



# EVIDENCE BASED MEDICINE: WHAT'S NOT TO LIKE?

by Sandra McCleaster RRT

By way of a commonly cited definition, evidence-based medicine (EBM) is the “conscientious and explicit use of current best evidence in making decisions about the care of the individual patient.” The “best evidence” of course, derives from systematic research, and because physicians are expected to base their practice on emerging evidence, searching for research has been pushed to the forefront of their practice.

It's all about outcomes. The goal of EBM is the achievement of consistently safe, quality patient care. Its proponents tell us it provides a stronger scientific foundation for the practice of medicine. It also promises to create better informed patients and clinicians because treatment options will be uniformly published and easily accessible. Plus, there are some very good side benefits that have come out of the EBM movement. One well-known common implementation of EBM involves the use of Clinical Practice Guidelines; those carefully crafted statements which help providers address the persistent problem of variations in clinical practice.

**There are some very good side benefits that have come out of the Evidence-Based Medicine movement**

Demanding valid evidence in evaluating medical practices seems like it should be a given. But although evidence-based medicine makes good sense in

theory, not everyone is buying into it. In fact, it's got some very harsh critics. Why would any health care provider have a problem with utilizing objective evidence as a basis for their patient care?

Historically, medical care has been based on conventional wisdom and time-honored practices. Physicians applied their best judgment and personal experience. Now EBM is being put forth as an alternative approach to medical practice, with, according to traditional doctors, the concept being used as a weapon to take away their autonomy. There is a fear that the expertise derived from years of clinical experience is being diminished and devalued.

It's a legitimate complaint. EBM was initially defined in opposition to clinical experience. At first glance, EBM does seem to discount the value of old school clinical experience in medical decision making. But it wasn't meant to be that way. David Sackett, MD, an early 1990s pioneer in the EBM movement, wrote early on that “the practice of evidence based medicine means integrating individual clinical expertise with the best available clinical evidence from systematic research.” Somehow the original definition got lost. Now the argument that evidence-based medicine can only be practiced in theory is always being refuted. The proponents of EBM are quick to note that it doesn't exist in a vacuum and that its practice does indeed require clinical expert-

ise, but a different kind of clinical expertise. The expertise being referred to is the expertise needed to retrieve and interpret the results of the scientific studies.

One more and somewhat related critique sees evidence based medicine as ultimately leading to a lack of motivation on the part of younger physicians, who are being taught to practice a “cookbook” kind of medicine. The argument is if one must always act in strict accordance with the evidence, then there's not much need for independent thought and decision making on the part of the physician. The same critics also say that EBM has already lead to the impersonalization of medical care and that it's at least in part, responsible for the deterioration of the doctor-patient relationship as it was once known to be.

From the practical standpoint, opponents say that EBM applies to populations – not to individuals. Considerations such as quality of life or patients' personal circumstances don't lend themselves well to scientific evidence. For instance, if a patient lacks the financial resources for expensive imaging techniques or drugs, what sense does it make to prescribe them, best evidence or not?

Gratefully, there are signs of moderation to these aspects of the EBM philosophy. Medical expertise should be put to work in many ways, including thoughtful and compassionate consideration of an individual patient's personal predicament. Common sense suggests that good doctors would use individual clinical expertise along with prevailing external evidence, simply because neither is enough to stand alone.

But then there's the money factor. Is it a coincidence that the EBM initiative gained momentum at the same time as the growth of managed care? That's doubtful. Not surprisingly, some fear evidence-based medicine being hijacked by administrators as a way to cut the costs of healthcare. As we've all become painfully aware, in the world of managed care, whether or not a treatment or therapy has been deemed to be “evidence based” is used as the justification for denying reimbursement. *continued on next page*



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**Evidence-Based Medicine...** *Continued from previous page*

Too, where evidence-based medicine gets its evidence raises some serious questions. Remember that "evidence" is derived after anecdotal results have been published and it seems that many current medical and surgical practices lack substantial evidence in support of their use. There may be tons of excellent research out there, but if it doesn't get published, it may as well not exist. The types of trials considered "gold standard" (i.e. randomized double-blind placebo controlled trials) are prohibitively expensive. Funding sources are the final determinant in what and who gets investigated. There are certain groups that have historically been under-represented e.g. racial minorities and people with coexistent disorders. And of course, research studies are notoriously subject to conflicts of interest and bias.

Does evidence based medicine have its own evidential base? Ironically, for a topic which speaks to the best evidence, there's not a whole lot evidence – best or otherwise - that EBM actually works.

Whether you're a true believer or not, you can bet you'll be hearing more and more on this subject as time goes on - simply because so many have jumped on the EBM bandwagon.

This is no longer a subject just for docs. Evidence-based thinking is now being tied to nursing, the public health community and to the education of allied health practitioners.

What role if any, EBM should play in the teaching and learning of nursing and allied health students is currently a hot topic in education circles. It will be the topic for another Focus article.

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**Hypokalemia...** *Continued from page 20*

HCO<sub>3</sub><sup>-</sup> acts as a poorly reabsorbable anion and "carries" more sodium to the collecting tubule, leading to increased sodium-potassium exchange and urinary potassium loss.

Recovery from acute renal failure, postobstructive diuresis, and osmotic diuresis can all lead to renal potassium loss. Magnesium depletion is a very important cause of renal potassium loss. It is difficult to correct the potassium loss until the magnesium deficit is corrected first. If magnesium depletion is not corrected, urinary potassium loss will continue despite large replacement doses of potassium.

Antibiotics may also be culprits in potassium regulation. Penicillins act as poorly reabsorbable anions, which thereby increase distal sodium delivery and sodium-potassium exchange. Gentamicin and cisplatin have direct tubular toxic effects that induce potassium loss.

Treatment of hypokalemia can be done orally or intravenously. A variety of salts of potassium are available for oral administration; however, potassium chloride is used most often. In type I and type II renal tubular acidosis and in diarrhea, potassium bicarbonate or potassium citrate is used.

Intravenous administration of potassium is used for profound, life-threatening hypokalemia and in patients who are unable to tolerate oral administration. Potassium is very irritating veins and must be given slowly over time. There is also an increased risk of acute hyperkalemia with the intravenous route and the patient must be closely monitored.

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