



## Evidence-Based Medicine: A Tool at the Point of Care

**U**NTIL RECENTLY, physicians practiced medicine autonomously with almost complete sovereignty over their actions. Over the past half-century this situation has changed. Payers have sought to control spending. Health care organizations search for tools that can help reduce the variability in the patient care process so that they can improve quality and control the cost of delivering care. In fact, Blue Cross of California recently established a bonus plan for physicians based upon specific quality measures. Patients also want greater control over their treatments. All of these individuals and organizations have one goal in mind: improve the quality of medical care. Applying validated therapies through the application of evidence-based medicine is one proven way to improve health care outcomes while conserving resources.

### Clinical Content: Key Ingredient

One of the major components in applying evidence-based medicine is clinical content. Clinical content forms the underpinnings of the care delivered to patients by physicians and other caregivers. Clinicians use their clinical knowledge, obtained from years of training, personal clinical experiences, and ongoing medical education (for example, continuing medical education, colleagues, etc.), to make diagnostic and treatment decisions. This clinical content is described as implicit, meaning that the content is not directly observable. In the course of delivering care, implicit clinical content is regularly used due to its inherent efficiency. Since it is readily available, implicit clinical content often becomes a caregiver's personal standard of care.

Unfortunately, exclusive use of implicit criteria can produce poor outcomes through the use of outdated methods of care planning. Implicit criteria evolve randomly over time and are not checked regularly for currency and applicability. To deliver quality care and achieve the best outcomes, it is necessary to combine open and observable explicit clinical content with implicit criteria.

Explicit clinical content functions as the true backbone of medicine today. Explicit clinical content

is directly observable, easily evaluated, and reproducible. Although it may contain specific clinical opinions or impressions, those opinions are known (meaning observable) and can be evaluated by anyone. Explicit clinical content provides the foundation for evidence-based medicine and the delivery of efficient and effective clinical interventions.

### Definitions of Evidence-Based Medicine

Some consider medical literature synonymous with evidence-based medicine. This is a limited view that does not appreciate the importance that clinical experience and expertise plays in the delivery of patient care. The Centre for Evidence Based Medicine defines evidence-based medicine as: "The conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996)

This definition captures the promise of evidence-based medicine by including the clinical experience as part of the care decision process. Clinicians acutely understand that clinical studies offering great promise as outlined in research done at specific institutions cannot always be practically applied at other venues. This is often due to local competencies, available resources, and cultural differences. Including local clinical experience in the development of evidence-based medicine guidelines helps ensure that the clinical value of controlled studies can be transferred to real-world settings.

### Sources of Evidence-Based Medicine

Most clinicians obtain access to clinical content through sources such as Medline. However, difficulties in using such systems make its use sporadic at best. In reality, the learning curve to effectively use Medline and other medical literature search engines is steep, and its use is not very practical in the fast-paced world of patient care.

Clinical content must be put into a format that matches the workflow of patient care. This requires the conversion of clinical studies and experience into a format that matches the problems faced by clinicians treating patients. Evidence-based medicine, therefore, comes in the form of guidelines that are disease or problem-specific, and offer flexibility to assist

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the clinician in delivering care.

Although guideline development is undertaken by many organizations around the world, several stand out for their focus on evidence-based medicine.

*The Agency for Healthcare Research and Quality* (formerly known as the Agency for Health Care Policy and Research). Under the federal Department of Health and Human Services, AHRQ launched an initiative in 1997 to promote evidence-based practice in everyday care. AHRQ established 12 Evidence-Based Practice Centers (EPCs) to develop evidence reports and technology assessments on clinical topics that are common, expensive, and/or are significant to the Medicare and Medicaid populations. AHRQ works to facilitate the transition of evidence-based research findings into clinical practice. Information about current projects is available on AHRQ's Website, [www.ahrq.gov](http://www.ahrq.gov). Additionally, a clearinghouse for AHRQ's guidelines is available at [www.guidelindes.gov](http://www.guidelindes.gov).

*The Cochrane Centre*. This opened in Oxford, England in 1992 as an international organization that aims to help people make well-informed decisions about health care by preparing, maintaining, and ensuring the accessibility of systematic review of the effects of health care interventions. This is done through the systematic review of randomized controlled trials across all areas of health care. The Centre was initially founded to assist the National Health Service in the United Kingdom. Today, the Centre works collaboratively with other research institutions to disseminate evidence-based medicine.

Other institutions that are resources for evidence-based medicine include the Centre for Evidence Based Medicine, located in the United Kingdom; the Health Information Research Unit, located at McMaster University in Canada; and the Evidence-Based Resource Center affiliated with the New York Academy of Medicine Library and the American College of Physicians, New York Chapter.

### Applying Evidence-Based Medicine.

Access to clinical content at the point of care is as important as the development of useful and practical evidence-based medicine guidelines. Historically, guidelines have been deployed with very limited results. The nature of clinician workflow requires the clinical content to be presented in a format that matches that workflow; otherwise the guidelines never reach the caregiver to affect the care delivery. Heavy patient loads do not offer clinicians much time to access most clinical content, whether that be in the form of paper guidelines, medical textbooks, or Medline searches during care delivery.

With the advent of computerized physician order entry systems and the integration of legacy systems through new technologies and computer architectures, clinical decision makers are getting their first opportunity to effectively apply evidence-based guidelines to patient care. Using these tools, disease-specific, evidence-based guidelines can be presented proactively as part of the clinical decision process, thereby influencing the care that is delivered. Clinical content at the point of care is the natural workflow of the clinician, and it allows for easy application to the current patient. In addition, these electronic versions of evidence-based medicine are automating many processes such as pharmacokinetic calculations, drug-error checking, and Centers for Medicare/Medicaid Services (formerly HCFA) documentation compliance checking.

By incorporating evidence-based medicine at the point of care, clinicians can now access the best available clinical content when making treatment decisions. As medical treatments change, these same workflow interfaces can deliver the new clinical content through revised evidence-based clinical guidelines. Clinicians are able to apply this new knowledge without having to change their basic care processes. In paper-based systems, extensive education and training would be necessary to affect behavior change and maintain those gains. Incorporating evidence-based medicine at the point of care allows for the inclusion of education while eliminating the need for special training. Without such an integrated approach to offering content, it is unlikely that the clinician would access and then apply most newly delivered evidence-based medicine guidelines.

### Summary

Evidence-based medicine offers great promise in delivering cost-effective health care to an increasingly educated, consumer-wise, patient population. The enormous growth in clinical knowledge makes it impossible for any clinician to remain current. Only through the systematic development of evidence-based medicine guidelines and their deployment through clinical information technology tools can we effectively deliver quality patient outcome at an affordable cost. \$

### REFERENCES

- Sackett, D.L., Rosenberg, W.M.C., Gray, J.A., Haynes, R.B., & Richardson, W.S. (1996). Evidence based medicine: What it is and what it isn't. (Electronic version). *British Medical Journal*, 312, 71-72.