

**Commentary:
“Clinical Evidence”**

Michael L. Millenson
2735 Fort Sheridan Avenue
Highland Park, IL 60035
m-millenson@northwestern.edu

The plain purpose of *Clinical Evidence* is to help physicians practice evidence-based medicine. But regarded from a different angle, this volume also represents the convergence of a series of powerful technological, social and economic forces that are in the process of transforming the clinical environment.

To take the most obvious example, the *Clinical Evidence* format illustrates the changing technology of decision support. The traditional hardback reference tome, anchored to an office bookshelf, has given way to a slim paperback designed to be both portable and timely; it's updated twice a year. The paper version, though, is clearly a transitional one. *Clinical Evidence* is also available in a searchable online version with expanded content, continual updating and the ability to be downloaded to a PDA. In an era where X-ray images are stored on iPods, it would be easy enough to convert digitized content to spoken text, add a background beat and thereby produce the first evidence-based medicine rap number.

More important than the delivery mode, however, is that today's static information is evolving into customized, point-of-care guidance. Population-based medicine and personalized medicine are converging, and intelligent decision-support systems will provide individualized therapeutic recommendations by using inputs ranging from the classic history and physical to electronic entry of key physiologic data to disease-specific genetic markers. The physician, in turn, will feed back the results of implementing those recommendations in order to refine the evidence base. In this manner, evidence-based medicine will eventually become an integral, as well as interactive, part of the clinical routine.

Yet *Clinical Evidence* and its successors will remain guidebooks, not rulebooks. The merger of informatics and evidence analysis will enhance, not eviscerate, the art of medicine. As the brilliant 19th-century clinician Sir William Osler put it: "From the standpoint of medicine as an art for the prevention and cure of disease, the man who translates the hieroglyphics of science into the plain language of healing is certainly the more useful."¹ In the 21st century, machine will be helping man (and woman) to fulfill Osler's wish.

Clinical Evidence also reflects the rapidly changing social context of medical practice. A little over a decade ago the *BMJ* asked physicians "to promote the uptake of innovations that have been shown to be effective, to delay the spread of those that have not yet been shown to be effective and to prevent the uptake of ineffective innovations."² Today, physicians find themselves asked to share that responsibility with an assortment of other organizations and individuals, not least of which is the patient.

Consumers Union, publisher of the highly regarded *Consumer Reports*, recently launched MedicalGuide.org, a "continually updated health research Web site" to help individuals compare (for a small yearly fee) the evidence supporting various treatment options. Their evidence is *this* evidence: Consumers Union's partner is the BMJ group that publishes *Clinical Evidence*. The same Web site offers patient decision-making guides produced by the American Society of Health-System Pharmacists.

This is hardly the only example of the dissolution of the barriers separating professional and public knowledge. For instance, the Web sites of the American Cancer Society, American Heart Association and American Lung Association contain links to a "profiler" that lets patients enter detailed clinical data and receive a personalized guide to what the medical literature recommends for "patients like me." Other Web-based diagnostic and treatment tools bear the most famous brand names in medicine, such as Harvard and Mayo.

The Information Age is to medicine as the Protestant Reformation was to the Catholic Church, opening up to the lay public the secrets once held tightly by the priests. The Catholic Church, of course, did not cease to exist, but it did have to adapt. The widespread dissemination of *Clinical Evidence* in both its physician and consumer forms constitutes an implicit warning to the medical priesthood that it must make a similar adaptation. Only 54 percent of

the acute care and 56 percent of the chronic care provided by physicians conforms to the medical literature, and the procedure-specific rates at even the “high end” (e.g., 76 percent for breast cancer) do not inspire much confidence.³ Is it any wonder that the public, payers and policymakers increasingly see ensuring the practice of evidence-based medicine as too important to be left to the medical profession to implement on its own slow schedule?

These profound technological and social changes have equally profound economic implications. In his seminal 1963 essay explaining why medicine differed from other economic goods, the economist Kenneth Arrow wrote: “The social obligation for best practice is part of the commodity the physician sells, even though it is a part that is not subject to thorough inspection by the buyer.”⁴ In the Information Age, the second part of that sentence is fast losing its validity. The Consumer-Driven Health Care, Value Purchasing and Pay-for-Performance movements all grow out of the belief that there is a financial as well as clinical reward from re-aligning provider financial incentives around adherence to evidence-based medicine principles. As the Institute of Medicine concluded, there is a “growing body of evidence that quality improvement can translate into cost savings.”⁵

Indeed, *Clinical Evidence* traces its roots to the intersection of clinical and economic concerns. The British epidemiologist Archie Cochrane, widely seen as the founding father of evidence-based medicine, suggested in the early 1970s a slogan to illustrate the social benefit of providing only appropriate care: “All effective treatment might be free.”⁶ Today’s reformers more modestly suggest they could trim some \$500 billion from this country’s \$1.7 trillion annual health care budget.

In 18th-century France, the reformers who used careful statistical analysis to investigate such questions as the precise number of individuals dying from infectious diseases coined a phrase for their work. They called it, “moral statistics.” Evidence-based medicine is not a panacea; in many instances, we have inadequate evidence. In other cases, the patient’s preferences must play a large role in the ultimate decision. Still, *Clinical Evidence* and the evidence-based medicine movement as a whole ultimately draw their strength from a great moral tradition that transcends quantitative quibbling.

The ongoing changes in the technological, social and economic underpinnings of clinical practice are an understandable source of anxiety, for they bring with them the destruction of old and comfortable assumptions. Yet destruction often precedes renewal, and it is in that renewal that the future of American medicine lies.

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Michael L. Millenson is the Mervin Shalowitz, MD Visiting Scholar at the Health Industry Management Program of the Kellogg School of Management and the author of *Demanding Medical Excellence: Doctors and Accountability in the Information Age*.

¹ WB Bean, ed. Sir William Osler: Aphorisms from his bedside teachings and writings. Collected by Robert Bennett Bean, MD (1874-1944). www.vh.org/adult/provider/history/osler/5.html#b (accessed 11 May 2005).

² From innovation to evaluation. *BMJ* 1995;311:961.

³ McGlynn EA, Asch SM, Adams J, et al. The quality of health care delivered to adults in the United States. *N Engl J Med* 2003;348:2635-2645.

⁴ Arrow, K. Uncertainty and the welfare economics of medical care. *American Economic Review* 1963; 53:941-973.

⁵ Institute of Medicine. *Crossing the quality chasm: A new health system for the 21st Century*. Washington, DC: National Academy Press. 2001;203.

⁶ Cochrane, AL. Effectiveness and efficiency: Random reflections on health services. London: Nuffield Provincial Hospitals Trust, 1971:60-61.

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