

Changes to the University of Sydney medical curriculum

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In 1997, the University of Sydney replaced its undergraduate medical course with a new 4-year graduate medical program. An aim of the new program was to equip graduates with the skills for lifelong learning, with much of the teaching occurring in small-group tutorials where a problem-based approach was taken. Emphasis was on group learning and the development of good communication skills, as well as mastery of medical concepts and information. In 2006, panel interviews, which had been used as part of the selection process, were replaced with a series of short interviews assessing honesty, respect for diversity, decision-making ability, listening abilities and personal insight.

As a first degree in any discipline was one of the entry criteria, examinations were not held in the first year so as not to disadvantage students from a non-scientific background. To further foster collegiality rather than competition, examination results were not graded. Four basic themes permeated the course: basic and clinical sciences; patient–doctor; community and doctor; and personal and professional development.

The course was well received, with its course satisfaction ranking by its graduates being among the highest in Australia.¹

In 2005, the Australian Medical Council (AMC) reaccredited the course, giving it the maximum 10-year accreditation. However, the AMC did suggest some areas for further development, and this was part of the impetus to undertake a comprehensive review of the course.

Review process

The review commenced in July 2006 (Box 1), and initially involved learning about similar exercises in curriculum review; visiting other graduate medical schools; reviewing relevant national and international literature from new and established medical schools; listening to the views of academics, teachers and students; and then compiling draft recommendations, which were presented to the Faculty of Medicine in March 2007.

Forty working parties were then established to determine how best to implement the recommendations. Over 500 teachers, academics and students volunteered to take part in these working parties. Each working party was held to a tight 3-month timeline, including evening meetings to increase participation. The deliberations of each working party were circulated widely and ratified by the Faculty in July 2007.

The complete report of the review, including over 700 recommendations grouped under 42 headings, was published in October 2007.²

Key recommendations

Key recommendations are outlined below, and changes that have been made or are planned are summarised in Box 2.

Governance: The governance structure was simplified. The number of committees was reduced, with the roles of policy and operations separated. Six academics, some recruited from other universities, have been appointed to positions with dedicated time (up to 60%) to implement, administer and evaluate the course. These positions include: program chair; a coordinator for each

ABSTRACT

- In 1997, the University of Sydney replaced its undergraduate medical course with a new 4-year graduate medical program.
- The course was reaccredited by the Australian Medical Council (AMC) in 2005.
- Suggestions for further development by the AMC led to a comprehensive review of the course, commencing in July 2006.
- This article describes the review process and outlines key recommendations that came out of the review that have been or are being implemented.

MJA 2008; 188: 461–463

1 Strategies included in the review of the University of Sydney medical curriculum, July 2006 to July 2007

- Website information and an open call for submissions from the community, the Faculty of Medicine, students and alumni.
- Visits to clinical schools, including open forums for students, administrative staff, academics, clinical teachers.
- Focus groups:
 - Academics on campus;
 - Indigenous students;
 - International students;
 - Students in Years 3 and 4 of each clinical school.
- Face-to-face interviews with over 270 students, academics, teachers, past graduates.
- Submissions, electronic and written, by over 200 students, staff, academics, tutors, and alumni.
- Special input sought from a wide range of professional bodies and individuals.
- Four reference groups (each met on four occasions):
 - Internal academic leaders;
 - Internal future leaders;
 - External educators and communicators;
 - External stakeholders.
- Examination of current curricula from other Australian and some overseas graduate medical schools, and an extensive literature review. ◆

stage of the course (Year 1, Year 2, and the 2 clinical years); a head of assessment; and a head of evaluation. Together with an executive officer, these new appointees form a new Office of Medical Education; they were all in place by August 2007.

A new foundation block: The first 9 weeks of the course have been completely revised, with emphasis on providing students with core basic science principles. The aim of the foundation block is to provide a scaffold for building subsequent knowledge and to introduce basic concepts. This need was particularly recognised for anatomy, physiology, biochemistry, pharmacology, and infectious diseases and immunology. This block commenced in 2008.

A core curriculum: Many submissions from students and teachers called for a more clearly defined curriculum with clear learning

2 Changes made or planned in accordance with key recommendations

- The governance structure has been simplified.
- The first 9-week foundation block has been completely revised.
- A core curriculum with clear learning outcomes will be developed.
- Basic science teaching has been increased, with anatomy teaching hours doubled.
- Special provision has been made to assist students from non-science backgrounds.
- An innovative approach to teaching ethics and professionalism will occur over the 4 years of the graduate medical program.
- There will be increased emphasis on role modelling and mentoring.
- The number of written and clinical assessments will be significantly increased.
- Grading will be introduced in the final 2 years of the course.
- Requirements for an honours degree have been changed to a combination of a high-standard honours research project and a high academic standard throughout the course.
- Research opportunities will be increased with the introduction of an optional Master of Philosophy (MPhil) and with more emphasis on the intercalated PhD/MBBS program.
- There will be increased use of information technology for teaching and assessment.
- The curriculum will include the following new or enhanced areas: leadership; community service; management skills and the responsible use of health resources; Indigenous health; international health; complementary and alternative medicine; medical humanities; genetic medicine; interprofessional learning; refugee health; spirituality; and students as teachers.
- A part-time option will be available in the final 2 years.
- The final 2 years of the course have been integrated, with increased emphasis on critical care and surgery. ♦

outcomes, particularly in the final 2 years. This will be the responsibility of the new stage coordinators in cooperation with discipline heads. This core curriculum will be available to students and staff in a single, clear document on the Internet, as well as in hard copy. The curriculum is scheduled to be posted on the Internet in 2009.

More basic science teaching: Basic science teaching has been increased and will continue throughout the clinical component of the degree. Many submissions requested more clinically relevant anatomy teaching, more access to anatomical specimens, and more assessment. As a result, anatomy teaching hours have been doubled, opportunities for dissection will be offered, and a joint senior academic appointment will be made between the disciplines of anatomy and surgery to integrate anatomy teaching over the 4 years.

Assistance for students from non-science backgrounds: Although the Graduate Australian Medical School Admissions Test is currently used as a way of selecting students for their ability to complete a medical course, some of our students from non-science backgrounds are not initially comfortable with the concepts that underpin the basic medical sciences. As we encourage applications from a wide range of disciplines and wish to maintain this diversity, students from non-science backgrounds will be provided with reading lists before the commencement of the course, web-

based resources, and specialised tutorial sessions early in their first year.

An innovative approach to ethics and professionalism: The practice of medicine is grounded on a series of questions. These questions are philosophical in that they relate to the understanding of health, disease and illness; to the goals, construction and delivery of health care; and to the roles and responsibilities of carers. The types of questions that ground medicine provide an intellectual foundation for the personal and professional development (PPD) theme, which will now have increased emphasis on ethics and professionalism. PPD and ethics teaching will occur throughout the course, including a 2-day intensive “immersion” each year.

Increased emphasis on role modelling and mentoring: When graduates were asked to describe experiences as medical students that influenced the development of their professional values, they identified the positive role models of faculty members and clinical teachers. They appreciated those who showed students how to interact with their patients with empathy, who demonstrated effective coping mechanisms after poor clinical outcomes, and who could balance work and lifestyle. Staff mentors will be allocated for all students during the first 2 years of the course. Students in the final years of the course will act as peer “advisors” to more junior students, and all first-year tutors will be carefully chosen for their skills as gifted teachers and as good role models.

More written and clinical assessments: Assessment is a primary means of feedback to students as well as measuring learning. A head of assessment has been appointed to increase and monitor the amount of assessment throughout the course. Assessment will be combined with constructive feedback.

Grading will be introduced in the final 2 years of the course: Although some submissions expressed concern that grading might impair collegiality, no definite evidence was found to support this concern. The overwhelming consensus from students and many teachers was in support of grading with useful feedback.

Honours requirements will be more stringent: Honours will now require both a high academic standard throughout the course and a carefully prepared, well supervised and critically assessed honours project.

Research opportunities will be increased: Increased emphasis will be placed on encouraging suitable students to undertake an intercalated PhD/MBBS program. A new Master of Philosophy (MPhil) will be introduced, allowing students with good honours projects to upgrade them to an MPhil by undertaking additional course work.

Increased use of information technology for teaching and assessment: Information technology provides an effective mode of communication and allows delivery of the curriculum to metropolitan and rural teaching sites by means of email, Internet, and videoconference. There will be increased use of web-based lectures and much greater use of online assessment, with students being given their results in a way that shows their performance in individual areas in relation to that of their peers.

There will be a range of new or enhanced areas: These include: leadership; community service; management skills and the responsible use of health resources; Indigenous health; international health; complementary and alternative medicine; medical humanities; genetic medicine; interprofessional learning; refugee health;

how people's spiritual beliefs may influence their illnesses; and students as teachers.

A part-time option: The integrated structure of the course in the first 2 years does not allow for a part-time option. However, as the final 2 years have a modular structure, selected students will have a part-time option, allowing completion over 3 or 4 years.

The third and fourth years: These predominantly clinical years will have increased emphasis on critical care and surgery. Structured teaching will occur on 1 day, leaving the other 4 days of the week for clinical activities and bedside learning. Clinical reasoning sessions will replace problem-based learning in these final 2 years.

Early outcomes and ongoing review

This review will be carefully evaluated as part of a recommended ongoing review of the curriculum. We believe that this review, based on a comprehensive literature review, and input from numerous oral and written submissions as well as focus groups, will invigorate the University of Sydney medical program and produce graduates who will be well placed to develop into leaders in their profession. A valuable outcome of this review has been a re-engagement of the Faculty of Medicine. This has come about as

a result of the enthusiasm of Faculty members to be involved in the review, along with the improved communication across the Faculty and the resultant commitment to teaching. This can only benefit our students.

Competing interests

None identified.

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(Received 24 Jan 2008, accepted 18 Feb 2008)

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