A doctor treats a boy in Ghana.

Community-based medical education

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concepts of healing and health are paid insufficient attention in most medical schools

Medical education – based predominantly in hospital environments, and with increasing specialisation and a rapid turnover of patients who represent a narrow spectrum of health problems – is being re-examined in the light of contemporary realities. A significant reorientation is needed in medical education, to allow students to understand people in their social contexts in a more holistic way, rather than seeing them merely as parts of a biological machine.

The education of tomorrow's doctors requires teachers, students and health professionals across the full spectrum of care to understand health as a product of a complex network in which it is not possible to tell whether one event is more important than another. It is no longer appropriate to regard the role of the community in medical education as an add-on to a curriculum dominated by biology and technology, with establishments and students steeped in a hierarchy of disciplines where biology rules to the exclusion of most of the other social, political, economic and psychological factors that play important roles in the determination of health. 'By concentrating on smaller and smaller fragments, modern medicine often loses sight

of the patient as a human being and by reducing health to mechanical functioning is no longer able to deal with the phenomenon of healing.'[1] In general, the concepts of healing and health are paid insufficient attention in most medical schools.

Health professionals must be responsive to the needs of the populations they serve, and improve healthcare systems through education. Several governments have issued specific guidelines for changes in medical education to prepare graduates for work in health systems, to address the health needs of families and communities, and to help in improving access to health services in places and under conditions that promote general well-being. These guidelines require students to demonstrate abilities, perspectives and resourcefulness consistent with continuing education, and an orientation and capacity to promote health. They also require more attention to be paid to building links between educational institutions and the health sector. Community-based medical education (CBME) is a strategy that will help to achieve this.

WHAT IS COMMUNITY-BASED MEDICAL EDUCATION?

CBME consists of activities that use the community extensively as a learning environment, where students, teachers, community members and representatives of other sectors are actively engaged throughout the educational experience in providing medical education that is relevant to community needs. It may be an urban or a rural community, though at present in developing countries most of the people live in rural areas. Primary care stands at the centre of medical care systems based in community clinics.

CBME is a broad concept, providing students with opportunities to interact with people from a wide range of social, cultural and ethnic backgrounds. It is often directed towards priority health needs and the redistribution of resources to specific populations, and requires a synthesis of clinical skills, knowledge, capabilities and attitudes. It also requires physicians to be fully competent in the treatment of the complexities of chronic disease, older patients and the continuously evolving knowledge and technology of contemporary medicine. CBME might involve visiting families expecting a baby, or taking part in community projects. It provides students with opportunities to become increasingly involved in health issues and, as their competency grows, to plan and provide care. CBME is not about poor medicine/health care for poor people, and it is not about saving money: it is about engaging in a creative way with communities in the context of real health problems while at the same time learning essential attitudes and skills applicable in both hospital and community settings.

More recently, CBME has come to be seen by some as a means of providing aspects of the curricu-

Community-based medical education is not about saving money

Collecting water from a hole punched in a pipe in Belem, Brazil.

Students found the community mentors to be more enthusiastic, receptive and stimulating

Table 1. Students' learning experiences with general practitioners

Students' perceptions about learning with community-based general practitioners	Continuity in patient follow-up
	Extended contact with patients
	Develop relationships with patients
	Enhanced awareness of social determinants of health and illness
	Less time waiting around
	Adds relevance to learning
	Taught by fewer different people
	Followed written study guide more appropriately
	See a wider range of acute, chronic and emergency problems
	One of the most important experiences in my medical education

lum for an expanded intake of medical students in general practice placements.[2,3] Other perceptions of CBME include the exposure of students to practices in the community, with the intention of encouraging more graduates to locate their own practices there.[2,4,5] There are many highly knowledgeable and advanced specialists working in hospitals, with superb medical technology, to solve complex individual problems, but at the same time it is clear that the most prevalent health problems of populations cannot be dealt with in a tertiary hospital setting. Dynamic collaboration between educators, researchers, specialists and generalists is necessary to help communities and individuals to identify their priority health needs, and to implement feasible, affordable and sustainable interventions.

STUDENT LEARNING EXPERIENCES

Advantages of CBME as described by students in the literature[2–4,6–8] included access to a wider variety of patients; more opportunity to develop and practise clinical skills; more continuity of care with patients; added relevance to learning; more experience with the determinants of health and the impact of social, economic and political events on the health of people; more enjoyable educational experiences; and teachers who were more likely to model positive teaching attitudes, show interest in students and provide feedback. Community-based learning was perceived by students as being particularly appropriate for learning about psychosocial issues, patient autonomy and communication skills. As far as learning in a hospital-based setting was concerned, students indicated that the advantages included seeing more complex health problems; having access to high technology; seeing a wide range of procedures; learning about different specialities; and learning about acute and emergency problems[7] (see Tables 1, 2 and 3).

THE MENTOR

Students indicated that, compared to teachers in the hospital setting, they found the community mentors to be more enthusiastic, receptive and stimulating. They appeared to be more interested in caring for patients and more able to provide immediate feedback. Students appreciated the one-to-one experience and frequent access to a supportive teacher, and felt that they had gained a unique perspective on the diversity of health problems and needs within the community[4,5,7] (see Table 4).

Table 2. Student learning experiences with hospital-based practitioners

Students' perceptions about hospital-based learning	See more complex health problems
	Different types of procedures and technology
	Learning about specialities
	Learning about acute conditions

Table 3. Student learning experiences common to both community- and hospital-based training

Common experiences in community-based and hospital-based learning	Learning to work in health teams
	Experience of some emergencies
	Learning to work in multi-disciplinary teams
	Learning clinical skills
	Assessments: global, written, oral, direct observation
	Small-group, self-directed learning

Table 4. Students' perceptions of mentors (general practitioners)

Students' perception of general practitioners	More enthusiastic
	More knowledgeable
	More stimulating and enjoyable
	More interested in and caring about patients
	Low tutor–student ratio
	Immediate feedback
	One-to-one teaching
	Access to supportive mentor
	Unique perspective on community needs and conditions
	Broader context and diversity
	Increased awareness of patient autonomy
	Improved communication skills

Table 5. Mentors' experiences with students

Mentors' experiences with students	Adds about one hour of work a day
	Stimulates me to keep knowledge up to date
	Feels good to give something back
	Enhanced enjoyment of practice
	Minor benefits from medical school mean a lot
	Need more feedback about my teaching
	Faculty development in education is needed
	Monetary payment important to some, not to others

Table 6. Long-term attachments in general practice

Outcomes of long-term attachments in general practice	Equal clinical skills
	Equal professional attitudes
	Equal or better academic performance
	Equal or better knowledge
	Equal or better communication skills

Having students in their practices was an interesting experience for mentors. For many of them, mentoring increased the length of their working day by about one hour per student. However, the presence of students enhanced their enjoyment and stimulated them to keep their knowledge up to date.[4] Benefits mentioned most frequently included having an academic appointment; gaining continuing medical education credits; faculty development in education; computer links to clinical information; and access to the medical library. When asked why they took students into their practices, the most frequent response was, 'To give something back'[4] (see Tables 4 and 5).

SELECTED OUTCOMES

Long-term attachments in a community-based general practice can provide students with the necessary skills and abilities to perform successfully in communities[2] as well as in their final years of study in tertiary hospitals[9] (see Table 6). CBME students performed as well as, or better than, their colleagues on traditional courses with respect to clinical skills, abilities and attitudes, and qualified through the same examinations at the same time as their traditionally-educated peers.[9,10,11] They also had an easier and faster transition into clerkships.[2]

THE CHALLENGES AND DIFFICULTIES OF CBME

Some significant challenges for students, teachers and practitioners in community-based learning included: a high degree of variability of learning experiences at different community sites and with different preceptors; the time required to travel to community sites; and dealing with negative attitudes. The latter resulted from community and primary care work being seen as second-rate medicine by some tertiary care specialists, while at the same time some community physicians felt that academic, university-based physicians were not 'out there in the real world'.[4,12] Other challenges included recruitment, retention, support (financial and other), and faculty development in medical education[4,12] (see Table 7).

The biggest challenge is to generalise successful aspects of CBME experiences. This will require leaders in medical schools and communities to recognise the full extent of their social contract with society. CBME can be integrated successfully with components of the curriculum such as clinical skills, doctor–patient–society, professionalism,

in developing countries most of the people live in rural areas

Table 7. Challenges of community-based medical education

Challenges of community-based medical education	Increased workload for mentors
	Educational development of mentors
	Inconsistency of student experiences
	Travel to community sites
	Inconsistent evaluation of learning experiences
	Integration of community-based and medical school experiences
	Recruitment and support of mentors
	Differences in bias about and among primary and tertiary care physicians

epidemiology and public health. There are enough community-based practitioners willing to mentor students, and a successful link between them and hospital-based health practitioners will be beneficial for all concerned.

WHAT IS NEEDED TO BE A SUCCESSFUL TEACHER/MENTOR?

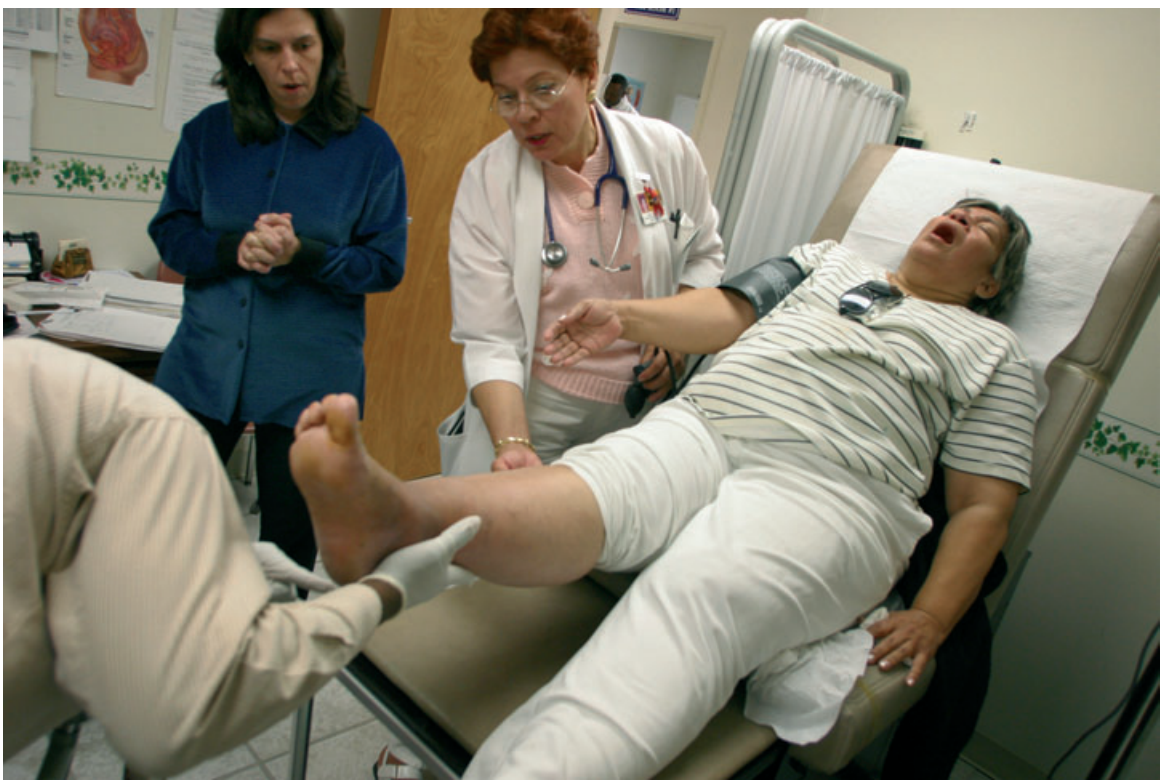
Essential ingredients for the education of medical students, regardless of setting and context, include:

- dedicating time for teaching
- facilitating active participation in learning experiences
- activating previous knowledge and experience
- helping learners to link new knowledge and situations to previous experience
- providing timely and meaningful feedback (formative and summative)
- promoting reflection about experiences and learning
- facilitating the repeated application of newly-acquired knowledge in similar but slightly different contexts over time, with reflection and feedback.

Some of these concepts and skills may be new to many teachers. As with clinical skills, the continuous development and practice of teaching skills is essential.

SUMMARY

In 1910, Abraham Flexner helped to introduce modern medical and science education to American colleges and universities, moving medical education into hospitals, and separating the basic and clinical sciences. This was a response to the political, economic and social context of medical practice, and the education of physicians at that time. But in the more complex world of the twenty-first century, we are becoming aware that a fragmented approach to health problems



A doctor treats a patient at a clinical for the uninsured, Florida, USA.

Lincoln County, New Mexico, location of a community based medical education experience for students at the University of New Mexico School of Medicine. Photo: University of New Mexico School of Medicine.

and medical education is in itself causing problems. CBME combined with hospital-based education is a successful strategy to help re-orientate and integrate medical education more fully, as well as promoting better relationships between medical schools, general practitioners and hospital-based practitioners. It focuses on the community – where people live and where most health problems can be prevented or treated. Transforming medical education will mean all of us developing a better understanding of CBME. We would then be able to work together more effectively than has been the case in the past, to prepare tomorrow's doctors for their role in improving people's health.

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