Evidenced BAss^{2}ed Medicine

In Surviving Mold – Life in the Era of Dangerous Buildings, Dr Shoemaker describes what he calls Ass^2 medicine. "The diagnostic approach that assumes that previous made assumptions are correct is best described as Ass^2 medicine."

This short paper will discuss why I believe that "Evidenced Based Medicine" (EBM) as currently espoused is one of the worse forms of Ass^2 medicine.

What is evidence based medicine (EBM)?

As per Wikipedia:
"Evidence-based medicine (EBM) is an approach to medical practice intended to optimize decision-making by emphasizing the use of evidence from well designed and conducted research... classifying evidence by its epistemologic strength and requiring that only the strongest types (coming from meta-analyses, systematic reviews, and randomized controlled trials) can yield strong recommendations...It promotes the use of formal, explicit methods to analyze evidence and make it available to decision makers."

The purported goal of EBM is to improve and standardize health care methods and systems to optimize patient outcomes and minimize costs based on the "best" scientific information.

I first heard of EBM in the early late 1980's when I was finishing my residency in Internal Medicine. One of the Attending Physicians that was a faculty member and teacher was explaining to the residents about EBM. He was quite proud of himself for "only practicing EBM". He could reel off the "treatment of choice" and quote various studies supporting his arguments for pretty much any diagnosis. I asked him "what is the advantage of drug A verses drug B for condition C, and what is the mechanism of action conferring such advantages. " He replied " the data shows that drug A is has the best risk/benefit ratio in this particular cohort" and then impressively quoted a few randomized, placebo controlled studies and a few meta-analysis of the data.

Regarding my query as to **how** the drug actually worked and what was the mechanism of the benefits, after trying to avoid answering my question, he stated, "well nobody really knows how this drug works and why, but the data is clear in this cohort…blah..blah..blah.

If you ask me, they should call this simplistic type of medicine and this type of "analysis" evidence bAss^{2}ed medicine.

The problem with EBM is that it is based on the assumption that the cause of all diseases is unknown and incurable. Then based on this assumption, the next assumption is, that since all diseases are unknown and incurable, the only thing the doctor can do is prescribe drugs to treat the symptoms or treat the disease.

All research studies are designed to answer a question. Unfortunately, the question being asked very frequently is; which drug is best for condition C, drug A or drug B? Consequently, this type of approach and this type of thinking rarely if ever tries to uncover the ROOT CAUSE of the problem in the first place.

Regrettably, EBM cannot realistically ask "what is the best approach to improving the overall health and the hypertensive state in this particular patient sitting in my consulting room who has been diagnosed with high blood pressure?"

Instead, EBM, in its present form is applied to the "average" patient that meets some specific cohort. For example - a woman that is between 40-50, has a BMI>25 but <35, is not a diabetic and is taking a statin drug.

Human beings (patients) are not statistics, each person has unique sets of biochemical, hormonal, immunological, and neurological parameters that contribute to unwellness and physiologic dysfunction (like elevated blood pressure). These patients are best served by addressing the underlying cause of their dysfunction as opposed to merely selecting the "right" drug.

What is the "right" drug anyway? According to EBM, the "best" drug is the drug with the least statistical chance of causing an adverse reaction ("side effect") while simultaneously, showing the best statistical efficacy at treating some particular symptom or endpoint (like HTN). The decision to use a drug is based on the risk/benefit ratio.

Regarding the Risk/benefit ratio, what is the benefit? At best we are using a pharmaceutical agent to distort the patient's physiology such that some subjectively chosen end point has been remedied in the short term. What is the risk? This same pharmaceutical agent causes some adverse reaction ("side effect") that leads to new symptoms, worsening of old symptoms, permanent harm or disability.

Using EBM is almost like taking a multiple choice test with a single answer – you get the "correct" answer and you get an A+, however, if you get the "wrong" answer, you will get an F. Unfortunately, there is no real need to understand anything about the physiology of human illness to practice EBM.

Consequently, the movement towards using EBM actually makes doctors "intellectually lazy" – they really do not need to understand the underlying pathophysiology contributing to their patient's health problems.

A more useful way at looking at the evidence – is more like answering an essay question, where the student must explain his or her rational for coming to any conclusions as to the best course of action

What evidence should we optimally be looking at? We should examine the physiology, biochemistry, fluid dynamics, physical chemistry, autonomic function, and immunology. We should attempt to understand what is causing the symptom in the first place, then, work to treat the cause of the problem.

I am not saying that we should ignore double blind placebo controlled drug studies or that we should not look at scientific data when making therapeutic decisions. Of course we want to be as scientific as possible when treating patients. What I am saying is that treatments should preferably be directed at fixing the cause of the problem as much as possible. Unfortunately, EBM is biased in the opposite direction, away from causation and towards treating some imaginary, statistically generated person, which really has very little value in the real world.

EBM is the default option to the "path of least resistance" for the practitioner. If guidelines are adhered to, the practitioner has now followed the "standard of care", can be considered a "good doctor", will be

appropriately reimbursed (by some bean counter) and is protected from litigation – by following this "standard of care".

Any option other than recommended by EBM , can be used against the practitioner, they are not following the "standard of care", may be subject to punishment , may be subject to litigation, may be threatened with loss of professional license or financial loss.

I personally feel that the practice of medicine should be left in the hands of well-trained, well-intentioned and thoughtful doctors and health professionals. Unfortunately, medical education (and our "healthcare" system) is moving away from true understanding of human physiology and towards a cookie cutter, "best methods" approach.

I feel that this cookie cutter approach is an insult to my intelligence and makes doctors (and patients) slaves to cold statistical, impersonal, dumbed down, Ass^2 medicine.