

SPECIAL SERIES

Relationships: A New Way to Analyse Community-based Medical Education? (Part One)

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ABSTRACT *Relationships do matter! In fact, medicine cannot be learned without them, and community-based medical education (CBME) curricula that ignore them or take them for granted do so at their students' peril.*

As CBME is becoming more popular, there is a need to develop appropriate frameworks for describing quality in CBME to ensure that it remains a principle-driven, not format-driven, initiative.

In this paper, I provide evidence for a simple model of four key relationships, the four Rs, in which the medical student must be immersed to facilitate high quality learning. These four Rs are the relationships between (1) clinicians and patients, (2) health service and university research, (3) government and community, and (4) personal principles and professional expectations.

As a result of this synthesis of the current medical education literature, I propose that this model of clinical, social, institutional and interpersonal relationships is a valid framework for articulating the important principles in CBME, and that it describes why community-based medical education is such an attractive alternative.

Relationships do matter!

KEYWORDS *Community-based medical education, undergraduate, quality, curriculum, health services, reform, community needs, relationships.*

Relationships do matter! In fact, medicine cannot be learned without them, and curricula that ignore them or take them for granted do so at their students' peril!

Can this forthright assertion be justified? Does it matter?

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In this paper, I will propose that the answer is “Yes” to both these questions. Furthermore, I aim to show how, by examining the role of clinical, institutional, social and personal relationships in learning medicine, we can develop a framework for describing quality in community-based undergraduate medical education.

I have formed this hypothesis as a result of working with communities, medical students, university staff, clinicians, and governments, developing and evaluating a variety of undergraduate community-based medical education (CBME) programmes in rural and urban Australia, including the Riverland Parallel Rural Community Curriculum (Worley *et al.*, 2000a).

CBME has been defined as “a means of implementing a community-oriented medical educational (COME) programme. It consists of learning activities that take place within the community where not only students but also teachers, members of the community and representatives of other sectors are actively engaged throughout the educational experience” (World Health Organization, 1987). This can be conducted in either a primary or secondary care setting. COME is medical education “that takes into consideration, in all aspects of its operations, the priority health problems of the country in which it is conveyed. Its aim is to produce community-oriented doctors who are able and willing to serve their communities and deal effectively with health problems at primary, secondary and tertiary levels” (Hamad, 2000).

CBME has many passionate proponents, but I would contend that as it becomes more commonplace, it is vulnerable to becoming a format-driven rather than principle-driven innovation (Hamad, 2000). Problem-based learning has recently had similar criticism (Colliver, 2000). There can be “good” and “bad” CBME, just as there can be “good” and “bad” tertiary hospital-based learning. Might it be that in considering relationships we can understand the factors that lead to good CBME?

The Oxford Dictionary defines “relationship” as “the existence or effect of a connection, correspondence, contrast, or feeling prevailing between persons or things, especially when qualified in some way” (Moore, 1997). Relationships in medical education are multifaceted, having characteristics that may be conceptual (e.g. the relationship between different components of the curriculum and/or assessment), institutional (e.g. a partnership between a university and a community, or the use of Information Technology to bridge geographic isolation), and interpersonal (e.g. patient/student/teacher relationships).

The Four Key Relationships

Daniel Federman, in reflecting on his experience as Dean of Medical Education at Harvard Medical School, described what a good physician-educator brings to a student in terms of four axes: doctor–patient, bench–bedside, individual–

community, personal–professional.¹ I suggest that these axes form the basis of four key relationships, the four Rs, in which the medical student must be immersed to facilitate high quality learning. With slight modification, they form a model to describe and discern quality in CBME curricula (see Fig. 1).

Before describing each axis in detail, I wish to emphasize that this practical framework is consistent with the six prevailing educational theories described recently by Kaufman *et al.* (2000) as being relevant to medical education: the need for mentoring, modelling and participation described by experiential learning theory (Axis 1); the relationship between theory and practice demonstrated by the concept of the reflective practitioner (Axis 2); the importance of interacting with the external environment as articulated by social cognitive theory (Axis 3); the relationship between the student’s paradigms and other conflicting perspectives inherent in transformative learning (Axis 4); and the overarching principles of student-centredness inherent in adult learning principles and the requirement for congruence between assessment and curriculum in a self-directed learning environment.

The Clinical Axis: Clinician–(Student)–Patient

The first R describes the medical curriculum facilitating the student’s entry into the midst of the doctor–patient relationship. A patient’s face can act as the recall trigger for a wealth of knowledge about a certain disease or treatment (Coles, 1990). But how many patients do students actually get to know well, and

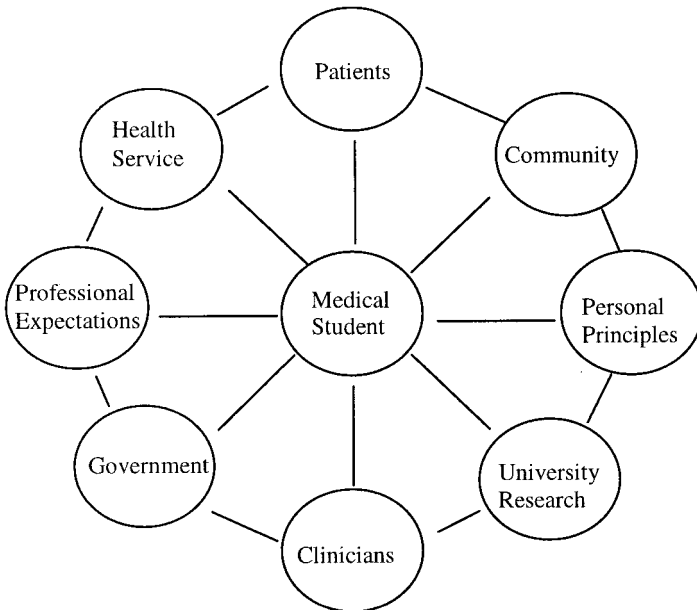


Figure 1. The relationship wheel: the 4R model.

how many doctors do they have the privilege of knowing as people? Whilst many studies have found the access to appropriate patients to be an advantage of CBME (Mennin *et al.*, 1996; Grant *et al.*, 1997; Worley *et al.*, 2000b), this is not a *fait accompli*, and requires intentional planning (Hobbs *et al.*, 1987; Parle *et al.*, 1997). Researchers from Michigan found that with only a one-month ambulatory rotation, student experience with patients was patchy. They suggested that a greater longitudinal experience would be necessary to improve this (Gruppen *et al.*, 1993), a position echoed by a recent international review of ambulatory teaching (Irby, 1995).

Short-term community attachments, therefore, may not necessarily confer any advantages over standard hospital ward attachments in regard to this axis. However, because of the broad range of clinical opportunities available in community settings, it is easier to justify extended (greater than three months) community attachments without the risk of skewing the students' case exposure (Mac Isaac *et al.*, 2000). An extended apprenticeship-style community-based attachment, where students gain a respected "hands-on" role in the health team and are mentored by generalist role models, can give students a privileged welcome into the lives of "their" patients and increase their clinical confidence (Harrell *et al.*, 1993).

The educational relationship of a student with their clinical teacher has been shown to closely resemble the therapeutic doctor–patient relationship (Magill *et al.*, 1986). Sufficient time must be provided if students are to develop these relationships with patients and supervising clinicians (Irby, 1986). No matter how technologically innovative we may become in order to attempt to overcome the problems of integrating students into the doctor–patient relationship in western countries (Friedman, 2000), the clinical apprenticeship, and the relationships between clinicians, students and patients, will still be the core of medical teaching (Alkan, 2000), and must be given time (Glick & Moore, 2001), and explicit support (Cote & Leclere, 2000), to have its best results.

Notice that this axis refers to clinicians, not just doctors. The importance of learning in teams, and from various members of the team, has been recognized for many years (Barrows, 1986). Despite the perceived educational benefits, and the recognized opportunity that such learning has to actually contribute to the care of communities, there is still considerable controversy surrounding the concept of interdisciplinary learning (Pittilo & Ross, 1998), and few faculties have been able to coordinate the necessary timetabling, curriculum and resource issues to enable this to become a reality (Nazareth & Mfenyana, 1999).

The Institutional Axis: Health Service–(Student)–University Research

The second R represents the relationship between the fundamental priorities of the two key institutions involved in medical education—the research evidence

base of the university and the clinical care and patient management responsibilities of the health service. Federman² referred to this axis as the “bench and the bedside”.

The importance of this relationship to a student’s learning is one of the reasons why problem-based learning (PBL) has proven so popular with pre-clinical students—it brings basic science into a meaningful relationship with clinical decisions—the concept of “experiential learning” (Kolb, 1984). There is some evidence of the success of the PBL approach in the pre-clinical years (Baca *et al.*, 1990), but there is not unanimous support for this evidence. In his recent critical review of the equivocal results of PBL, Colliver commented that many “PBL” environments do not differ greatly in their “context” from traditional courses, and that this may explain some of the observed lack of effect (Colliver, 2000). By explicitly emphasizing this relationship axis, CBME offers an attractive “context” to exploit the advantages of pre-clinical PBL.

In the clinical years, the stimulus to get back to the basic sciences most powerfully occurs from the responsibility of having to make clinical decisions with real people, not constructed cases (Dammers *et al.*, 2001). If this case-based learning is going to be representative of the broad medical curricular objectives that are appropriate for undergraduates, then it follows that students need to have access to appropriate patients.

A community-based attachment can easily provide the necessary case-mix, but has to be creative to provide timely access to relevant basic science knowledge (Maulitz *et al.*, 1996). Advances in electronic media and flexible delivery of information and education have greatly facilitated this relationship in community-based learning (Christie *et al.*, 2000). To maximize the potential of CBME, learning resources need to be available to the student where the patients are, not only in classrooms, libraries or computer laboratories (Murray & Modell, 1999). One of the difficulties faced by students in CBME is when they perceive their teachers to not be incorporating science into their practice. This can be because clinicians are functioning at the level of “tacit” knowledge, rather than helping students by explicitly linking theory and practice (Kilminster & Jolly, 2000). The process of “reflective learning” can facilitate this transition for medical teachers (Shapiro & Talbot, 1991).

By learning in the community, but accessing additional required expertise from a tertiary centre associated with the university, students not only learn to relate to such a centre from the community’s perspective, but also can become advocates for that centre’s expertise in the community (Summerlin *et al.*, 1993; Haynes & Lee, 1995). Thus, the credible presence of community-based students can enhance the relationship between the university centre and the community (Kaufman, 1990). This relationship, and the student’s opportunity to facilitate it, is highlighted in the philosophy of the “community-oriented” medical education institutions (Hamad, 1991).

The tension between a student’s educational goals and the research mission of the university on the one hand, and the service goals of the health service on

the other, has been well documented as one of the major obstacles to reform in medical education (Abrahamson, 1996). This tension can be instructive for students if they see themselves as part of the solution (Seifer, 1998), but equally can be extremely destructive if they perceive themselves as unwelcome from both sides and part of the problem (Bloom, 1989).

Transforming this tension into an opportunity can be accomplished in CBME, but again is not implicit in all CBME programmes. Teaching medical students can be the first step in building a relationship between a particular community-based health service and the university. This can then be a bridge to the community's involvement in developing a mutually beneficial research programme with the university (Humphreys *et al.*, 2000). Similarly, the presence of medical students can change the practice of clinical supervisors and thus both improve the clinical service offered (Kamien, 1990), and increase patient satisfaction (Bentham *et al.*, 1999).

Changes to the funding allocations are required to allow community-based supervisors time to teach. The relationship between the university and the health service is often tested at this critical point (Murray *et al.*, 1995; Howe, 2000). It is acknowledged that such funding is often easier to obtain for innovators in industrialized, English-speaking countries (Kaufman, 2000), and that transnational collaborative relationships may be a crucial strategy in overcoming this (Alkan, 2000). The relationship of funding and government policy to quality in CBME brings me to the third relationship.

The Social Axis: Community–(Student)–Government

Medical education, and, indeed, medical practice itself, does not occur in a vacuum. The third R describes this external environment as the relationship between government policy, law, funding constraints and initiatives on the one hand, and the demographic, geographic, cultural and epidemiological needs and determinants of society on the other. Students need to learn the tension (often a strained relationship) between an individual's needs and a population perspective to health care, between prevention and cure, between individual choice and societal determinants of health, between a government's democratic perspective and the needs of minorities in society (Education Committee of the General Medical Council, 1993). The best place to learn this is being confronted with choices that have to be made for real people in the context of feeling a part of that society and being given the opportunity to contribute positively (Eckenfels *et al.*, 1990). The global imperative for medical education to consider this axis seriously in determining quality in medical education was first clearly articulated in the Ottawa Declaration (World Health Organization, 1986), and more recently in the Phuket Consensus (World Health Organization, 2000).

In this regard, the artificial environment of many teaching hospitals can have an insulating effect. Community-based terms often have the development of an understanding of this third relationship as one of their stated contributions to the medical course (Iwama de Mattos *et al.*, 1998; Margolis, 2000). A well constructed community-based course can create in students a passion and understanding of these issues that can transform their lives (Goswami *et al.*, 1998). As Kaufman points out, this focus is even sharper for students in rural communities, as “in rural communities, the social forces impinging on health can be more readily defined, while opportunities for intervention are more accessible to the students” (Kaufman, 1990).

But, I would suggest, if this axis is left to chance, and especially if not emphasized sufficiently in the final assessment (which drives learning, and the validity of which is currently under considerable scrutiny; Van der Vleuten, 2000), students in community-based terms can miss this relationship completely and concentrate purely on the first two axes of the curriculum. Interestingly, two significant documents, attempting to provide a framework for the social responsiveness/quality of medical schools, both ignored the issue of student assessments. They based their evaluations on curricular experiences only (Boelen *et al.*, 1991). Perhaps not being explicit about the importance of the contribution of assessment in this axis, and therefore not curbing the influence of the often reactionary “hidden curriculum” (Snyder, 1971), is one of the reasons that there is continued frustration at the lack of successful implementation of this axis, despite 50 years of international effort (Frenk *et al.*, 1997).

The Personal Axis: Personal Principles–(Student)–Professional Practice

The fourth R is that between professional practice and personal principles and values. Medicine can be an isolating and very demanding job (Ellenwood, 1999). Balancing personal and family priorities with the expectations of patients and colleagues has been shown to have adverse effects on the health of both doctors and medical students (Styles, 1993).

There has been recognition that students and residents need to grow emotionally to become good physicians (Magill & Berkowitz, 1993), especially in the way they approach their own capacity for error. If this doesn't occur, the consequences for patient care can be as certain as for lack of knowledge or skill (Leape & Berwick, 2000). This cannot be learnt from textbooks. It requires a student to be stimulated to learn ethics, morals and values by being confronted by the frequent conflict between their own ideals and theories and how they see medicine practised in real life (Styles, 1993).

This axis involves learning skills of time management and the balance between family and work. Is a tired, cynical and disillusioned doctor, whether

an intern or resident or solo general practitioner, the best person to learn this from? Some have suggested that rather than teaching students in an environment where ridicule and competition are accepted, and therefore errors covered up at all cost (Wolf, 1997), medicine needs to be placing students in a new ethical culture that accepts fallibility and seeks to learn constructively from mistakes in an open, supportive environment (McIntyre & Popper, 1983). Questions have been asked, though, as to whether supervising doctors are able to be vulnerable enough about their own uncertainties to encourage this learning to occur (Bligh, 2001).

This learning is facilitated when students are able to participate actively in the ongoing decision-making and management processes for “their” patients. In this situation, they often become their patient’s advocate. In a community setting they also have the opportunity to develop far less hierarchical relationships with both their supervising clinicians and their patients (Price *et al.*, 1994). They can interact in non-clinical settings such as shopping centres, sporting clubs, and community social events (Newble & Jones, 1997). Perhaps this is an area where hospital staff can learn from community-based teachers.

Conclusion

Engel described the relationships between the biological, social and psychological aspects of health and illness (Engel, 1977). Allen extended this to suggest that healing is the creation of “wholeness”. He asserted, “in healing there is relationship. Healing involves a relationship on the part of the person who is being made whole with his or her healer. It also involves inner relationships with self, together with relationships with community, with nature and with God. The person being healed is an active participant in the process, in terms of expectancy, cooperation and self-help” (Allen, 1995). Given this, and the close parallels already drawn between clinical practice and medical education (Magill *et al.*, 1986), is it not natural to suggest that, by emphasizing the quality of the relationships between the critical components of medical education, with the student as an active participant in the process, we can achieve quality in CBME?

In this paper, I have provided evidence for the role of clinical, institutional, social and interpersonal relationships in providing a framework for describing quality in CBME curricula—the 4R model. As a result, I conclude that it is the ability of a CBME curriculum to immerse a student in this rich milieu of inter-related factors, and then enable them to capitalize on the connections, which differentiates a good learning environment from a poor one.

Clearly the four axes are not independent of each other. In a following paper I will propose a key, unifying characteristic for this 4R model. I will also develop the model further in relation to its implications for student selection, curricular goals, course structure and assessment.

CBME can be a principle-driven educational process, which provides significant advantages to medical students, clinicians, communities, health services, governments and universities. By paying as much attention to the relationships as to the content of a curriculum, it soon becomes obvious that the context of learning does make a difference.

Relationships do matter!

Notes

1. Federman, D. (1999) Address to the Harvard Macy Institute, Boston.
2. *Ibid.*

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