
Medical education in South Africa: diagnosis and treatment

This paper, by Mr J Lazarus, identifies five major problems of the graduate delivered by the South African medical schools and suggests possible ways of solving them. It must be emphasised that the ideas presented in this paper are not those of the South African Association for Medical Education; they are the author's personal views, based on a series of interviews with more than thirty medical educators in South Africa, the administration of numerous personal research projects in medical education, and ten years of experience as a facilitator of educational development within the seven South African medical schools.

Diagnosis of the problem

1 Ignoring the health needs of the majority of South Africans

The graduate emerging from our medical schools in South Africa suffers from five major problems. The first and most complex problem is that the medical graduate emerging from our medical schools is not suited to deal with the health needs of the majority of South Africans. The emphasis is on high technology hospital medicine. This bias is at least partly responsible for the maldistribution of medical practitioners within South Africa, resulting in a saturation of health care amongst advantaged urban populations and consequent poor health care for disadvantaged rural populations. The South African medical schools traditionally pattern themselves after the educational standards of Western Europe resulting, in part, in the relatively high emigration rate amongst young medical graduates. Ironically, graduates from the two most liberal white medical schools in our country, namely the University of Cape Town and Wits, suffer most severely from this symptom.

2 Specialist education

The second major problem is that the medical graduate is specialist rather than generalist in orientation. The educational process in our medical schools is overwhelmingly biased towards high technology specialist medicine.

3 Academic criteria

A third problem is the imbalance between academic and humanistic medicine. Despite overwhelming evidence that humanistic factors contribute substantially to patient recovery (1,2), the entire educational process, from student to staff selection and promotion, rests almost exclusively on academic criteria. While the teaching and learning environment may at times encourage humanistic factors circumstantially, these are seldom articulated and integrated into intentional learning experiences.

4 Narrowly defined curricula

A further problem is that the graduates are well trained but generally poorly educated. In the first instance, medical students do not benefit from a broader university education. They are subjected to a compact, intensive curriculum with little or no time to explore academic interest beyond the narrow confines of the traditional subject based curriculum. This is compounded by the fact that the teaching and learning environment of most medical school campuses within South Africa are detached from the main campuses of the universities. Students are therefore limited, not only in their academic subject choice, but in their student-peer relations.

In the second instance, the didactic teaching and rote learning methods encouraged by a subject based curriculum as well as current methods of student assessment are hardly conducive to integrative learning experiences, critical thinking or analytical problem-solving abilities.

5 Emphasis on curative medicine

The fifth and final problem is that medical education is geared towards curative rather than preventative medicine despite the fact that many illnesses in South Africa are preventable. Medical teachers are mainly curative specialists, teaching curative medicine in a curative environment and assessing their students on the curative components of medical care.

The unfortunate result of these problems is that medical graduates are inappropriately trained to meet the health care needs of our population. This situation should not be tolerated for much longer by the people of our country.

Possible solutions

How can the gap between the medical graduate, trained in this way and the health needs of the majority of our population be bridged? I would like to suggest two distinct but interrelated solutions. They are (i) the political, economic and social development of the disadvantaged communities in South Africa and (ii) affirmative action from the South African medical schools to address the training medical students to meet the health care needs of the South African population.

At present, six elements which together determine the nature of the graduate can be identified. They are:

- 1 The curriculum content and structure.
- 2 The assessment of students.
- 3 The method of teaching and learning.
- 4 The environment in which teaching and learning occurs.
- 5 The selection and development of lecturers.
- 6 The selection of students.

While each one of these factors constitutes a separate element of the educational process, their interdependence must be emphasised. It would be senseless, for example, to select students with a concern for rural health needs if this concern is drummed out by the remaining elements in the educational process. It would be equally senseless to change the content and structure of the curriculum, for example, from specialist subject-based to an integrated curriculum, without changing our methods of assessment.

A real example is provided by one of the medical schools in South Africa intending to train more students from disadvantaged educational backgrounds. Selection criteria were adjusted without adjusting the curriculum or methods of

Curriculum content and structure

Assessment of students

Methods of teaching and learning

Environment in which teaching and learning occurs

Lecturer or staff selection and development

Student selection

teaching and assessment. The result was that the majority of students admitted by special criteria failed miserably in their first and second years. There are many other examples of medical schools internationally which have changed single elements within their educational process without adjusting the remaining elements accordingly. This has often led to the rejection of the innovation implemented within that single element. If a medical school is going to change anything, it must change everything accordingly if that change is to be meaningful and successful.

Anatomy of the educational process	Diagnosis and treatment				
	hospital vs community	specialist vs generalist	academic vs humanist	training vs education	curative vs preventive
Curriculum	differentiation multidiscipl relevant content	differentiation multidiscipl core content	differentiation multidiscipl biopsychosocial	content vs process broader education	differentiation multidiscipl
Assessment	differentiation	differentiation integration patient-based	differentiation integration patient-based/bio psychosocial	content vs process integration problem-based	differentiation
Methods	acad. support independent learning	integration patient-based	integration patient-based	integration independent learning problem-based	
Environment	decentralisation rural component	decentralisation community component	decentralisation		decentralisation
Lecturers	rural practitioners accountable staff development change agent	gen. practitioners accountable	accountability staff development	educators staff development	rural practitioner general practitioner accountability
Student Selection	health personnel needs differentiation bachelors degree	health personnel needs differentiation bachelors degree	health personnel needs differentiation bachelors degree	bachelors degree	health personnel needs differentiation bachelors degree

Proposals for change

Four fundamental proposals of a framework, aimed at addressing the six elements of the medical education process described above, are now discussed.

1 Student selection

The first proposal concerns the relationship between student selection and health personnel needs. It is suggested that those applicants most likely to meet the health personnel needs of the country be selected. While an appropriate educational process may contribute substantially towards meeting these needs, research suggests that its success is largely dependent on the kinds of students selected (3,4). Selecting students for this purpose is an attempt to influence, by means of the selection process, where, what and how graduates will practise (3,5,6). To achieve this, a medical school must identify and define:

- the community it intends to train doctors for;
- the health care needs of that community;
- the number and kinds of doctors required to fulfill those needs;
- the selection prerequisites most likely to identify the students who appear to have the greatest potential for becoming the kinds of doctors required (3).

Without these guidelines, the selection of students is likely to be arbitrary and patterned after a stereotyped image of the ideal student, which is essentially a projection of the roles and values of those responsible for selection (7). The inevitable result is a graduate who is mainly relevant to an elite community defined by the geography and ethnicity of the medical school milieu (3,8).

2 A differentiated educational process

The second proposal, flowing from the first, is that a differentiated graduate may be more appropriate to South Africa's health personnel needs than the traditional notion of a basic undifferentiated graduate. The notion of a differentiated educational process is not new (9) and has been recognised as potentially suitable to medicine (4). Today there are more than 10 differentiated or so-called dual (twin) track medical schools internationally. In response to the needs of local communities, these schools have introduced a community orientated stream alongside their traditional stream. Some schools, such as Harvard University, have introduced several streams (10, 11). These include a community stream, a traditional stream and a high technology research stream. If a differentiated educational system is considered appropriate to the health personnel needs of highly developed countries, is it not even more appropriate to South Africa with its diversity of needs?

It has been suggested (12) that differentiation, in the South African context, should not occur within a given medical school, but rather between the different medical schools. This notion of differentiation may be appropriate, provided that

every effort is made to ensure that the sum of graduates emerging from our medical schools is representative of our health personnel needs. It would not suffice if six schools generated specialists and only one produced community orientated graduates. All our medical schools must be accountable to the South African community for the kinds of graduates they produce.

3 Decentralisation of the teaching and learning environment

My third proposal concerns the need to decentralize the environment in which teaching and learning occurs. If the student's learning is limited to high technology teaching hospitals delivering curative medicine, it is inevitable that the graduate will feel most comfortable and may even be limited to practicing in a similar environment. Decentralizing the teaching and learning environment will enable our graduates to feel comfortable about practicing in community settings in rural and peripheral areas.

If the bulk of our service is decentralized to serve the community, it will be a matter of time before our research programmes and teaching follow suite.

4 Focus on health care needs

It is important that the entire organizational structure of our medical schools be examined in relation to the health care needs of the country. Medical schools should take responsibility for health care and not merely for medical care. Health personnel development and health services development should be co-ordinated. The importance of this integration is demonstrated by the results of a recent WHO survey (13) of six community-orientated medical schools. The survey indicates that a very small percentage of graduates from these schools enter into primary care careers. Indeed, the percentage of graduates from community orientated medical schools entering into primary care careers is not significantly more, and in some cases is less, than graduates from traditional medical schools. These disappointing results point towards the inadequate provision of primary care facilities in the health care system. The Beersheva medical school in Israel has recognised this and has moved towards integrating health personnel and health services development (14). The Dean of the medical school is both director of health services for the region and of medical education. Within the South African context, one might argue that the major disjuncture in the provision of appropriate health care lies in the nature of our health care system with its inadequate and inappropriate provision of primary health care services.

5 Selection of teachers

My final proposal concerns the kinds of lecturers responsible for the teaching of our students. The selection and development of our teachers is probably the single



Students are taught in an environment where sophisticated diagnostic techniques are readily available. They are often ill equipped to cope in areas where they cannot depend on these facilities

most important element determining the end product. They influence every other element in the educational process. They decide who the student will be, who the teachers will be, where teaching and learning will occur, what will be taught and learned, how it will be taught and learned and how it will be assessed. In addition to deciding about the nature of all elements within the educational process, the teachers shape the attitudes and values of impressionable students through the process of role modeling behaviour. If the bulk of our teachers are academic specialists practising curative medicine in high-tech hospital environments, it is highly probable that the educational process and the graduate emerging from it, will demonstrate similar characteristics.



Most medical school teachers have spent little or no time outside the high-technology teaching hospitals, in general practice or in rural areas

Most of the teaching staff within our medical schools have not seen much further than the corridors of high technology curative teaching hospitals. They progressed from student intern to senior house officer to registrar to specialist with limited, if any, exposure to the realities of general, and even less rural, medical practice. The result is that our medical teachers represent a "community of scholars" rather than "scholars of the community" (15).

Rural medical staff and other health workers should take an active part in influencing all elements determining the graduate. They should serve on student and staff selection committees, contribute towards designing an appropriate curriculum and take responsibility for much of the teaching and assessment.

Conclusion

Medical education in South Africa must move away from exclusive reliance on standards appropriate only to a small minority of its population. Standards of excellence within the context of the health care needs of the majority of South Africans are required. This would place the health worker in the role of an agent for social change.

I have considered what I believe to be the four most fundamental changes required in any serious attempt to contextualise the medical graduate delivered by the South African medical schools. If implemented, these proposals will, I believe, change the face of health personnel and health services development in South Africa.

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