Clinical academic pathways in medicine

2013. Revised 2019

1. Introduction

1.1. Clinical academics are clinician leaders who, through training and experience, have decided to make research and/or education a significant part of their professional career, and are fundamental to this process.[1]

1.2. International academic communities, including Australia, New Zealand, the United Kingdom (UK) and United States, agree there is a need to support, consolidate and strengthen clinical academic pathways to ensure the sustainability of academic medicine.[2]

1.3. The demise of clinical academic hospital departments, decline in academic positions, and an ageing, increasingly part-time workforce has made it difficult for existing clinical academics to continue research and meet the demand for education and training from growing numbers of medical graduates and vocational trainees.[3,4,5,6,7] Junior doctors are less inclined to consider a career in academic medicine because of the challenges associated with career progression, job security and remuneration.[8]

1.4. The current focus on medical workforce planning and investment in health and medical research[9,10] creates an unprecedented opportunity to develop sustainable training pathways, funding models and infrastructure in support of clinical academic practice and to revive the attractiveness of clinical academic medicine as a career.[3]

1.5. This document outlines the AMA position on building and supporting an articulated clinical academic pathway for medical students, trainees, senior doctors and existing clinical academics.

2. The AMA clinical academic pathway in medicine model

2.1. The AMA has developed a model outlining clinical academic training options in support of a career in clinical academic medicine (Figure 1).

2.2. Key tenets of this model are:

(a) Medical students must have an opportunity to experience research at medical school.
(b) Clear and well-articulated pathways must be in place for trainees, senior doctors and clinical academics to pursue a clinical academic career.
(c) Strong mentors and role models must support early career clinical academics.
(d) Flexible entry and exit points must be a key feature of the pathway.
(e) Academic promotion and reward schemes must be developed.
(f) More funding for clinical academic positions and research is needed to support academic development.
(g) Support for academic medicine must be embedded in every aspect of the health system.

2.3. Lessons from international experience, such as the introduction of the Academic Foundation Programme[11] in the UK in 2010, should inform the development of clinical academic pathways in the Australian context. The UK programme is funded to run in parallel with clinical training and has reportedly been successful in stimulating an interest in research amongst trainees, with 89% of trainees describing their experience as worthwhile.[12]

2.4. Federal and state governments, health departments, universities, medical colleges and research institutes must work together to review current policies and support structures impacting on clinical academic careers, and develop strategy to cultivate and retain a well-trained and skilled clinical academic workforce.

2.5. The Federal Department of Health should fund the development of a dedicated workforce plan to assess and monitor the number of clinical academic training posts required, and build and retain a highly quality clinical academic workforce.

Figure 1. A model to encourage career clinician academics in Australia

Clinical pathway	Enablers	Academic training pathway options
Consultant	• Flexible entry and exit points • Strong mentors and role models • Academic workforce recruitment and retention initiatives, rewards and incentives • Research culture embedded in health system	• Post-fellowship higher degree • Doctorate by publication
Registrar		• Combined speciality/Doctorate program • Doctorate as a component of advanced training • Clinical fellowship/lectureship • Medical education registrar
Resident		• Combined MBBS/MD-MPH/MCR/PhD program • Academic internships
Intern		
Medical student		• Research elective • Academic rotations • Intercalated research degrees, combining a Bachelor, Honours, Masters and/or Doctorate degree with the MBBS/MD program

▲

Underpinned by

▲

A range of robust funding models and options:
- Project and program grants
- Strategic research awards
- People support awards
- Competitive scholarships/fellowships
- Financial support for sectors appointing new researchers

▲

Supportive host environment in partnership with universities and medical colleges:
- Clinical networks of excellence
- Academic health science centres

▲

Health workforce planning articulates with
clinical academic research, education, training and health care priorities

3. Exposure to research should begin in medical school

3.1. One third of Australian medical graduates are interested in becoming involved in research and over half express an interest in teaching.[13] One in five hold either an honours degree or postgraduate certificate, and a further eight per cent hold either a master degree or PhD qualification. Despite this, medical students have misconceptions about what a career in academic medicine involves, and there are system-based barriers to a career in research and education.[14,15,16] Medical students cite the absence of a clear career path and time pressures as concerns when considering a research career, and many do not want to take up research options that extend the length of their studies.[14,15,17]

3.2. Encouragement is required from within medical education and academic sectors to support medical students to undertake higher degrees, overcome perceived barriers, and convey the satisfaction that a clinical academic career can offer.

3.3. Medical schools should evaluate and adopt a range of initiatives to encourage medical students to complete research projects during their training. Examples of how this is already being achieved include:

(a) offering research electives (in basic and clinical research), non-compulsory academic rotations, mentoring and experience in research, education and administration;

(b) intercalated research and higher degrees in related fields (such as an Honours, Masters or PhD) alongside the MBBS or MD;[7]
(c) offering competitive scholarships for medical students who wish to pursue a higher research degree; and
(d) promoting publications which showcase undergraduate student research and introduce junior authors and medical students to scientific publishing.[18]

3.4. Models must be sustainable and should take into account the clinical, administrative, research and educational demand on medical school departments and senior clinicians.

4. Structured research opportunities must be in place for prevocational and vocational trainees

4.1. Interest in a clinical academic career decreases as trainees transition from prevocational to vocational training.[8] This has been attributed to several factors including a lack of structured opportunities for research, difficulty combining meaningful research with the demands of clinical training, family and financial pressures, inadequate recognition, poorer career opportunities, financial rewards and job security when compared to clinical practice.[17],[19]

4.2. Creating opportunities for trainees to undertake targeted research will help them to develop research skills, improve the quality of academic work and contribute to evidence based clinical practice and improved patient care.

4.3. Autonomy in choice of academic work, relevance to vocational training, attainment of a higher degree, protected academic time and flexible entry and exit points can also positively influence a trainee's decision to combine academic study with postgraduate and specialist training.[20,21]

4.4. Any clinical academic pathway must provide trainees with sufficient time to consolidate clinical skills and achieve clinical competencies whilst undertaking research or academic study.

4.5. The AMA supports the development of a range of prevocational and vocational training options in support of a clinical academic career. These include:
(a) specific academic rotations and academic clinical internships as part of early postgraduate training with the opportunity to continue through to vocational training;
(b) junior and senior clinical academic fellowships and lectureship positions in partnership with universities and medical colleges which allow trainees to complete vocational training requirements whilst undertaking further research, teaching or post-doctoral training;
(c) medical education registrar positions, jointly funded by the university and hospital sector, which allow trainees to maintain their clinical knowledge whilst undertaking further study in medical education theory and research methods;[22] and
(d) a standardised academic training framework across medical colleges and universities to encourage, fund and support trainees to undertake relevant, high quality research.[23]

5. Strong mentors and role models must support early career clinical academics

5.1. The ability of early researchers to access positive academic role models has an important influence on career paths and research productivity, including publication and grant success.[24] Mentoring capacity, including programs that enhance and develop the skills of mentors, must be expanded and appropriately funded to ensure early career academics are supported in their endeavours. Medicine already has a long history of mentoring within the established clinical teaching hierarchy and this model should be translated to clinical academic pathways. [25]

6. Flexible entry and exit points must be a key feature of the pathway

6.1. Providing enough flexibility to allow clinical academics to achieve both clinical and academic goals as part of an integrated career development process will help retain more clinical academics in the system.[10,26] Having a variety of entry and exit points during and post training will provide trainees and fellows with flexible options to pursue an academic career and similarly, a process to return to full time clinical practice. Having the flexibility to work part time or take a career break should also be an option.

7. Academic promotion and reward schemes must be developed

7.1. Combining clinical training with research requires significant personal and financial commitment. Incentives that maximise recruitment and retention of clinical academic staff at all levels will help support and retain a high quality, clinical academic workforce. These include improved access to flexible or part time training, higher stipends, research grants, and competitive training and career fellowships.[25] Programmes of continuous professional development that allow further training of academic staff commensurate with career requirements will also help reward clinical academic staff.[27]

7.2. Equivalence of pay between clinical academics and hospital staff specialists is urgently required to reward and retain the clinical academic workforce. This has been successfully prosecuted in a number of Australian states and territories and should be adopted at a national level. Other promising remuneration initiatives include health research fellowships which provide salary support to practicing clinicians to undertake clinical or health service research, and clinical academic fellowships that provide salary support for new positions funded jointly by health facilities and universities.[28]

8. More funding is needed to support to academic development

8.1. Dedicated clinical academic training posts and academic appointments must be available for trainees and fellows to provide career certainty and retain clinical academics in the system. This will require adequate funding. Funders of research, education and training must work together to develop a strategic and effective approach to investing in the workforce and infrastructure required to undertake basic and clinical research and teaching.

8.2. Incentives should be available to health service providers and universities willing to build clinical academic capacity and support research in areas and disciplines that are in line with health care priorities; this could take the form of time limited seeding grants that encourage new research and reward research outcomes.

9. Health services must support an academic culture

9.1. Support for clinical academic medicine must be embedded into all aspects of the health system so that Australia can gain maximum benefit from the medical expertise that exists in its hospitals, universities and in the community.

9.2. It is important that existing clinical academics are supported to provide leadership in clinical care, research and education. The AMA encoruages the development and promulgation of specific research grants and schemes for clinicians to support them to engage in research related to their professional activities and encourage the translation of research training, mentorship and research excellence into practice.

9.3. The development of further approaches that provide an appropriate environment for clinical academics, support and strengthen the link between patient care, teaching and research, and advance the next cohort of researchers and educators, is vital. The AMA supports the development of initiatives that promote excellence in health and medical research, encourage collaboration between researchers, clinicians, health services, universities, and research institutes, and cultivate research training opportunities for all health care professionals.[29,30,31] As the number of clinical academics increase, data should be published on the value of clinical academics to the healthcare system.[7]

References

[1] Windsor J, Searle J, Hanney R, Chapman A, Grigg M, Choong P et al. Building a sustainable clinical academic workforce to meet the future healthcare needs of Australia and New Zealand: report from the first summit meeting. Intern Med J 2015; 45: 965–71.
[2] National Health and Medical Research Council. Discussion paper. Developing advanced health research centres in Australia: Integrating leadership in research and research translation to improve patient care and health professional education. Canberra: NHMRC, 2010.
[3] Joyce CM, Piterman L, Wesselingh SL. The widening gap between clinical, teaching and research work. *Med J Aust* 2009; 191: 169-172.
[4] Hanney RM, Hill AG, LeMaire SA, Van Rij A, Windsor JA. Developing academic surgeons: the focus of a new course. *ANZ J Surg* 2009; 79: 872-5.
[5] Wilkinson D, Ward RL. International Campaign to Revitalise Academic Medicine (ICRAM): what does it mean for Australia? *Med J Aust* 2004; 181: 658-659.
[6] Willcox S. Creating and Sustaining the Next Generation of the Clinical Academic Workforce. A discussion paper prepared for Medical Deans Australia and New Zealand. Health Policy Solutions Pty Ltd; 2011.
[7] Windsor J, Garrod T, Talley NJ, Tebbutt C, Churchill J, Farmer E, et al. The clinical academic workforce in Australia and New Zealand: report on the second binational summit to implement a sustainable training pathway. Intern Med J. 2017;47(4):394-9.
[8] Galletly C, Chur-Hansen A, Air T, Chapman I. Academics of the future? A survey of final year medical students. *Australas Psychiatry* 2009; 17: 502–5.
[9] Health Workforce Australia. Health Workforce 2025 Doctors, Nurses and Midwives – Volume 1. Adelaide: HWA, 2012.
[10] Australian Government Department of Health and Ageing. Strategic Review of Health and Medical Research in Australia – Better Health Through Research. Canberra, 2013.
[11] The Foundation Programme. http://www.foundationprogramme.nhs.uk/pages/academic-programmes (accessed Oct 2012)
[12] Collins J. Medical Education England. Foundation for Excellence An Evaluation of the Foundation Programme. London: NHS, 2010.
[13] Gerber JP, DeLpyde, K. 2009 Commencing Medical Students Questionnaire National Data Report. MDANZ. 2010.
[14] Hyde S. Australian medical students' interest in research as a career. *Focus Health Prof Educ: Multi-Discip J* 2007; 9: 27–38.
[15] Park SJ, McGhee CN, Sherwin T. Medical students' attitudes towards research and a career in research: an Auckland, New Zealand study. *N Z Med J* 2010;123(1323):34-42.
[16] Eyre H, Stuart M. Early career medical research in Australia: looking to the future. *Intern Med J* 2012 Jul;42 (7):850-851.
[17] O'Sullivan PS, Niehaus B, Lockspeiser TM, et al. Becoming an academic doctor: perceptions of scholarly careers. *Med Educ* 2009 Apr;43(4):335-341.
[18] Australian Medical Student Journal. http://www.amsj.org/ (accessed Sep 2012).
[19] Kavallaris K, Meacham S, Hulett M, et al. Perceptions in health and medical research careers: the Australian Society for Medical Research Workforce Survey. *Med J Aust* 2008; 188: 520-524.
[20] Lyons OT et al. Impact of UK academic foundation programmes on aspirations to pursue a career in academia. *Med Educ* 2010; 44 (10): 996-1005 [abstract]
[21] Straus SE, Straus C, Tzanetos K. Career choice in academic medicine: systematic review. *J Gen Intern Med* 2006; 21 (12): 1222-1229.
[22] Foote A. Medical education registrars: new thoughts on old problems [letter]. *Med J Aust* 2007; 186 (8): 431-432.
[23] AMA 2012 Trainee Forum. 2012; Sydney, Australia.
[24] Sambunjak D, Straus SE, Marusic A. Mentoring in academic medicine: a systematic review. *JAMA* 2006; 296: 1103-115.
[25] Australian Government Department of Health and Ageing. Strategic Review of Health and Medical Research in Australia – Consultation Paper Summary. Canberra, 2012.
[26] National Health Service. Medically – and dentally – qualified academic staff: Recommendations for training the researchers and educators of the future. London: NHS, 2005.
[27] National Health and Medical Research Council. Submission to the Strategic Review of Health and Medical Research in Australia. Canberra: NHMRC, 2012.
[28] Queensland Government. Office of Health and Medical Research. http://www.health.qld.gov.au/ohmr/html/funding/open_fund_rnds.asp (accessed Aug 2012).

[29] Top medical research centre for Sydney. *Sydney Morning Herald* 2010; 28 December.
[30] National Hospitals and Health Reform Commission. A Healthier Future for all Australians Interim Report, Canberra: NHHRC, 2008.
[31] Fisk NM, Wesselingh SL, Beilby JJ et al. Academic health science centres in Australia: let's get competitive. *Med J Aust* 2011; 194: 59-60.