In 2008, Fineout-Overholt, Stillwell, and Kent commented that educating clinicians and students about evidence-based practice (EBP) can be challenging because, for many, a cognitive paradigm shift is required. Problem solving is commonplace in practice and for the past decade efforts have been made to encourage clinicians to question practice and to base their decisions on a sound evidence base, rather than following traditional practices and relying on rituals. Unfortunately, as Lang et al. (2007) point out, the gap between best evidence and evidence-based practice remains, and patients are still not benefitting from the advances that have been made in the health-related sciences. This column explores the process of transferring knowledge gained from research into effective and sustained changes to clinical practice, policy, or education and highlights why nurse educators have a key role in helping to close the evidence-practice gap.

Research utilization (RU), knowledge utilization (KU), research transfer, knowledge transfer, implementation science, knowledge translation (KT), are all terms that have been used to describe the process, or science, behind the transfer of research-based knowledge into a form that can be used to provide effective health services. A useful Web site containing definitions of these terms is the KT Clearinghouse (http://ktclearinghouse.ca/glossary, accessed 26 May 2009). Recently, the Canadian Institutes of Health Research provided a definition that sees KT as a “dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of [Canadians], provide more effective health services and products and strengthen the health care system” (Canadian Institutes of Health Research 2008). These terms are often used interchangeably, which is confusing at times. KT is the term that is currently favored by many implementation scientists and is widely used as a keyword in articles published in many leading journals.

Understanding KT is important and fundamentally it focuses on methods or processes that can be used to increase clinicians’ practice-related knowledge and how they can use that knowledge to improve patient outcomes or health services in order to close or lessen the evidence-practice gap (Westbrook & Gagnon 2009). The science behind KT is also the focus of a great deal of research activity and, not surprisingly, called Knowledge Translation Science or Implementation Science. It is important to recognize that KT is an iterative process and not simply a static event since, particularly in health care, contextual as well as individual attitudinal changes occur that may influence process. One example of this is highlighted by changes made to blood transfusion practices in the United Kingdom. Knowledge that emerged from studies of blood transfusion practices led to the development and introduction of a national guideline for procedures for safe administration of blood in the United Kingdom (British Committee for Standards in Haematology 1999). Further iterations of these guidelines have been made as part of a concerted effort to embed these into practice, requiring changes to be made to ways of learning, local and regional policies and ultimately changes in behavior. Despite all these activities, an audit of practice (Taylor et al. 2008) revealed that, in 2005, 6% of patients receiving a transfusion had no form of patient identification (wristband or equivalent), and 13% had no transfusion-related observations recorded. These are basic aspects of patient safety and these simple failures continue to place patients at risk. Electronic systems have now been developed, based on further research, and calls have been made to have these implemented in all public hospitals in England (National Patient Safety Agency 2006).

Educators play a key role in the uptake of evidence in practice, since they facilitate ongoing professional development; professional learning and personal growth (Davis et al. 2003). Educational strategies have been used widely as a way of implementing new evidence into practice, often
in isolation, and it is now recognized that the effectiveness of these in achieving sustainable practice change, is poor (Grimshaw et al. 2004). It is now accepted that alternative, more proactive, implementation approaches must be used, such as reminders, educational outreach visits, and audit with feedback. Interestingly, this review undertaken by Grimshaw et al. (2004) found that multifaceted interventions were no more effective than single ones.

Given the emphasis on learning as a vital activity for ongoing professional development, educators can use knowledge gained from clinical research to convince clinicians about the need for practice change. Take, for example, practices that are familiar to most acute care clinicians such as preoperative fasting. Clinical guidelines for preoperative fasting were issued by the World Federation of Societies of Anaesthesiologists (Maltby 2000), which clearly stated the evidence and recommendations for practice (see the Table 1 for a summary of these).

Despite these and other guidelines, such as those issued by the Royal College of Nursing (2005), many patients continue to suffer unduly from dehydration, delayed healing and other complications. Lorch (2007) explored the implementation of these guidelines in the orthopedic setting and identified barriers to their uptake that included:

- Resistance from theatre staff and a few consultant surgeons;
- Difficulty educating night shift;
- Rapid turnover of domestic staff;
- Fear from junior doctors and nursing staff of upsetting the surgeons’ routines;
- Lack of awareness by nursing staff of free space on morning elective lists;
- Nil by mouth signs unclear.

Lorch (2007) chose to use a change model developed by Lewin (1979) that focuses on force-field analysis to implement the guidelines and sustained changes were achieved; we can learn a lot from practice examples such as this. We will discuss in more detail the theories or models that have been used to effect practice change in a later column in this section of Worldviews on Evidence-Based Nursing since there are a variety of these that can be used. In the meantime, a useful Web resource listing a number of change theory Web sites is located at the following address: http://www.nursing-informatics.com/kwantlen/wwwsites3.html (accessed 31 June 2009).

Using evidence or knowledge in a practice environment involves active inquiry (Doane & Varcoe 2008), through which current practices are questioned and answers are gained by the acquisition and application of knowledge. Understanding the context-specific barriers to evidence uptake, such as those identified by Lorch (2007), will help educators, clinicians, students, and researchers to develop strategies that will address some or all of these factors. This progresses the suggestions from Lang et al. (2007) that KT should be seen as the link between continuing education, professional development, and quality improvement, which helps to close the evidence-practice gap; or, as Gibbons (2008) sees it, KT is an engagement process.

Understanding the complexities of practice change and, in particular, achieving sustained change will help us to identify possible strategies that can be used. Issues around searching and appraising the evidence have been explored in an earlier column (Fineout-Overholt et al. 2005), as have approaches that can help us to get the transfer of evidence occurring (Fineout-Overholt & Johnston 2006). Educators play a key role in this; as knowledge brokers (Dobbins et al. 2009). Knowledge brokers serve as the link between the producers of evidence (i.e., researchers) and the users (e.g., nurses). Through their teaching and learning strategies, educators can help students to access, appraise, interpret and then, where appropriate, translate the research evidence into practice. For this they need to mobilize well-developed interpersonal, motivational, and communication skills, their familiarity with the needs of their learners, and their understanding of research production processes (Dobbins et al. 2009). This further supports the findings of a systematic review (Milner et al. 2006), which concluded that, as a result of educators’ familiarity with nursing staff, their own strong clinical background, and skills and knowledge related to specialized practice, they are well placed to take on a facilitation (broker) role for knowledge translation.

Over the coming months, we will develop the theme of KT further and focus on different strategies that educators

### TABLE 1
Summary of the preoperative fasting guidelines (Maltby 2000)

- The order “nothing by mouth after midnight” should apply only to solids for patients scheduled for surgery in the morning.
- An early light breakfast of easily digested toast or similar food with clear liquid is permissible for afternoon cases.
- Clear liquids should be allowed until 3 hours before the scheduled time of surgery so that a change in the surgical schedule can be made and still allows 2 hours before the actual time of surgery.
- For patients with true gastro-esophageal reflux, whether or not they drink, an H2-receptor blocker (ranitidine) or proton pump inhibitor (omeprazole) may be advisable to minimize gastric acid secretion.
can use to achieve sustainable knowledge translation in practice environments.

References


