

## The renewal of medical education in Iran: progress and challenge

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Medical education in Iran stands to benefit from twenty years of well documented developments: new medical schools, a single Ministry of Health and Medical Education, strong primary care in rural areas, a commitment to evidence based medicine, a priority of social accountability, mandated continuing medical education, and funding from Educational Development Units and research in medical education.

Some years back, concerns about rigidity of the national curriculum, both in content and implementation initiated a national process of consultation and renewal, supported by Annual Medical Congresses.

Last year at the 11<sup>th</sup> Congress the Minister spelled out priorities for renewal: to strengthen the relation between research in medical science and medical education; to develop capacity for research in medical education; to integrate theory and practice; to develop new assessment methods; to link health service development with medical education; to develop an ethical system for professionalism, and to revitalize training and career development for general practice. She urged universities to put to work the creative ability of students, well demonstrated by the annual student organized Student's International Conference on Biomedical and Interdisciplinary Research (SICOB AIR).

Renewal evaluation is guided by the Auxiliary Commission for the Council for Undergraduate Medical Education reporting to the Deputy Minister for Medical Health Sciences Education. This is not of itself an accreditation process but the lessons from national accreditation processes provide guidance that will be useful. The best evaluation of medical education would be of the outcome as demonstrated by the competence of graduates and their continuing career progress. But in the short term the focus will be on curriculum and the process of teaching and learning. In Australia the process starts with each institution doing its own internal review and making its own comments and recommendations. These are then the focus of further enquiry by a visiting team. Teams are widely inclusive and the review is collegiate and open, developing a clear understanding of issues relevant to each school.

Curriculum states the plan of action. But implementation and the students' experience of learning are the key to evaluation: is there a match between theory and practice? Open discussion and consultation among all involved, shared with the entire medical education community will facilitate wide involvement and identify issues for further study and research. This latter should be the working agenda for academics now developing their skills in educational research.

The comments that follow are my own perception based on initial exploration during the past three years through workshops in and in discussions with Ministry and with staff and students of schools at various stages of renewal, specifically at Medical Sciences Universities of Shahid Beheshti, Tehran, Tabriz, Mashhad and Isfahan. These were generally the older and more metropolitan universities, and experience elsewhere may be different.

It is always possible to improve teaching and learning without substantive structural change to a curriculum. But to respond to the needs of modern health care structural change is also needed. This requires commitment and a change of orientation by staff and by students; without that all renewal will fail.

#### **What are the main aims of renewal?**

These include focusing of sciences to direct relevance to medicine; integration by agreement between the sciences and between sciences and clinical medicine; learning by discovery, especially learning by solving problems, learning in small groups, assessment addressing the wide range of intellectual and practical competence; critical reasoning, clinical competence and safety in hospital and community settings, skills of communication.

Plans and documents are well founded in educational principles and focus on student learning. But the challenge is in implementation, in converting theory into effective practice. Students welcome the aim of their renewed curriculum but are concerned when teachers have not adapted their teaching to match.

#### **What are the likely main issues in implementation?**

*Basic sciences and integration with clinical practice:* I put this first because it

presents a challenge to both scientists and clinicians. Students point out excellent examples of good interactive teaching with clinical relevance, but their main message is ‘that teaching is largely didactic and learning largely passive and the content taught in basic and pathological sciences is so dense and so detailed that learning becomes a feat of memory, holding the information just long enough to dump into the examination’. Repetition by different disciplines creates redundancy and its relevance to medicine is obscure.

Sciences must provide the firm basis of clinical medicine. The newer expanding sciences of molecular biology and genetics are already entrained in discussions of risk factors and mechanisms of disease, drug action and of pathology; so these must be incorporated. But not in the scope and detail of an honored course in cell biology. Even 100 years ago Abraham Flexner, while establishing the case for a research based learning of science made the point even when that students were expected to master far too much detail. There should be more emphasis on the processes of critical reasoning. The student should be encouraged to explore and discover:

*“From the standpoint of the young student...the old, known and understood are all alike to him: and the teacher seeks to carry him through the process of the thinker and not of the parrot”.*

In workshops we explored integration in practical terms, drawing on experience and examples from other settings. We used simple clinical cases to encourage students not to go beyond that and to develop their mastery of science so that they could explain and predict how the body works and the effect of its failing. This is the beginning of clinical reason-

ing. We chose simple clinical problems: pneumothorax, hemorrhage, dehydration, hypoglycemia, a myocardial infarction. The basic mechanisms were the target, not the advanced clinical management that comes later. And in the later period, the clinical clerkship, the application of the sciences must be reaffirmed with the heightened expectation of applying them to diagnosis and management in the real world.

This can only be done by scientists and clinicians consulting together, the clinicians providing case outlines and sometimes real patients, the scientist editing the scope of study to lay a foundation for clinical use. Curriculum planning groups have joint membership which provides for constructive discussion. Such consultation should resolve any difficulties but in practical terms seems to have been a sticking point.

It is understandable that scientists will be concerned if the integrity of a specific discipline be corroded, maybe diminished and slip out of their control. In no circumstance should one take over from the other. They each remain responsible for their own field, but rely each on the other through consultation.

### **Assessment**

Assessment by examination determines every step of progress, from high school to specialty training. The emphasis at each step is on memory and recall

The new proposals are for students to develop learning skills and intellectual and clinical competence appropriate to progressive career development. But curriculum renewal will founder if assessment sends a completely different message and focus on knowledge alone: "Assessment drives Learning". Some progress has been made in introducing into national examinations assessments geared to

higher levels of mastery and these are to be encouraged.

### **Clinical supervision**

Students recount excellent examples of good practice of what we might call 'student centered learning' supported by close supervision, graded responsibility, feedback and interaction on clinical issues and the application of basic sciences. But they also acknowledge that in busy clinical settings and with conflicting priorities for senior clinicians and advanced trainees students can be pushed to the margin. Students must, of course, take responsibility for being present, following patients, studying the clinical issues they encounter and documenting their progress. Surprisingly, as interns, still students of the university, just when they stand to gain most by taking direct responsibility, supervision and feedback were for many fragmented with limited continuity. As one group put it, 'internship' had turned into a 'servantship'.

### **Readiness for General and Community Practice:**

There is concern, especially among students, that graduates are poorly prepared for general practice which they first experience in two years of national service. As a career it is generally held in low esteem without a clear career framework or continuing education. Experience in general practice and community health should be high on the agenda of any response to national need. Medical education should be socially accountable. Last year this was formally espoused by the Ministry and in workshops and seminars we exchanged experience and perspectives.

Some renewal proposals address this with strong community experience. Much will depend on graded responsi-

bility, careful supervision and feedback and assessment that addresses the wide competencies necessary for. But health workers on the ground are already very busy and it will be a major challenge for providing sufficient supervisory staff and ensuring assessment responds to this previously neglected field.

### **Conclusion**

This quick review does not do justice to the scope of what is being planned and it only reflects exposure to the larger and more urban universities. The ideas and principles of curriculum have been well thought through, well founded in good educational principles, welcomed by students and formally approved by Faculty staff. But they will not follow through

just by approving them. The key determinants of success or the means of defeat will be in implementation and in the impact of an unreformed national assessment system. Everyone understands this; academic staff, planners and curriculum designers have skill and commitment and a good grasp of educational principles and many are familiar with developments in other countries; but the change for many will be a challenge when it comes to the reality of implementation. Open minded consultation and willingness to co-operate and relaxation on the issue of control will go a long way.

And finally, the constructive involvement of students. As the Minister said, "*put their creative ability to work*".