

From Evidence to Practice in the United States, the United Kingdom, and Canada

JONATHAN LOMAS, JANE E. SISK,
and BARBARA STOCKING

*McMaster University, Canada; Columbia University, United States;
King's Fund Centre, United Kingdom*

The mere knowledge of a fact is pale; but when you come to *realize* a fact, it takes on color. It is all the difference of hearing of a man being stabbed to the heart, and seeing it done.

Mark Twain, *A Connecticut Yankee*, 1889

MEDICAL TEXTBOOKS ARE FULL OF FACTS. FACTS that contribute significantly to the pale “mere knowledge” of practitioners: in a recent survey, practicing physicians reported that medical textbooks were their principal written source of clinical facts (Covell, Uman, and Manning 1985). How to give those facts color, to move them from knowledge in practitioners’ heads to realized behaviors at their fingertips, is the subject of the following articles. We address the issue of increasing the role of research evidence, as presented in an innovative and new concept of “medical textbook,” in the divergent clinical practice environments of the United States, the United Kingdom, and Canada.

However, before justifying the need to put effort into the translation of knowledge into behavior (after all, doesn’t the one lead inexorably and inevitably to the other?), we must face an ethical issue. Targeted

and aggressive efforts to implement truths and validated facts into clinical practice are ethically defensible. Equivalent efforts to encourage the use of untruths and invalid facts as the basis for clinical practice are both ethically questionable and potentially injurious to patients. Unfortunately, the validity of many of the facts found in traditional medical textbooks is far from established. In an appraisal of the clinical advice offered by a sample of general medical textbooks, much was found to be either outdated or even wrong—that is, unsupported by or missing the most recent valid research evidence (Sackett et al. 1991, 338–40; Antman et al. 1992). Implementing the clinical implications in these textbooks might well do more harm than good.

Enter *Effective Care in Pregnancy and Childbirth* (ECPC) by Chalmers, Enkin, and Keirse (1989). This is a new concept for a medical textbook. Indeed, it is more than a textbook; it is also a pocket paperback and an electronic database that is routinely updated. Its major distinguishing characteristics are timeliness and close adherence to the principle of methodologically sound research as the determining factor for practical clinical advice. The article by Chalmers, Enkin, and Keirse, the first in this *Milbank Quarterly* issue on ECPC, gives a history of the development of the project that constitutes this new concept, as well as some insights into its underlying philosophy.

The aim of ECPC is to determine the most effective methods of care during pregnancy and childbirth. To this end, the editors provide overviews of data from the available controlled trials in which alternative forms of obstetric care have been formally evaluated. Evidence about the effectiveness of those methods—both pro and con—is presented, along with their implications for clinical practice and research. This information is provided in the form of a continually updated electronic publication, a two-volume treatise, and an inexpensive paperback publication that contains the conclusions of the parent works. The core of “advice” is captured in four appendices, at the conclusion of each of the texts, with the following titles:

- Forms of care that reduce negative outcomes of pregnancy and childbirth
- Forms of care that appear promising, but require further evaluation
- Forms of care with unknown effects, which require further evaluation
- Forms of care that should be abandoned in the light of the available evidence

With such effort expended on assuring the quality of the clinical advice within its covers (or on its diskettes), why be concerned about whether practitioners will adopt the advice? Won't ECPC just sell itself? Unfortunately, there is a substantial literature indicating that the answer to this question is no. As Mark Twain points out, adding color to pale knowledge appears all too frequently to be necessary if information is to translate into changes in behavior.

Awareness of this state of affairs in clinical medicine has been accelerated by two occurrences. First, cost-containment and quality assurance concerns have triggered interest in what it takes to change physician behavior (Eisenberg 1986). Second, motivated by the need to synthesize the burgeoning biomedical research literature, there has been explosive growth in the the development and evaluation of practice guidelines as a component of medical practice (Audet, Greenfield, and Field 1990). Evaluations of the latter phenomenon have shown that dissemination of scientifically valid advice does not necessarily bring about timely changes in inappropriate clinical practices—indeed it does so only rarely (Kosecoff et al. 1987; Hill, Levine, and Whelton 1988; Lomas et al. 1989; Mugford, Banfield, and O'Hanlon 1991; Lomas 1991). Reviews based on literature about changing physician behavior reveal that, under most circumstances, physician, and more broadly, provider behavior is remarkably resistant to change (Stocking 1985; Schroeder 1987; Lomas and Haynes 1988; Green and Eriksen 1988; Kanouse and Jacoby 1988; Kanouse 1989; Stafford 1990; Siu and Mittman 1991; Epstein 1991).

In our three country-specific implementation articles that follow the description of ECPC, we largely assume, on the basis of all this literature, that more than the publication and distribution of ECPC will be needed if its content is to influence clinical practice. In arriving at our proposals for the implementation of ECPC, we draw, implicitly and sometimes explicitly, upon the related literature characterizing the process of provider behavior change (Coleman, Katz, and Menzel 1966; Greer 1977; Geertsma, Parker, and Whitbourne 1982; Rogers 1983; Winkler, Lohr, and Brook 1985; Greer 1988; Fox, Mazmanian, and Putnam 1989).

The importance of all these literatures has been highlighted by the policy attention now being given to demonstrations of large proportions of inappropriate (i.e., not evidence-based) clinical practice in our health care systems and to the lack of tools available to address this concern. The Agency for Health Care Policy and Research in the United States has not only set up an entire research program based on the policy concern,

but has also invested considerable resources in conferences and bibliography preparation to increase general awareness of the challenge (Agency for Health Care Policy and Research 1992). We hope that the following articles, coming out of a Milbank Policy Review, will not only offer specific opportunities for the implementation of ECPC, but will also contribute some generalizable insights into the larger challenge of increasing the proportion of evidence-based clinical practice in modern health care systems.

References

- Agency for Health Care Policy and Research. 1992. *Annotated Bibliography: Effective Dissemination to Health Care Practitioners and Policymakers*. AHCPR pub. no. 92-0030. Washington.
- Antman, E.M., J. Lau, B. Kupelnick, F. Mosteller, and T.C. Chalmers. 1992. Comparison of Results of Meta-analyses of Randomized Controlled Trials and Recommendation of Clinical Experts: Treatments for Myocardial Infarction. *Journal of the American Medical Association* 268:240-8.
- Audet, A.-M., S. Greenfield, and M. Field. 1990. Medical Practice Guidelines: Current Activities and Future Directions. *Annals of Internal Medicine* 113:709-14.
- Chalmers, I., M.W. Enkin, and M.J.N.C. Keirse. 1989. *Effective Care in Pregnancy and Childbirth*. Oxford: Oxford University Press.
- Coleman, J.S., E. Katz, and H. Menzel. 1966. *Medical Innovation: A Diffusion Study*. Indianapolis: Bobbs-Merrill.
- Covell, D.G., G.C. Uman, and P.R. Manning. 1985. Information Needs in Practice: Are They Being Met? *Annals of Internal Medicine* 103:596-9.
- Eisenberg, J.M. 1986. *Doctors' Decisions and the Costs of Medical Care*. Ann Arbor, Mich.: Health Administration Press.
- Epstein, A.M. 1991. Changing Physician Behavior. Increasing Challenges for the 1990s. *Annals of Internal Medicine* 151:2147-9.
- Fox, R.D., P.E. Mazmanian, and R.W. Putnam. Eds. 1989. *Changing and Learning in the Lives of Physicians*. New York: Praeger.
- Geertsma, R.H., R.C. Parker, and S.K. Whitbourne. 1982. How Physicians View the Process of Change in Their Practice Behavior. *Journal of Medical Education* 57:752-61.
- Green, L.W., and M.P. Eriksen. 1988. Behavioral Determinants of Preventive Practices by Physicians. *American Journal of Preventive Medicine* 4(suppl.):101-7.

- Greer, A.L. 1977. Advances in the Study of Diffusion of Innovation in Health Care Organizations. *Milbank Memorial Fund Quarterly/Health and Society* 55:505-32.
- . 1988. The State of the Art versus the State of the Science: The Diffusion of New Medical Technologies into Practice. *International Journal of Technology Assessment in Health Care* 4:5-26.
- Hill, M.N., D.M. Levine, and P.K. Whelton. 1988. Awareness, Use, and Impact of the 1984 Joint National Committee Consensus Report on High Blood Pressure. *American Journal of Public Health* 78:1190-4.
- Kanouse, D.E. Ed. 1989. *Changing Medical Practice through Technology Assessment. An Evaluation of the NIH Consensus Development Program*. Ann Arbor, Mich.: Health Administration Press.
- Kanouse, D.E., and I. Jacoby. 1988. When Does Information Change Practitioners' Behavior? *International Journal of Technology Assessment in Health Care* 4:27-33.
- Kosecoff, J., D.E. Kanouse, W.H. Rogers, L. McCloskey, C.M. Winslow, and R.H. Brook. 1987. Effects of the National Institutes of Health Consensus Development Program on Physician Practice. *Journal of the American Medical Association* 258:2708-13.
- Lomas, J. 1991. Words without Action? The Production, Dissemination, and Impact of Consensus Recommendations. *Annual Review of Public Health* 12:41-65.
- Lomas, J., and R.B. Haynes. 1988. A Taxonomy and Critical Review of Tested Strategies for the Application of Clinical Practice Recommendations: From "Official" to "Individual" Clinical Policy. *American Journal of Preventive Medicine* 4(suppl.):77-94.
- Lomas, J., G.M. Anderson, K.D. Pierre, E. Vayda, M.W. Enkin, and W.J. Hannah. 1989. Do Practice Guidelines Guide Practice? The Effect of a Consensus Statement on the Practice of Physicians. *New England Journal of Medicine* 321:1306-11.
- Mugford, M., P. Banfield, and M. O'Hanlon. 1991. The Effect of Feedback of Information on Clinical Practice: A Review. *British Medical Journal* 303:398-402.
- Rogers, E.M. 1983. *Diffusion of Innovations*, 3d ed. New York: Free Press.
- Sackett, D.L., R.B. Haynes, G.H. Guyatt, and P. Tugwell. 1991. *Clinical Epidemiology: A Basic Science for Clinical Medicine*, 2d ed. Boston: Little Brown.
- Schroeder, S.A. 1987. Strategies for Reducing Medical Costs by Changing Physicians' Behavior: Efficacy and Impact on Quality of Care. *International Journal of Technology Assessment in Health Care* 3:39-50.

- Siu, A.L., and B.S. Mittman. 1991. Implementing the Findings from Effectiveness and Outcomes Research. Paper presented at the National Agenda-Setting Conference on Outcomes and Effectiveness Research, Arlington, VA, April 14-16.
- Stafford, R.S. 1990. Alternative Strategies for Controlling Rising Cesarean Section Rates. *Journal of the American Medical Association* 263: 683-7.
- Stocking, B. 1985. *Initiative and Inertia. Case Studies in the NHS*. London: Nuffield Provincial Hospitals Trust.
- Winkler, J.D., K. Lohr, and R. Brook. 1985. Persuasive Communication and Medical Technology Assessment. *Archives of Internal Medicine* 145:314-17.

Address correspondence to: Jonathan Lomas, Coordinator, Centre for Health Economics and Policy Analysis, Health Sciences, Room 3H1D, McMaster University, Hamilton, Ontario, Canada, L8N 3Z5.