

## EVIDENCE-BASED PRACTICE IS WONDERFUL ... SORT OF

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**W**hat should nurses do in caring for intubated patients to prevent ventilator-associated pneumonia? What is the most effective way to suction patients who are ventilator dependent? Should patients experiencing acute coronary syndrome be given thrombolytics or just be whisked to the catheterization laboratory for a cardiac angiogram, angioplasty, and stent? Should all diabetic patients, regardless of their lipid levels, receive statin therapy? What is the best way to prevent wound infections in high-risk patients? Can pressure ulcers be prevented in comatose patients?

The answers to all of these questions are known and well documented in the literature. Every day, clinicians—nurses, physicians, respiratory therapists, and others—confront difficult questions about caring for acutely ill patients. We want to know how to interpret a diagnostic test accurately, how to predict the prognosis of a specific patient, how to identify the comparative effectiveness of 2 therapeutic interventions, and how to compare the costs of our various options. Clinicians, the public, and policy makers all need to know the most effective care—from a clinical and cost perspective—for a patient hospitalized in an acute care setting. Increasingly, the answers to these questions are found in the guidelines that have evolved from systematic research.

### Changing Hospital Culture

Evidence-based practice, which is often referred to as evidence-based nursing or evidence-based medicine, is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.<sup>1</sup> It involves integrating the individual clinical expertise of the physician or nurse

with the best available external clinical evidence from systematic research and individual patient preferences.<sup>2</sup> Research shows that patients' outcomes are at least 28% better when clinical care is based on evidence rather than tradition or common sense.<sup>3</sup>

Committing to evidence-based practice reflects a sea change in hospital culture. Several decades ago, physicians were the final authority controlling patient care; they delegated much of that authority to nurses in the hospital setting through the mechanism of "doctors' orders" and hospital-approved protocols. The latter are still the mainstay of care in the intensive care unit (ICU) and the legal foundation of nurse practitioner practice in many states. Increasingly, however, clinicians base practice on the evidence accumulated through systematic research. Physicians, nurses, policy makers, and members of the public share the same evidence base, and this reality is changing the dynamics of power and accountability in hospitals.

Historically, decisions about patient care were based primarily on the clinical expertise of practitioners who had evolved from novices to experts. When these individuals were nurses, they were the treasure of their hospital unit and their clinical assessments and decisions served as the guide for less experienced colleagues. When the individuals were physicians, they were the wise diagnosticians and the interventionists who rarely erred in identifying a patient who would benefit from a procedure.

But the paradigm has changed dramatically in the past 20 years. Now clinicians—nurses *and* physicians—recognize that optimal decision making is based on empirical data, clinical acumen, and individual patients' characteristics. Knowledge about these data must be shared among all members of the team if patients are to have optimal outcomes and errors are to be avoided. Ultimately, the patient is the source of control in this new paradigm in which evidence is king (or queen). Randomized controlled

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trials, meta-analyses, and systematic reviews of multiple studies are the new currency of patient care, with research providing the foundation for safe practice and Google the gateway to all knowledge.

Today we have a great deal of evidence to assist clinicians, patients, and policy makers. Thousands (perhaps millions) of Web sites, online journals, and textbooks are available to meet the need for data-based decisions in the hospital setting. A stunning example of the conclusions that can be drawn from research-based processes is provided by the Cochrane Collaboration, which is a worldwide network of centers launched in 1995.<sup>4</sup> The center, based in England, has become a definitive source for evidence-based practice. Their publication is updated quarterly and contains several separate databases as well as excellent position papers defining best practices. Other sources are nonprofit, specialty organizations such as the American Association of Critical-Care Nurses and the federal government. Both convene groups of experts to review the latest research and to develop appropriate clinical guidelines.

Clinicians are expected to use evidence to choose between alternative treatments and to structure the processes of care. Patients and their families can access the same evidence, which may lead to a heightened sense of control and aid them in making difficult choices about various care options. Policy makers can refer to the available evidence to analyze the costs of health-care and determine what the government and third-party payers will support.

### Sort of ...

So why is evidence-based practice only “sort of” wonderful? Three reasons for caution are often suggested to temper too much euphoria about the adoption of evidence-based practice. First, the evidence on which decisions are based is developed from clinical trials with highly homogeneous samples. If a clinical trial enrolls only males aged 40 to 60 years without a complicating comorbidity, it is difficult to imagine that the study’s results will apply to an 85-year-old African American woman with multiple comorbidities such as heart disease, osteoarthritis, hypertension, and mild dementia. Yet these are the people we generally see in our hospitals. Many of those for whom we seek answers do not resemble the average research subject in a clinical trial. This fact makes the application of evidence suspect in many cases.

Second, evidence is lacking for many of the questions that arise in clinical practice. This lack of clinical evidence is certainly true in medicine, but it is even truer in nursing, where scientific inquiry designed to

answer clinical questions is a fairly recent development. The National Institute of Nursing Research, for example, was founded in 1986. The tradition of preparing nurses to conduct clinical research is much newer than it is in medicine. Historically, a very small cadre of nurse scientists have asked questions pertinent to acute care practice, which means that many of the questions that arise in patient care every day go unanswered. For evidence-based nursing to make a difference in care, we need many more nurse scientists exploring clinical questions that have come from their experiences in practice.

Finally, though the concept of evidence-based practice includes patients’ preferences, patients may feel excluded from the process.<sup>5</sup> The concept of evidence-based practice often appears antithetical to patient-centered care, even though patients’ preferences are supposed to be a critical component of any decision. Evidence-based medicine is disease-oriented or based on protocols; it is not designed to answer the question, “What is the best treatment or procedure for this patient at this particular time?”

An additional barrier to implementing evidence-based nursing is presented in this issue of the journal; namely, the time spent by nurses implementing a protocol. The issue is a concern that is rarely discussed in the literature, but it is very important in an environment with ever-decreasing resources. In “Evaluation of Nursing Work Effort and Perceptions About Blood Glucose Testing in Tight Glycemic Control,” Aragon<sup>6</sup> provides an excellent example of the consequence of adopting a procedure—blood glucose testing and tight glycemic control—that is clearly supported with appropriate evidence but has tremendous implications for nurses caring for critically ill patients. The author reviews the evidence and makes a convincing case that glycemic control results in decreased complications, shorter hospital stays, and reduced mortality. Why wouldn’t we want to incorporate this practice into every ICU?

What is *not* considered in studies documenting the effectiveness of this important practice is the cost in nursing time. Dr Aragon found that patients having hourly blood glucose monitoring to achieve tight glycemic control required nearly 2 additional hours of nursing care every 24 hours. Every hour, nurses must obtain a blood sample (through an arterial catheter, central venous catheter, or finger stick), test it using a glucometer, make appropriate adjustments in insulin therapy, and document the results of this activity. She estimated that in the 4 ICUs studied, the implementation of this single evidence-based practice costs \$250 000 annually.

What is the lesson from this single example of evidence-based practice? The recommended practice of tight glycemic control has been adopted by many hospitals across the United States and is clearly in the best interests of the patient, but it is difficult to incorporate into ICU care. We believe that evidence-based practice must always include an assessment of the available resources. Nurses must be assertive in asking about the cost of any adoption and they also must work with industry, whenever appropriate, to develop technology to reduce the burden of that adoption.

This recommendation is not new. In one study, 400 Australian nurses were asked to identify barriers to the use of research evidence in practice.<sup>7</sup> They identified the following: accessibility of research findings, anticipated outcomes of using research, organizational support to use research, and support from others to use research. Organizational support is critical to the enterprise; in fact, it was the factor identified by respondents as the most important to their use of research in practice. Nurse-patient ratios must be appropriate for the kind of procedures that

evolve from evidence-based practice.

Evidence-based practices will not be adopted if resources are insufficient to incorporate them into the daily routine of the nurse caring for the patient. In the future, researchers would be advised to incorporate cost of implementation into any protocol that involves nursing care. Hospital administrators must factor into the adoption scheme of best practices the potential barriers that accompany changes in nursing practice.

The statements and opinions contained in this editorial are solely those of the Editors.

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