Revitalising medical education: the School of Medicine at the Pontificia Universidad Católica de Chile

Ignacio Sánchez, Arnoldo Riquelme, Rodrigo Moreno, Beltrán Mena, Jorge Dagnino and Gonzalo Grebe, School of Medicine, Pontificia Universidad Católica de Chile (UC), Chile

Higher education in Chile: last two decades

Higher education in Chile experienced significant diversification, after a significant growth in the number of private universities, which increased the heterogeneous nature of educational quality.¹ This diversification involved educational reform and a new accreditation system for both traditional and new universities, and the number of students increased dramatically. Until the late 1970s, only a few ‘traditional’ universities in Chile had provided higher education. However, by 1981, as a result of the establishment of private educational institutions, there were more than 60 universities. Currently there are 25 traditional and ‘derived’ universities (that is, those originating from traditional universities), 36 new private universities and 45 professional institutes, totalling over 100 higher education institutions.² Although many claim to be teaching universities, only 10 per cent of them can be identified as complex universities with a relevant role in both research and the generation of new knowledge.

This explosive growth brought with it some challenges, however: the need for institutional accreditation and accountability, and increasing difficulties for students to finance their higher education. In addition, the Ministry of Education developed a new accreditation system for universities and

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Much effort was put into self-instruction through the use of multimedia tools established the Comité Nacional de Acreditación de Pregrado or CNAP (National Committee for Undergraduate Program Accreditation).

**SCHOOLS OF MEDICINE**

There was an equivalent increase in the number of medical schools, from nine in 1986 (three in Santiago) to 23 in 2006 (10 in Santiago). Enrolment doubled to 1700 students, half registered in the new private universities. In Chile there is one medical school for every 675000 inhabitants, compared with one for 2.4 million population in the USA and one for three million in Canada. This increase, together with the arrival of doctors from neighbouring countries, will undoubtedly produce a surplus of doctors and influence postgraduate education.

Pursuing the quality assurance of medical education, the Asociación de Facultades de Medicina de Chile or ASOFAMECh (Association of Chilean Faculties of Medicine) was created in 1979. In 1984, the Corporación Nacional Autónoma de Certificación de Especialidades Médicas or CONACEM (National Corporation to Assess and Certify Medical Specialties) began working and developed the accreditation process for postgraduate training. Currently, only 11 of the 23 schools of medicine are associated with ASOFAMECh.

**MEDICAL SCHOOL OF UC**

The school at UC provides 110 places for first year enrolment, 90 of which are filled through the common admissions process of all Chilean universities, with 15 places assigned for students from the BSc programme and five for the special admissions programme. The December 2005 admissions process showed that 90 of the 138 best scored applicants to medical schools in the country came to UC’s school, 35 of whom obtained the highest national scores in the standardised test for university admissions.

Our mission is to nurture doctors of excellence, who see human beings in their dignity as well as their social, psychological and biological dimensions. Graduates must have a high-quality technical and scientific education and a solid moral foundation based on religious principles to guide their ethical behaviour. With this in mind and considering the need of our society for a new kind of health professional, we started work on a new curriculum, based on the educational aspects highlighted by the World Federation of Medical Education (WFME) in the 1988 Edinburgh declaration, and the desirable characteristics of ‘tomorrow’s doctor’ identified by the Association of American Medical Colleges (AAMC) and the General Medical Council (GMC) in the UK.

**NEW CONCEPT OF MEDICAL SCHOOL**

This new challenge required a flexible curriculum that could allow for a different professional profile, so we made important changes to the curriculum. One of the main modifications was in the definition of the resulting professional: from ‘a general physician capable of resolving most medical problems of rural and urban populations’ to ‘a physician with solid general training and qualified for a subsequent post-

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**Figure 1. Undergraduate curriculum.** *Credits in parentheses.*
Other changes included the creation of a family medicine Internship, a 32-week elective internship, reduction in curriculum contents, vertical and horizontal integration, modernisation of teaching methods based in tutorial (small group) sessions, more ambulatory care exposure, incorporation of IT techniques and application of problem-oriented teaching—all focused on more active student participation in the learning process. This new curriculum included most of the educational strategies highlighted in the SPICES model, that is, student-centred, integrated courses, and community-based electives, with a core and a systematic approach (Box 1).

We also evaluated the impact that the curriculum reform had on the academic performance of undergraduate students and found a significant reduction in delay and withdrawal from the programme, and an improvement in grades. The teaching and learning activities in the new curriculum included multiple teaching methods: large group sessions, interactive sessions, small group seminars, tutorial clinical rotations in ambulatory and hospital settings, and practical laboratory work. Much effort was put into self-instruction through the use of multimedia tools created by our teachers, most of them available on the UC Medical School’s website (http://escuela.med.puc.cl). Contact with patients was emphasised and it now represents more than 50 per cent of all the programmed activities. In this type of clinical teaching, there is one tutor for every five or six students in the clinical rotations of phases 1 and 2, and a supervisor for every two to four interns during the internship (phase 3). We also focused our efforts in applying creative teaching methods, including the use of simulated and trained patients, and increased the teaching of ambulatory medicine. In 2000 we introduced the Objective Structured Clinical Examination (OSCE) for assessment, and this is now widely used for assessing clinical skills throughout the course.

Apart from curricular changes made by UC’s Medical School, UC also introduced the new Plan de Formación General de la UC (General Teaching Plan) for all careers, which made it mandatory for all students to take eight elective courses from disciplines other than those for their career choice, with the purpose of expanding their general knowledge. This was introduced in 2003.

Box 1. Recent changes in the curriculum

Enhancement of horizontal and vertical content integration
Selection of most relevant contents for undergraduate education
Increase in the use of active teaching methods
Improvement of and increase in ambulatory clinical teaching
Improvement of communication and scholarships
Creation of a large number of optional courses and electives in the clerkship

Clinical practice is carried out in ambulatory and hospital settings

Figure 2. Main building of the UC School of Medicine.
TEACHING FACILITIES

In 2004, the Medical School inaugurated a new undergraduate building, allowing for the development of this new and more participative teaching style. It houses the Biomedical Library, the Medical Education Centre, the Undergraduate Division, the Department of Anatomy—with a modern teaching ward—the Medical School Student Union (Centro de Estudiantes de Medicina Universidad Católica—CEMUC) and the chaplaincy (pastoral office). Clinical practice is carried out in ambulatory and hospital settings in which students are prepared for the diverse scenarios that medical school graduates must face in Chile.

The Clinical Hospital of the UC holds high-tech facilities that allow solution of complex patient problems. The public hospital, Dr Sótero del Río, representative of the National Health System in Chile, has all the clinical specialties and a large number of patients. The Internal Medicine Service of the Hospital de Urgencia Asistencia Pública allows students to handle patients who need emergency hospitalisation and to manage the most prevalent diseases related to emergency medicine. These two public hospitals have highly qualified teachers. Ambulatory services at the San Joaquin Campus offer a wide range of teaching opportunities with ambulatory patients. It houses a special unit with mirrored rooms for unidirectional vision and video, which help teaching the basics of clinical medicine and its evaluation. Three ambulatory public centres, owned by the university, allow the learning of medicine in a modern family medicine setting.

The changes introduced and improvements in facilities have brought about the desired results. In 2003, the Ministry of Education, through the CNAP, accredited our medical school for a 7-year period. Since 2003, UC’s Medical School graduates have obtained the highest average scores in the National Medical Examination (EMN), compared with other Chilean schools. Furthermore, in the EMN administered in 2006, seven of the best 10 scores were obtained by UC graduates.

CONCLUSIONS

The Medical School of the UC took the challenge of leading the generation of knowledge, being creative and constantly striving to deliver the best possible service to the students and the country. Its teachers are called on to teach not only science but also conscience, so that its students may be agents for change wherever they choose to work. The mission of the school is the desire to educate not only the best-prepared doctors, but also those who are to serve the country with a testimony of faith. These aspects, together with undertaking the challenge as a mission from the church, have undoubtedly helped it to be one of the most successful projects that both teachers and students have and may ever develop.
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CONTRIBUTORS TO THIS ISSUE

Mary Armitage, Endocrinologist, Head of Wessex Postgraduate School of Medicine, Clinical Advisor Modernising Medical Careers, Department of Health, UK

Dr Peter Barton, General Practitioner and Director of Clinical and Communication Skills, University of Glasgow, UK

Dr Fernando Bello, Senior Lecturer in Surgical Graphics and Computing, Imperial College London, UK

Elizabeth Cottrell, Foundation Year 1 Student, University Hospital of North Staffordshire NHS Trust, UK

Rebecca Chubb, Foundation Year 1 Student, University Hospital of North Staffordshire NHS Trust, UK

Jorge Dagnino, Vice Dean of the Faculty of Medicine of the Pontificia Universidad Católica de Chile

Professor the Lord Darzi of Denham KBE. Parliamentary Under Secretary of State - Department of Health, UK

Kevin Eva, Associate Professor, Program for Educational Research and Development, McMaster University, Hamilton, Ontario, Canada

Deborah Gill, Clinical Senior Lecturer in Medical Education, Royal Free and University College Medical School, University College London, UK

Gonzalo Grebe, Dean of the Faculty of Medicine of the Pontificia Universidad Católica de Chile

Richard Hays, Chair of Medical Education and Head of School, School of Medicine, Keele University, Staffordshire, UK

Andrew Kingsnorth is a Consultant Surgeon at Plymouth Hospitals NHS Trust and an Honorary Professor at the Peninsula College of Medicine and Dentistry, Plymouth, UK

Roger Kneebone, Senior Lecturer in Surgical Education at Imperial College London, UK

Beltrán Mena, Associate Professor and Director of the Editorial Office at the Faculty of Medicine of the Pontificia Universidad Católica de Chile

John McGowan, Resuscitation Officer, Glasgow Southern General Hospital, UK

Rodrigo Moreno, Director of the Undergraduate Direction of the School of Medicine of the Pontificia Universidad Católica de Chile

Debra Nestel, Professor of Medical Education, Gippsland Medical School, Monash University, Australia

Francis Oppong is a Consultant Colorectal Surgeon at Plymouth Hospitals NHS Trust, UK

Carol Parker, Lecturer in Medical Education, Royal Free and University College Medical School, University College London, UK

Jim Parle is a part-time GP and a Professor of Primary Care at Birmingham Medical School, UK

Rona Paty, Consultant Anaesthetist and Director of the Clinical Skills Centre at Forressterhill, Aberdeen, UK

Lisa Pritchard is a journalist based in London, UK

Taneem H Raza, Associate Postgraduate Dean (Wessex) and Director of Medical Education Royal Bournemouth Hospital, UK

Jane Richardson, Senior Lecturer in Medical Education, Royal Free and University College Medical School, University College London, UK

Arnoldo Riquleme, Master in Medical Education and Assistant Professor at the Pontificia Universidad Católica de Chile

Nick Ross, Medical School Education Unit, University of Birmingham School of Medicine, UK

Igancio Sánchez, Associate Professor and Director of the School of Medicine of the Pontificia Universidad Católica de Chile

David Sanders is an Academic Registrar in General Surgery at Plymouth Hospitals NHS Trust, UK

John Spencer, Professor in Primary Care and Medical Education at the University of Newcastle, UK

Martin Talbot is an Honorary Clinical Senior Lecturer at the University of Sheffield, UK