

Evidence-Based Medicine and Knowledge Translation: Horse and Carriage

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Evidence-based medicine (EBM) has come a long way since its clarion call 15 years ago¹, but we are still in the early days of realizing its full potential. As individual practitioners, we can do a lot to practice evidence-based medicine with our own patients. But we could do this more consistently for all patients by creating a knowledge translation infrastructure. Such an infrastructure would facilitate consistent achievement of evidence-based care objectives. If evidence-based medicine is a horse, then knowledge translation can be thought of as a carriage. To advance the state of the art of applying evidence in clinical practice, we need more than individual practitioners riding the evidence horse: we need to build an organizational carriage so that all patients can benefit.

EBM is defined as the integration of the best available evidence from health care research with our clinical expertise and our patients' unique values and circumstances². Though some have regarded EBM as a threat to clinical expertise or patient autonomy, it was proposed from the beginning as a tool to help practitioners and their patients make decisions that are most likely to optimize clinical outcomes. Below, I'll illustrate how EBM is missing the mark—and what we can do to improve practice—with an example, venous thromboembolism (VTE) prophylaxis in hospitalized patients.

Randomized clinical trials have shown that a number of interventions are effective, safe, and cost-effective for reducing the risk of VTE in hospital settings.^{3, 4} Evidence-based guidelines for identifying patients for VTE prophylaxis are widely accepted by professional bodies and expert task forces around the world, and are seemingly straightforward to implement. Unfortunately, surveys of hospitalized patients have shown that less than 30% of eligible patients receive VTE prophylaxis.⁵ This disjunction between evidence-based recommendations and usual practice for VTE prophylaxis for hospitalized patients provides a powerful object lesson for those who believe that EBM has become standard practice. Why does this disparity exist?

A multitude of reasons exist for failure to implement indicated VTE prophylaxis. Some of these are listed below in Table 1.

Table 1. Examples of Barriers to Implementation of EBM

Barriers	Example: VTE prophylaxis
Competing urgent or complex health problems	VTE prophylaxis may be a secondary healthcare priority in patients with serious illness.
Adverse effects of treatment	VTE drug prophylaxis increases the risk of bleeding.
Organizational deficits such as time constraints, understaffing or lack of reliable prompts or audits	VTE prophylaxis is not always integrated into care maps for high-risk populations.
Inconvenience of administering or monitoring interventions	It may be difficult to ensure early mobilization, use of anti-embolic stockings or administering of anticoagulants.

It is easy to appreciate that the key barriers to prescribing VTE prophylaxis are at the local and organizational levels. But if patients develop VTE while in the hospital, staffing and institutions become even more strained. Coping with the challenges is the only reasonable option.

Deborah Cook and her colleagues⁶ have shown that a carriage can be built to effectively deliver VTE prophylaxis in critical care settings. The carriage in this case included a) interactive multidisciplinary educational in-services; b) verbal reminders to the intensive care unit team; c) computerized daily nurse recording of thromboprophylaxis; d) weekly graphic feedback to individual intensivists on guideline adherence; and e) publicly displayed graphic feedback on group performance. The result was close to 100% implementation, which was sustained at 10 months of follow-up.

Whether this carriage would work in general medical wards, where the staffing is considerably thinner, and responsibilities for care are more divided, remains to be seen – indeed it is likely that a different kind of carriage will be needed and that this must be customized for the staff and resources available in each clinical setting. This knowledge translation step is the current frontier of EBM.

Numerous trials of quality improvement, guideline implementation and continuing professional development for other clinical problems have shown the benefits of such interventions as clinical audit and feedback, educational influentials, computerized decision support, standing orders and management protocols, preceptorships and incentives. If some of these terms seem exotic, then the message is clear: if we are to succeed as evidence-based practitioners, we need to know not only about the current best evidence concerning the medical problems we manage, but also the evidence concerning ways to improve the quality of the care we provide. This must happen at the local level, that is, in our own personal working environments, or the promise of evidence-based health care will never be consistently realized for our patients.

Just as the quality of evidence keeps improving for many medical conditions, we can expect to see the evidence improve concerning effective and efficient ways to improve the quality of health care. We must start to build carriages, using what we currently know about knowledge translation.

References

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