

# International Medical Workforce Conference

## The Australian Medical Workforce - Education and Training

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## DEVELOPING AN APPROPRIATE MEDICAL WORKFORCE

### Background

Over the centuries, medical educators have taught their trainees in three key areas.

There has been a body of knowledge which commenced with the basic science skills of anatomy, biochemistry and physiology and then moved on in clinical years to draw these subjects together with teaching around diseases and systems, through lectures and bedside teaching.

Progressively through the clinical years, skills such as insertion of intravenous lines, urinary catheters, intercostal catheters and so on would be taught at the bedside on patients needing the specific procedure as part of their management.

On top of the knowledge base and skills development, a set of professional responsibilities would be taught, the professionalism directed primarily towards patient welfare through standards of competence, honesty and integrity, and then to society at large through promotion of social justice through balancing the needs of the patient with equitable distribution of limited resources.

These later issues of professionalism were recently restated in the Annals of Internal Medicine and the Lancet by members of the medical professionalism project.

Over the years, there has been a tension between Medical Deans, who would want to continually add to the curriculum, and those who would promote a basic set of education skills around which the individual could develop.

The practice of medicine has altered out of all recognition in the second half of the last century.

Trainees were initially skilled in general medicine and general surgery, but with the rapidly increasing knowledge that followed proliferation of medical research, there followed the establishment of subspecialties within medicine and surgery, and with the further development of knowledge and procedures, specialists often devote their entire working life to management of diseases in one organ.

Again, there was potential for the training process from medical school through postgraduate training to become longer and longer as specialty training became increasingly based on more complex knowledge and skills.

In some jurisdictions, early specialisation enabled reduction in the length of the course, but patients increasingly demanded a medical workforce with a broad knowledge (“the holistic doctor”).

Whilst this would produce additional specialists for the contemporary workforce the Royal Colleges have defended their length of training programs by citing the Australian graduate as well rounded and experienced as a result of undergoing this rigorous program.

As the doctor is increasingly expected to be the medical expert, the communicator, the teacher, the trainer, the manager and the researcher (refer Can-Meds documentation), there is again the potential for training to be prolonged.

A solution to this may be found in the development of “medical educators”, doctors and educators who are skilled in modern education techniques, and who can impart the knowledge and skills in a more concentrated and time efficient manner, and adoption of “deep learning techniques”, whereby the information is provided in a setting and manner conducive to rapid learning.

### **Current arrangements**

There are currently 12 accredited medical schools in Australia, one of which only received its accreditation in July 2003. However there are another 5 prospective medical schools waiting to be accredited by the Australian Medical Council, the accrediting body. In recent years there has been a diversification of Australian medical education degrees, with some medical schools offering undergraduate degrees taking either 5 or 6 years, as well as a number of 4 year postgraduate training degrees now available. There has also been a shift towards problem-based learning, first offered at Monash University in the state of Victoria.

In 2003 there were approximately 1300 commencements at Australian medical schools, and presuming all the prospective medical schools referred to earlier are accredited, this figure will rise. Overall by 2007, Australian medical school intake is expected to be around 1860-1900, representing an increase of 50% on the intake a decade earlier. In addition, a new private medical school is scheduled to open in 2005-06 at Bond University, Queensland. Added to this will be an as yet unknown number of full fee paying Australian students, following the introduction of arrangements allowing university medical schools to offer a fee paying option over and above their number of publicly funded placements. In conjunction with a higher intake of International Medical Graduates, this increase in medical students represents a potential strain on an already stretched public hospital system.

Upon graduation, junior medical practitioners undertake a year of general intern training, otherwise known as Postgraduate Year (PGY) 1. Many junior medical officers complete a second year of general training, before moving into specialised training programs, which range from 4 years for family medicine, 5 years for anaesthetics and obstetrics and gynaecology and 6 years for internal medicine and surgery. The latter are generally 6 years comprising 3 years of general medicine/surgery and 3 years of sub-specialty medicine/surgery, but most graduates on completing those years will then

undertake an additional 1, 2 or 3 years post fellowship training overseas, usually in North America or Europe.

Thus in the Australian jurisdiction, specialists enter independent practice at between 30 and 36 years of age. This is likely to increase as more postgraduate medical degrees are offered. With the concomitant increase in the number of females studying medicine, and the clearly stated preference for a greater work/life balance by new generations of medical practitioners, medical educators will need to develop a model of education and training which satisfies both the requirements of the future workforce as well as the accrediting bodies. Half time or part time training, which accommodates the preferences of these new cohorts of medical practitioners, adds to the length of training.

Development of “skills laboratories” has enabled undergraduate and postgraduate students to develop skills in a more concentrated and more rapid time frame, at the same time improving safety for patients, although bedside application of these skills would then be required as part of the training process.

Medicine has traditionally been taught through an apprenticeship model, whereby the student or trainee follows the trainer around the wards with direct clinical teaching techniques.

There is good evidence that this approach remains highly valuable both in terms of acquisition of knowledge and also in development of the professional interaction between the doctor and the patient.

### **Curricula**

Curricula have traditionally been developed within medical schools by Deans and their lecturing staff.

These people have historically been academic and attached to major teaching hospitals and universities.

Curricula must be both general and focussed.

General curricula will be developed by cooperation among university academic staff, medical staff in practice, paramedical staff and those with knowledge of health policy and health demographics.

More focussed curricula can be produced by specialists in areas of medicine, surgery and other specialties so that the latest and most appropriate information can be disseminated.

The Royal Colleges across Australasia are currently producing curricula for training of specialists.

Whilst in many respects these will overlap across the world, there are local imperatives that will lead to the need for local modification of curricula. These

can relate from indigenous issues at one end of the spectrum to financial restraint at the other end.

In Australia we are developing a model for training to increasingly occur in settings outside the tertiary teaching hospitals.

This has become necessary partly because of the changing demographic of care managed in these institutions and partly because of the need to move training to settings where the patients are being increasingly managed. This includes outer metropolitan, regional and rural hospitals, private hospitals, private clinics and community health centres.

### **Can clinical approaches to clinical training be sustained?**

The amount of clinical skills training required to prepare medical students for practice has increased dramatically and the system in which that training is available has also changed radically from the time the apprenticeship model for medicine was introduced.

Changes have occurred that impact on clinical teaching, including:

- increased patient acuity and decreased length of stay – particularly within the ‘teaching hospital environment’ which together have decreased opportunities for learning;
- technological changes which are both rapid and continuous increasing the level of knowledge and range of skills required;
- increasing emphasis on patient safety and the quality of patient care with a reduced tolerance of clinical error;
- increasing patient expectations about the care they receive, including at times the expression of the right not to be practised upon by students;
- student expectations of high quality comprehensive training that will equip them adequately for the work environment;
- changes in clinical practices and procedures that mean much of the preliminary work up / assessment of patients having elective hospital admission, and post acute care is delivered outside of an acute setting;
- greater competition for clinical placement resources from the increased number of health professionals who require longer periods of training; and
- increases in workload which also put increasing pressure on supervisors who are required to provide training in addition to a clinical case load.

These factors suggest that the current arrangements for clinical training are not sustainable. However the way forward is not yet clear. The future probably includes training in synthetic skills laboratories or training environments, multi-disciplinary training and training outside traditional teaching hospitals, increasingly involving outer-metropolitan, rural and regional hospitals, community and ambulatory care settings. Teaching by academics and clinicians specifically trained in techniques of education, teaching and training will be essential.

## **Should learning be multi-disciplinary, cross professional and team based?**

Quality improvement processes have shown that interdisciplinary or inter-professional approaches to patient care can enhance the quality of care delivered to patients.

For health professionals, the opportunity to develop the skills required to effectively operate as part of a multi-disciplinary team does not usually present until after a student graduates and commences in the workplace.

In Australia the introduction of formal inter-professional student based training is only just beginning.

The University of Sydney's Northern Clinical School commenced a pilot program in 2002 for students enrolled in Medicine, Nursing and Allied Health degree courses to take part in shared learning experiences while on clinical placements. This program operated over 4 weeks, with students participating in organised team activities, observation of the treatment /assessment of patients by other team members and clinical case presentations.

Other examples of inter-professional programs occur in rural community settings and geriatric evaluation and assessment units.

## **What funding arrangements are in place for training in Australia?**

In Australia, medical university places are largely funded by the Australian Government, with a growing contribution from the candidates via the Higher Education Contribution Scheme (HECS).

The HECS fee for medical students is currently \$6,300 annually and this is expected to rise as much as 25% at the discretion of a university, following funding changes announced by the Australian Government for universities. HECS fees can be paid annually up front by a candidate and attract a discount. Alternatively, payment can be delayed until after graduation, which incurs an interest fee, and the fee is paid through the tax system once a graduate has completed his or her degree, is employed and reaches a threshold salary level.

For full fee paying students, the cost of a medical degree of 4 to 5 years is approximately \$33,300 to \$35,300 depending on the institution. Australia has only recently allowed entry of domestic full fee paying students into universities.

After graduation, the first two postgraduate years of generalist training are funded by individual states/territories. Doctors in their first and second postgraduate years are employed largely in the public health system, where they are required to be supervised and provided with clinical skills, lectures and knowledge based training. The cost of this training is absorbed into the

general budgets of hospitals, and in some states and territories training grants are allocated to the hospital based on the number of junior doctors employed.

Funding for specialist training varies among Colleges. Vocational trainees in general practice, for example, are employed in a training practice, the practice receives a supervision and training grant from a government controlled training organisation and the trainees salary comes from billing the national health care system (via the training practice) for services provided to patients. The cost of access to training courses for GP vocational trainees is between \$2,000 and \$10,000 depending on the nature and training of the course. This cost is borne by the trainee.

Specialist vocational trainees pay an annual fee to a specific College to participate in its training program, varying from approximately \$260 for General Practice, to \$1,124 for an advanced Physician trainee, and to \$3,300 for an advanced surgical trainee. Examination costs vary among Colleges, ranging for example from approximately \$1,263 for part one of the basic physician examination to \$4,850 for a surgical part 3 examination. With the increasing importance of training online, some Colleges also level a fee for trainee access to this service and trainees meet course costs.

Vocational trainees are primarily employed in the public health system, although increasingly there is a move to look at a broader range of training environments. The salaries and on costs are all met from hospital budgets. Supervisors are either specialist employed or contracted staff, who as part of their terms of employment are required to provide supervision and training for vocational trainees. However it should be noted that the specialist workforce provides a large component of teaching in the specialist training environment on a pro bono basis. Previous attempts to identify the actual cost of the training provided have not been successful.

### **Conclusion:**

There is a range of players in Australia involved with the education and training of the medical workforce. However there is little in the way of coordinating mechanisms to ensure that the needs of the health system are met, and that Australia continues to possess a highly skilled, competent and well-trained medical workforce. There are major challenges to face, such as the alignment of training with service delivery arrangements, as well as the changing composition and attitudes of the future medical workforce.

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Royal Australian College Physicians Website:  
<http://www.racp.edu.au/public/index.htm>