

All that is solid melts into air — the implications of community based undergraduate medical education

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Introduction

THE more medical education changes, the more it stays the same. When the General Medical Council commented recently on the overloaded curriculum¹ it was repeating earlier concerns.² In fact, Professor Syme had noted in 1864 that 'the load upon the students' memories has become so excessive as to require some measure of relief'.³

The response within medicine to the excessive burden of factual knowledge carried by medical undergraduates has been to reorganize and update the load, without lightening it. Botany and much anatomy have been removed from the curriculum and behavioural sciences and therapeutics have been added, together with a little general practice. New dimensions in medicine have been squeezed into the overcrowded curriculum, but as Jewell points out,⁴ most medical students are still taught to a pattern that would have been recognizable to their predecessors in 1892.

Where change has occurred, it has done so slowly, without altering the pattern. Early initiatives by the College of General Practitioners introduced the teaching of general practice to the curriculum,⁵ a development that was accelerated by the Todd report.⁶ Departments or units of general practice grew at different rates and to different extents over a 30 year period, the last medical school following this trend in 1986.⁷ The medical officers of the North Staffordshire Infirmary who, in 1864, had urged the use of general practitioners for teaching medical students³ would surely have admired the stamina of colleagues who were still working on their proposal 120 years later.⁸

Academic general practice

While the diversity of activity within departments and units of general practice⁷ reflects the wide variation in course length and curriculum content at different medical schools,⁹ it is also evidence of the skills acquired by general practice academics. These extend beyond role-play technique or one-to-one teaching methods, to ensuring there is a general practitioner on curriculum committees, preparation of proposals for innovation which cannot be challenged, identification of hidden educational agendas, recruitment of student support, and development and assessment of pilot studies as a basis for further change.¹⁰

Success in overcoming institutional inertia lies in diagnosing barriers to change and designing methods for overcoming them.¹¹ The yield of such efforts in departments of general practice in medical schools in the United Kingdom has been considerable. The widespread use of videoed role play to teach communication skills,⁷ the development of family placement schemes,^{12,13} the introduction of student directed problem based learning¹⁴ and the use of innovative examination techniques¹⁵ are some examples of the educational riches of academic general

practice. Indeed, academic general practice needs all the wealth it can find, because at last the fundamental pattern of medical education may be changing. A shift in the pattern of teaching medicine seems imminent, not just in the UK, but in many parts of the world. It is possible that the medical students of 1992 may not recognize the curriculum of those whom they teach in 20 years' time, because teaching may have shifted out of the hospitals into the community. This is an alarming prospect, for if all that is solid in the ward round, the outpatient clinic and the pathological test melts into the thin air of problem solving and open-ended questioning, how will future students and their teachers organize clinical knowledge into usable forms? To answer that, we need to review the causes of this shift, and take stock of our resources.

The failure of tradition

Medical education is entering a crisis with at least three discernible and interrelated components: outmoded educational methods that are inadequate to the task of producing competent doctors; unsuitable teaching sites; and a change in the relationship between medicine and society.

Medical undergraduates not only experience an excessive burden from an overloaded curriculum, but also develop attitudes to learning that are based more on passive acquisition of knowledge than on scientific curiosity and exploration; they also suffer from boredom and a progressive disenchantment with medicine.^{1,16} Basic skills in history taking and clinical examination may not be taught effectively to a minority of undergraduates,¹⁷ who nevertheless are likely to qualify as doctors. Key areas of clinical practice, such as management of alcohol or drug misuse and care of the dying, receive limited teaching time and this may result in the graduates having negative attitudes to the patient¹⁸ or a lack of interviewing skills.¹⁹ Educational methods used in hospital based medicine favour a traditional inductive reasoning approach following fact acquisition, even though pattern recognition and hypothesis testing are more usual modes of clinical reasoning.²⁰ The dysfunctional effect of current curricula on learning has been sufficient for one medical teacher to produce a handbook on overcoming learning difficulties in medicine.²¹

Examinations influence undergraduates' approaches to learning,²² and as structured in most medical schools emphasize fact rather than skill acquisition, and superficial learning rather than in-depth understanding.¹⁹ Final examinations may be seen by students simply as necessary preparation for acquiring higher professional qualifications; when Oxford undergraduates were offered the abolition of a final assessment in a course with a well-developed continuous assessment approach, they rejected it.²³ The consequence of this traditional approach to undergraduate education is that a group of graduates can be identified who have a poor grasp of clinical logic, limited ability to make appropriate choices in investigation or prescribing and poor communication skills.²⁴

In addition there is a dearth of adequate clinical experience for medical students at existing teaching sites, largely because of reductions in the number of beds and the time patients spend in hospital, and increased clinical specialization.²⁵ This problem

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© *British Journal of General Practice*, 1992, 42, 390-393.

is particularly acute in London, where it was identified over a decade ago²⁶ and where it has not been solved by the merger of medical schools. A recent survey in one London teaching hospital showed a considerable deficit in the teaching of basic clinical skills.²⁷

The impact of the changing relationship between medicine and society was described in the conclusions of the first Turnberry conference in the United States of America, an expert meeting involving medical teachers from many different countries.²⁸ The participants argued that graduates face problems including the escalating costs of health care; growing public dissatisfaction with doctors individually and the profession as a whole; imbalance between the use of high technology medicine and primary care; inequity of access to services; wide variations in the quantity and quality of medical care; and the lack of training about measuring outcomes and assessing effectiveness to ensure efficiency in medical practice. In their view medical schools are divorced from the health needs of their communities and often have poor links with local services.

Solutions

The consequence of this crisis has been the development of a wide-ranging debate about changing medical education,^{4,16,29,30} with proposals that include a core curriculum,⁹ a college of medical education²⁹ and even a 'stem doctor' as precursor to medical and nursing specialization.³¹ The emphasis in the debate has been on acquiring the necessary cognitive and communication skills to become and remain effective clinicians. One way of achieving this would involve shifting a considerable part of clinical medical education into community settings which would primarily be general practice. Clinical teaching in the community has been advocated for some time in the UK²⁵ and implemented in innovative schools in other countries.³² Despite objections that the quality of general practice is too uneven and the academic base too small to allow a large amount of basic medical education to occur in the community, a consensus is developing that identifies general practice as a prime site for teaching all medicine, not just general practice.³³

Learning medicine in general practice offers the student opportunities that cannot be found easily in the present hospital-based education. Disease and disability can be studied in their natural context, making it easier for teacher and student to avoid a reductionist model of medicine and to appreciate the uncertainty at the centre of clinical practice.³⁴ The relationships between the organic, psychological and social dimensions of health, sickness and disease are easier to observe in the community, and the natural bias of general practice towards problem solving facilitates the development of an in-depth, 'elaborating' style of learning (which allows the student to integrate basic sciences and clinical experience) that correlates well with knowledge retention and high examination performance.³⁵ Patients can be followed from primary care through hospital care, and back to primary care in a process of individual but guided study that appears to promote later academic and research interests.³⁶

Epidemiology, pathology and therapeutics can be integrated through a problem-solving approach to casework, a method tested at McMaster, Canada and Newcastle, Australia (Hamilton JD, presentation to the first Turnberry conference, December 1990), and found to produce graduates with better analytic and communication skills than graduates from conventional training programmes.³⁷ Communication and patient education techniques can be learned by treating them as specific skills to be acquired,³⁸ an approach that has been shown to improve history taking, examination technique and accuracy of diagnosis.³⁹

Advantages and problems

There are potential advantages for general practitioners who teach undergraduates, apart from financial gain. Undergraduates in general practice provide their teachers with stimulation, opportunities for self reflection and learning, and enjoyment.⁴⁰ Undergraduates can contribute to the clinical care of patients, particularly those with chronic diseases,⁴¹ and through project work can assist in clinical audit.⁴² Beyond general practice, undergraduates working in the community can contribute to the medical school's and local health service's understanding of local health problems through work concerning issues identified as important by local community organizations.^{43,44} provided that these issues are relevant to the local community and defined by community bodies.⁴⁵

However, there are anxieties about the transfer of undergraduate education into general practice which may be well founded,⁴⁶ even though international experience suggests that they can be overcome.⁴⁷ There are shortages of resources and skills in all departments of primary health care,⁴⁸ and existing teaching in general practice may not be optimal. A recent study of medical student experience in London teaching practices associated with one academic department suggested that students wanted more experience in history taking and examination, more use of home visiting as a teaching resource and more contact with well-briefed primary care team members.⁴⁹ Problem solving approaches, widely used in both undergraduate and vocational training in general practice, may themselves be insufficient to equip undergraduates with the necessary 'inquiry' skills⁵⁰ that are needed for a problem solving approach to be fully effective.⁵¹

Undergraduate education in general practice may be effective in imparting basic skills and consultation techniques but poor in teaching management methods in contentious or developing areas of medicine. For example, if general practitioners are sometimes reluctant to undertake opportunistic health education about human immunodeficiency virus infection,⁵² how will they teach their students to undertake such tasks? When American family medicine residents were given training in taking sexual histories, their consultation performances were better than those who had not been trained, but no member of either the control or the intervention groups elicited sexual orientation,⁵³ a failing that is unlikely to be confined to the USA. There is some evidence that, where community based undergraduate education operates, only part of the range of primary care workload is used as an educational resource,⁵⁴ and this may reflect the inherent biases of the teachers.

Finally, the extra time for teaching by general practitioner teachers and the better prepared teachers that are needed for implementing community-based medical education programmes are argued for by Metcalfe⁵⁵ and are mentioned in the General Medical Council's discussion document¹ and in the King's Fund study,³³ but their financial implications for university funding, and the division of resources between faculties have yet to be addressed adequately.

Building on experience

Given that community based education to teach students seems to be one of the few options open to medical schools, how can the pitfalls of teaching in general practice be avoided and the benefits maximized? The first danger is that over-enthusiastic academic general practitioners in increasingly hard-pressed schools will promote rapid expansion of community based education, without prior preparation of general practitioner tutors and reinforcement of the networks of teaching practices. This may well damage the whole project, because boredom, lack

of role and insufficient structured teaching are just as possible in the general practice surgery as in the outpatient clinic. The second danger is that educational resources outside general practice — in public health medicine, nursing education, social services training and voluntary organizations — will be excluded from the community curriculum to the detriment of the students.

Steering between these two dangers may be difficult, but general practitioners are better equipped to undertake this task than to adopt the new roles of fundholder or case manager. Oswald has pointed out the resources that general practice already has: networks of teaching practices staffed by experienced tutors; the whole apparatus of vocational training, including teaching and support systems for trainers and accreditation of teaching practices; and the body of knowledge about one-to-one teaching and learning that has emerged from vocational training.²⁵ Jewell has noted the growing number of both service and academic general practitioners who have some training in epidemiology and research methods,⁴ and who are contributing to the growing base of academic general practice.⁵⁶ Much of this development in medical education has occurred at some distance from university departments, with members of the Royal College of General Practitioners providing the cadre of teachers and trainers while the College itself has provided resources and strategic thinking.

Conclusion

The convergence of academic general practice, the vocational training networks and the nuclei of audit groups that now seems necessary for community based medical education to develop may be relatively easy, given the overlapping membership of these three groups and the common clinical culture, but there is much work still to do. Undergraduate medical education in the community is not vocational training 'brought forward', since general practitioners will be teaching future surgeons and physicians. No role as yet exists for the student on extended attachment to a practice, but something akin to a clerkship yet short of a trainee role must emerge. Students may find community education difficult, not just because some are afflicted with the notion of 'entitlement' (perceiving themselves as being entitled to do the minimum work necessary to pass examinations),¹⁶ but also because the reductionist model of hospital medicine has a defensive function, to some extent protecting students from contact with ill-ness, misery and death. Coping with these facets of medicine in general practice may become an important task, perhaps requiring student groups comparable to trainee workshops. Finally, enhancing collaboration with other professionals and agencies, or developing useful clinical audit, are daunting tasks for us all, but incorporating them into a teaching programme may facilitate their evolution, as students perform their usual catalytic function within practices.

Forty years ago, the RCGP began by considering undergraduate education. It achieved important objectives in this area, allowing it to concentrate more on practice management, postgraduate training and quality of care. Undergraduate medical education has returned to the top of the agenda to pose a new challenge to College members and faculties. It is time for the College to renew its strategic thinking about medical education, and for College members to address the issues in their practices. In the 1950s, the RCGP had to launch and steer undergraduate medical education for general practice. In the 1990s it will have to facilitate and concentrate diverse efforts to shift a considerable portion of clinical teaching into the community. Teachers in general practice will need to refocus away from their specialty and on to the problems of teaching medicine itself. The tasks are different from those of the 1950s and are formidable. However, despite the evident problems of shifting

medical education into the community, I think we can be confident about our response.

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