

Occasional essay

Is evidence-based medicine here to stay - or is it just another rung on the ladder in our quest for excellence?

The practising intensive care specialist is continuously bombarded with new and often conflicting information on what the best care for his patient should be. The current mantra is that whatever we do should be 'evidence-based'.

Much has been written on how to acquire and sieve this evidence in order to determine the evidence-base for a particular practice. Indeed this process has become a science and, to some extent, an industry of its own. So, as practitioners, we now have experts letting us know the value of the evidence on which to base our evidence-based practice. The risk of this approach is exemplified by the recent paper by the SAFE study investigators, indicating an equivalent outcome for critically ill patients receiving volume resuscitation with either 4% albumin or normal saline.¹ This study negates what the experts had previously told us about this topic following their review of the evidence available at the time.²

Anyone who has practiced as an intensivist for any length of time will have become familiar with the pendulum swings of "fashionable" therapy in the intensive care unit (ICU). Oxygen "supply-dependency" in critical illness and the waning popularity of the pulmonary artery catheter are but two examples of this. What follows is our cynical, but nonetheless alphabetical view on the current enthusiasm for evidence-based medicine.

A is for academic-based medicine

When we were registrars training to be specialists in intensive care medicine it was accepted that *Academic Medicine* was the 'gold standard' of excellence in medicine. Academic medical practice meant working in a university environment with ongoing peer review of one's practice. It meant commitment to research and application of the finest quality and standard of medicine. It meant following the dictates of the Hippocratic oath to the benefit of the patient and never relinquishing the quest to discover and deliver better care.

B is for board-based (or fellowship-based) medicine

In time, it was acknowledged that university standards varied and that the reference base for the best possible medical practice had to be from a group of experts in the field who would form a board of specialists (in some countries) or a learned college (in others). One had to be "board certified" or achieve fellowship to remain in the mainstream of the best.

No sooner had this become a reality than our peers from ours, and many other countries, decided that the practice of many board certified specialists around the world varied too much on some very important issues.

C is for consensus conference-based medicine

So, our peers from around the world then decided that they would have to get together to reach consensus on many issues, including definitions of diseases, the continuum of SIRS, SEPSIS and SEPTIC SHOCK being a classical example. So dawned the era of consensus conferences. Anyone who claimed to practice the best academic, board-based medicine had to get in line with consensus medicine. However, one soon learned to be suspicious of occasionally detectable bias in the decisions of consensus conferences. Whoever organised the conference could invite like-minded academic, board certified specialists to guide the direction of decision making and therefore the outcome of the conference.

The process also allowed consensus conference members with vested interests to encourage the use of perhaps invasive and sometimes expensive procedures and therapies, all the while encouraging the rest of the world to keep up or catch up with the new innovations. Sometimes the consensus conference delegates would take fact and opinion and extrapolate recommendations. This practice of extrapolation by experts can be risky, as seen in the recent paper by the Surviving Sepsis Campaign Management Guidelines Committee, which states, and we quote: "*Although these studies had limited numbers of patients with documented ALI/ARDS, there is no reason to believe that ALI/ARDS patients would have different outcomes from other critically ill patients*".³ In whose opinion?

D is for dollar-based medicine

The above trend coincided with exponential increases in the cost of procedures and medication in hospital academic medical practice worldwide. When specialists defended their now, occasionally, very expensive practice by citing consensus conference decisions, they came face to face with the reality of "*He who pays the piper calls the tune*" and the world entered the era of dollar-based medicine. Funders and providers of medical care started cutting back, especially in the

United States of America where specialists found that consensus conference medicine did not always carry enough weight to see them through the budget-limited decisions, especially when it came to expensive therapeutic modalities.

E is for evidence-based medicine (EBM)

We needed the evidence to back our decisions, especially if these decisions were going to cost a lot, but the evidence was not always there. We had messed around for so long traveling to or reading about consensus conferences all over the world, that we had somehow missed the evidence. We had to find the evidence to justify our existence and practice as specialists, so we fell back on our time honored rules of A,B,C to get us out of the bog. In this case though, A would be for the best evidence-based medicine (i.e. two or more academically/scientifically acceptable large randomized studies, as we used to recommend before we got lost down the track of alphabetical mnemonic medicine); B would be for at least one academically acceptable large randomized, controlled study; C would be for a few not so good studies, and so on. For anyone who did not understand or like this classification of the evidence, there would be a new breed of experts to tell us exactly how to classify evidence.

Furthermore, in this approach, when we run out of appropriate studies we also “extrapolate” in an academic/scientific (and increasingly protocolised) mental exercise, to convince ourselves what the available evidence means. The sad thing is that this approach is having a negative effect on “lateral thinking” and individual endeavours, which are the backbone of advances in technology and medicine. It requires bravery (or foolishness), as it is very “non-PC” currently, to criticise evidence-based medicine – dare we say much as it was folly to attack oxygen supply-dependence as a concept in the 1980’s and 1990’s. Indeed we criticise not the concept of evidence-based medicine, but rather the slavish adherence to it, even when logic and common sense mitigate against the evidence. Our legal colleagues have long realised that evidence can be made to support whatever theory one wishes to “prove”. EBM also raises many questions, such as –

- What would happen if we subjected tried, proven and useful therapies to EBM scrutiny today? What would become of drugs such as digoxin, aspirin, etomidate or suxamethonium?
- Could we support many of our everyday practices with evidence? What does EBM have to say about the usefulness or otherwise of clinical examination of patients? We know it is useful, but if there is no evidence does that mean we should stop doing it?

- What about the *art of medicine*? We all know that the complex human organism is not entirely amenable to protocolised therapies, otherwise we could have pure logic-driven systems (computers) to make diagnoses and prescribe therapies. We also know that cookbook medicine, no matter what the evidence base, is spectacularly useless and, needless to say, lacks the immeasurable human qualities required of a good doctor.
- What about when we lack the courage to do what the evidence suggests when the evidence goes against community expectations (e.g. futile mechanical ventilation in the terminally ill).
- Why is there often a great inertia to taking on new practices, even when backed by the best evidence? It often takes years for new practices to reach the mainstream consciousness. Is this because we are lazy and /or uninformed or have we seen evidence come and go one time too many?

What will be next? F---- good medicine?

Perhaps the F in our progression will be for “fringe” medicine, as currently practiced by academic thinkers who are not part of the so called mainstream. Those who are always trying “new” things as they strive for excellence in patient care by monitoring their own patients’ responses, outcomes and customer satisfaction. Alternatively, simply lateral thinking while sticking to the most cost-efficient locally proven techniques with quiet success while watching the excesses of over-enthusiastic “scientists” following the evidence to help them manage the perceived inadequacies of the masses.

Yes “fringe” medicine may become more and more attractive to intensivists as they see the successes of novel new therapies and techniques, which drive the enthusiasm of academic researchers, but are frowned upon by the powers that be because “there is not enough evidence (yet)”! Is this not much better than letting the patient die for lack of evidence? While there is life and new ideas - is there is not at least some logic in this type of “fringe” medicine?

If not fringe medicine then perhaps Fabulous, Great, Holistic, Ingenious, Justified, Kind, Leading, Managed, Noble, Omnipotent, Proven, Questioned, Realistic, Superb, Tried, Universal, Viable, Witnessed, Xcellent and finally Zen Medicine, to complete the alphabet.

We predict that with time the pendulum will swing from the current overemphasis on “evidence-based medicine”. Let EBM enjoy its (temporary) place and fulfill our needs at this time, but it will never replace careful individual care of patients by experienced and lateral-thinking intensivists. On the other hand, who knows, perhaps EBM will help to control costs significantly and we will look back with satisfaction and

even enjoy sharing the experience of the “E” period in a collegiate manner, even as we look forward to getting to “R” for realistic medicine soon.

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