



EDITORIAL

## The Importance—and Limits—of Best Evidence Medical Education

A welcome and overdue effort is underway to have trustable research findings begin replacing personal opinions as a basis for decision-making in the education of health professionals. A few recent developments illustrate the rapid pace of this important set of developments. In July, 1999 in London, England, a meeting was held at the School of Public Policy of University College to plan and begin establishing an international collaboration to prepare, maintain and promote the accessibility of systematic reviews of research on the effects of social and educational interventions. This international initiative, which will be called the Campbell Collaboration, is modeled after the Cochrane Collaboration ([www.Cochrane.org](http://www.Cochrane.org)) (Chalmers, 1993; Sackett *et al.*, 1996), the growing collection of systematic reviews of research that provide much of the support for evidence-based medicine (EBM) (Dawes *et al.*, 1999). By the time you read this, the Campbell Collaboration should have become official at a meeting that will have been held in Philadelphia toward the end of February, 2000.

In Linköping, Sweden, in August of 1999, the Association for Medical Education in Europe (AMEE) devoted several sessions to best evidence medical education (BEME). A “guide” on the subject was recently published in *Medical Teacher* (Harden *et al.*, 1999). In addition, with support from the Scottish Council for Postgraduate Medical and Dental education, six editors of English-language journals of medical education (myself included) and 12 others with special interests in this subject had the privilege of attending an intensive “think session” in London on BEME and related matters in early December of 1999. I expect that several articles and editorials, in addition to this one, will emerge from that meeting.

The authors of the BEME Guide #1 (Harden *et al.*, 1999) state in the opening words of their summary: “There is a need to move from opinion-based education to evidence-based education. Best Evidence Medical Education is the implementation, by teachers in their practice, of methods and approaches to education based on the best evidence available.” This assertion and definition both seem eminently reasonable.

Opinion-based decision-making has dominated health professions education so far. Much of what goes on in curriculum committees and other educational planning groups involves debates over assumptions, cherished traditions, and quaint myths. Seldom are there informed dialogues over the interpretation of available research findings. Educational deliberations in many schools of the

health professions are shaped more by the political power and prestige of the individuals who are espousing particular points of view than by the strength of available evidence. Simply put, educational decision-makers typically pay more attention to the source than to the force of arguments. Yet, whether evidence is available or not, and whether people are aware of available evidence or not, decisions are continuously being made. So, it seems reasonable and appropriate that we should be making every effort to improve the quality and scope of research evidence, to tease out and give visibility to the most worthy of the research findings. We should also do all we can to enhance the use of these findings by teachers and by those who shape educational policies. While rejoicing in the fact that some of these steps are now being taken, I feel compelled to observe that these desirable developments will not be enough. For several reasons, we must accept that good research evidence, while highly desirable, is insufficient. Let's look briefly at some of the main issues.

In health professions education there are at least two broad categories of decisions that guide the actions of teachers—"macro" and "micro" decisions. Macro decisions are made by curriculum committees, deans, departmental administrators, teachers, and in some settings, government agencies. Many of these macro decisions provide the context and the constraints that shape the overall educational program. Macro decisions produce schedules, policies and regulations. They define resource allocations. For example, if the decision is made that no facilities or teachers will be provided for small-group learning sessions, the consequences for the education program are substantial. If creative and energetic contributions to education are not recognized with institutional rewards, the educational program is likely to be of lower quality than it could have been.

Even when based on the best available evidence, macro decisions can be overridden and undermined by micro decisions. Teachers make micro decisions on a moment-to-moment basis during instructional events. At times, these micro decisions can be even more important than macro decisions in shaping learning outcomes. For at least the following three reasons, micro decisions are less amenable to the influence of evidence than we might imagine or prefer:

- important parts of what teachers do are shaped by their personalities, not by evidence (for example, all other things being equal, a warm, supportive person who has a good sense of humor is likely to be more effective than is a cold, distant, dour teacher);
- many micro decisions are spontaneous and emotionally driven more than they are rational or cognitively driven (for example, some teachers who feel put on the spot by the challenge of a learner's difficult question respond automatically and defensively, without pausing to reflect on which available research evidence should guide their immediate reply.); and
- evidence from group-based research often doesn't adequately inform the individualized, idiosyncratic decisions that are needed in the daily conduct of

teaching. Knowing what is found desirable for most learners in research studies may not be relevant to one specific learner under conditions that are not identical to those in the studies. (Each learner's personality and past experiences, combined with the context of the learning setting, create a unique situation. The findings from most research provide only general guidelines that may or may not be relevant to the particular situation of any given learner.)<sup>1</sup>

Most of what occurs during instructional encounters is not the result of macro decisions or even of conscious, deliberate choices. Much of what teachers do are expressions of who they are more than a response to evidence they have reviewed. At the extreme, we now know that too many teachers mistreat learners in various ways, are even abusive toward them (e.g. Baldwin *et al.*, 1991; Daugherty *et al.*, 1998). Such teachers are not driven by evidence to behave in hurtful ways. Although we have learned about these undesirable teacher behaviors through research, it will not likely be research evidence that causes such teachers to change their flawed relationship patterns. Rather, it will take firm administrative policies and sometimes even legal intervention to curtail some of these practices. The decision about who should and who should not teach may be one of the most influential of all macro decisions. But these vital determinations are seldom shaped by educational considerations. In most institutions teacher selection is a long way from being influenced by available evidence on the desirable characteristics of teachers.

Much of what happens between teachers and learners is less extreme than abuse, but it can still be powerful in its consequences. Usually, without a foundation of evidence or even systematic reflection, teachers adopt patterns that shape their learners' values, priorities, career plans, and ways of relating to patients, not always in desirable directions. In subtle and unsubtle ways, teachers convey their sense of appreciation for some forms of learner behavior and their disparagement of other forms of behavior. These influences guide the evolution of learners' behaviors more than do any formal curricular plans. It is under these influences, which have come to be called the "hidden curriculum" (Hafferty, 1998), that learners develop the lingering habits of mind and professional characteristics that are among the most critical factors determining the quality of their future work.

Are any of these observations meant to devalue the steps being taken to promote the review of research evidence, or to discourage our use of the findings that will emerge from these efforts? Absolutely not. These initiatives deserve our full support. Still, even more will be needed. A first step in many programs will be finding ways to get teachers to think systematically about educational issues; to realize that there are choices available in what they do and that there is often a decent rationale for selecting among the available choices. We don't need to be waiting for new evidence or for expert groups to help us assess the considerable body of evidence and many good ideas that are already available.

We know that learners need to be actively involved in shaping their own programs. We know that they need to actually practice the capabilities that they are meant to acquire, not just hear about them or observe others doing them. We know that they need constructive, supportive feedback on the efforts they make. We know that they need to become open to and effective at assessing their own performance. And we know that they will learn best in an atmosphere where they feel they can trust their teachers to be their advocates, not their adversaries (Westberg & Jason, 1993). What is missing, for now, is a sufficient number of administrators, policy-makers, and teachers who care enough about these principles, who consider our learners and our educational programs centrally important, and who are willing to acknowledge that there is a substantial difference between unexamined assumptions and good thinking.

We should be grateful to the Campbell Collaboration, to AMEE, and to others for the initiatives they are taking and the contributions their efforts will make. But we shouldn't be sitting around doing business as usual while waiting for the results of BEME and other projects. We have lots that can be done right now with what we already know.

## Note

1. This is entirely analogous to the individualized decision-making needed in clinical care, which has caused some practitioners to express concern about the limitations of EBM (e.g. Fischer, 1999).

Hilliard Jason, MD, EdD  
Editor, *Education for Health*

## References

- BALDWIN, D.C. JR., DAUGHERTY, S.R. & ECKENFELS, E. (1991). Student perceptions of mistreatment and harassment during medical school: a survey of ten schools. *Western Journal of Medicine*, 155, 140–145.
- CHALMERS, I. (1993). The Cochrane Collaboration: preparing, maintaining, and disseminating systematic reviews of the effects of health care. *Annals of the New York Academy of Science*, 703, 156–165.
- DAUGHERTY, S.R., BALDWIN, D.C. JR. & ROWLEY, B.D. (1998). Learning, satisfaction, and mistreatment during internship: a national survey of working conditions. *JAMA*, 279, 1194–1199.
- DAWES, M., DAVIES, P., GRAY, A., MANT, J., SEERS, K. & SNOWBALL, R. (1999). *Evidence-based practice*. Churchill Livingstone.
- FISCHER, P.M. (1999). Evidentiary medicine lacks humility. *Journal of Family Practice*, 48, 345–346.
- HAFFERTY, F.W. (1998). Beyond curriculum reform: confronting medicine's hidden curriculum. *Academic Medicine*, 73, 403–407.
- HARDEN, R.M., GRANT, J., BUCKLEY, G. & HART, I.R. (1999). Best evidence medical education. *Medical Teacher*, 21, 553–562.

- SACKETT, D.L., ROSENBERG, W.M.C., GRAY, J.A.M., HAYNES, R.B. & RICHARDSON, W.S. (1996). Evidence-based medicine: what it is and what it isn't. *British Medical Journal*, 312, 71–72.
- WESTBERG, J. & JASON, H. (1993). *Collaborative clinical education: the foundation of effective health care*. New York: Springer.