, **there is good evidence of the importance of role models and professional support in identifying and recruiting doctors into the clinical academic workforce.**

The positive influence of a mentor or role model was identified in the systematic review as one of the five key incentives contributing to doctors entering academic medicine.³⁵ In the United Kingdom a study of trainee obstetricians and gynaecologists who were enrolled in an MD (subsequent to the Modernising Medical Careers changes promoting academic training) found low rates of completion and entry to academic medicine. It was argued that providing integrated academic training may not be sufficient to boost entry into academic medicine and that mentorship also needed to be improved to ensure sustainment of high academic aspirations and performance.³⁶

A strong role for mentors is in accordance with other reforms to medical education such as the shift towards long-term generalist placements that encourage close integration between clinical learning and patient care (sometimes referred to as **longitudinal integrated clinical clerkships**).³⁷ In a passionate plea for 'educational continuity', some senior American medical educators have argued as follows:

“Establishing connections between faculty, other caregivers and among faculty across disciplines is critical to forming a productive learning community. Students and longitudinal preceptors share the professional intimacy of dual responsibility for patient care...Continuity of supervision also provides the luxury of intergenerational, iterative dialogue grounded in practice about values, professionalism, and lifelong learning.”³⁸

This type of model, with a focus on generalism and continuity, has become the mainstay of medical undergraduate education, particularly in rural areas. Other universities have also implemented structured approaches to mentoring. For example, the Notre Dame School of Medicine Sydney introduced a mentoring model in 2010 as part of extending teaching into private environments. This mentoring model uses case-based presentations, with each student attached to an individual clinician for 5 weeks.³⁹

The more systemic use of structured mentoring may contribute to early identification of potential candidates for the clinical academic workforce.

5.5 **Promote faculty development, leadership and the scholarship of medical education**

While many reports focus on new recruitment into the clinical academic workforce, **it is at least as important to provide an environment that encourages and rewards existing staff.** The value of non-monetary approaches to academic staff support and recognition is amplified in the situation where it is obvious that more attractive remuneration packages are readily available if doctors choose to become full-time clinicians, particularly in private practice.

The Association of Faculties of Medicine of Canada (AFMC) 2009 Discussion Paper on clinical teachers provides a good stocktake of strategies that might be used to support faculty development.⁴⁰ The AFMC argues that:

“Faculty development should be presented as an intrinsic part of functioning as a clinical teacher, rather than as an option.”

Recommendations from the AFMC include:

- **Collaboration and a national inventory of exemplary practices:** There should be structures to enable multiple levels of interaction and collaboration related to clinical teaching. Funding should be available to establish a national inventory of exemplary practices, covering all areas relevant to

clinical teaching. A mandatory introduction to clinical training, based on these exemplary practices, should be developed for new instructors.

- **Assessment:** Each faculty should have a centralized, standardized and timely process that supports 360° written feedback to clinical teachers.
- **Continuous faculty development:** There should be a requirement for periodic refresher courses in teaching. These should be located at sites close to where teaching occurs and focus on practical aspects of helping students to learn.
- **Salary and promotion decisions:** Promotion criteria could be clear, widely available and include suitable emphasis on education and associated administration. Universities should strive to provide rewards for clinical teaching staff whose teaching excels and consider means by which pressure can be brought to bear on those whose teaching performance is substandard.
- **Recognition:** Recognition should include both ongoing public acknowledgement of the important contribution of clinical teaching, as well as suitable financial reimbursement.

One important element of faculty development is ensuring that **there is adequate recognition for teaching-only staff within academic career structures.**⁴¹

It should be noted that these recommendations from the AFMC could apply equally to ‘clinician educators’ working in health services, as well as academic clinician educators. In the Australian and New Zealand context, this may require a more rigorous approach to supporting ‘clinician educators’ with small fractional appointments whose primary role is patient care in health services, as well as ensuring a robust approach to faculty development of staff who are primarily employed by the university.

5.6 Develop remuneration support mechanisms

The ‘elephant in the room’ of remuneration disparities between academic and clinical positions is an ongoing challenge, for which there are no easy solutions. While medical schools may champion the privilege of academic teaching and expound on the allure of biomedical and health services research, pay disparities remain a real concern.

Some states have previously provided financial support through ‘gap closing packages’ where financial support in the form of loadings or salary top-ups is made available to support clinical recruitment by universities.

The other obvious source of financial support is through research funding. It is important to note that an absolute prerequisite for the implementation of the integrated academic training pathway in the UK was the provision of a range of financially supported clinical fellowships and clinical lectureships. Significantly, there was a diversity of funding sources in the UK to support new academic positions including the National Institute of Health Research, the Medical Research Council, the Department of Health and various research charities.⁴²

Medical schools in Australia and New Zealand will similarly need to look to a diversity of funding sources if the proposal to implement an integrated clinical academic training programme is to proceed. The NHMRC has a range of funding support available, targeted at either individuals or research groups. Funding available for clinical academics includes both early career and career development fellowships, practitioner fellowships, research fellowships and translating research into practice fellowships. Other sources of potential funding include some state governments. For example, the Centre for Healthcare Improvement in Queensland Health offers Clinical Academic Fellowships to retain, develop and recruit outstanding researchers.⁴³ This program is about encouraging the establishment of new full-time clinical academic positions in Qld Health.

5.7 Establish Academic Health Centres

Finally, the **establishment of new centres that bring together major teaching hospitals and medical research institutes is one approach to creating an intellectually stimulating environment for the clinical academic workforce**, as well as encouraging translational research and improving patient health outcomes.

One such example is the recently established Academic Health Sciences Centre at Randwick involving: University of New South Wales Medicine, the Prince of Wales Hospital, the Royal Hospital for Women, Sydney Children's Hospital, the University of Technology Sydney Faculty of Nursing, Midwifery and Health, the Black Dog Institute, Children's Cancer Institute Australia, Neuroscience Research Australia and the Eastern Heart Clinic.

Academic health centres strengthen the nexus across patient care, teaching and research. The critical mass of participants required to develop such centres is, however, likely to be mainly located in metropolitan areas.

Discussion Questions:

- *Is there support for progressing the introduction of an integrated clinical academic training programme for Australia and New Zealand? Is there agreement on the key elements and framework for such a programme, as outlined in Figure 7? What would be the most important first steps in commencing the planning of this programme?*
- *Of the other identified strategies, which has the highest priority?*
- *Are there other important strategies that should be incorporated in planning for the future sustainability of the clinical academic workforce in Australia and New Zealand?*

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