



# 'We hold these truths to be self-evident': deconstructing 'evidence-based' medical practice

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## Abstract

**Rationale, aims and objectives** Evidence-based medicine (EBM) claims to be based on 'evidence', rather than 'intuition'. However, EBM's fundamental distinction between quantitative 'evidence' and qualitative 'intuition' is not self-evident. The meaning of 'evidence' is unclear and no studies of quality exist to demonstrate the superiority of EBM in health care settings. This paper argues that, despite itself, EBM holds out only the illusion of conclusive scientific rigour for clinical decision making, and that EBM ultimately is unable to fulfil its own structural criteria for 'evidence'.

**Methods** Our deconstructive analysis of EBM draws on the work of the French philosopher, Jacques Derrida. Deconstruction works in the name of justice to lay bare, to expose what has been hidden from view. In plain language, we deconstruct EBM's paradigm of 'evidence', the randomized controlled trial (RCT), to demonstrate that there cannot be incontrovertible evidence for EBM as such. We argue that EBM therefore 'auto-deconstructs' its own paradigm, and that medical practitioners, policymakers and patients alike ought to be aware of this failure within EBM itself.

**Results** EBM's strict distinction between admissible evidence (based on RCTs) and other supposedly inadmissible evidence is not itself based on evidence, but rather, on intuition. In other words, according to EBM's own logic, there can be no 'evidentiary' basis for its distinction between admissible and inadmissible evidence. Ultimately, to uphold this fundamental distinction, EBM must seek recourse in (bio)political ideology and an epistemology akin to faith.

## Introduction

There is often something sinister about familiar concepts. The more familiar or 'natural' they appear, the less we wonder what they mean; but because they are widespread and well-known, we tend to act *as if* we know what we mean when we use them. Evidence-Based Medicine (EBM) has fast become one such familiar concept; it is now among the most influential doctrines in the medical world and forms the basis of health care theory and practice from the classroom to the clinic. But when EBM is discussed and deployed, what exactly are we meant to understand by the term 'evidence'? If the evidence of EBM relies, in the first instance, on facts and figures derived from randomized controlled trials (RCTs) and the so-called 'meta-analysis' of them, should we not wonder what it means to exclude a host of seemingly subjective and non-quantifiable aspects in the field of health care? Should we not wonder, moreover, that these aspects are presented as contrary to EBM's mandate and to its self-understanding of what must count as 'evidence'? What would happen to EBM if, at the heart of its assumptions, we find an intuitive – a subjective and

non-quantifiable – claim upon which EBM's understanding of evidence is based?

This paper argues that, despite itself, EBM holds out only the illusion of conclusive scientific rigour for clinical decision making, and that EBM ultimately is unable to fulfil its own requirements for 'evidence'. We suggest that EBM's strict distinction between admissible evidence (based on RCTs) and other supposedly inadmissible evidence is not itself based on evidence, but rather, on intuition. In other words, according to EBM's own logic, there can be no 'evidentiary' basis for its distinction between admissible and inadmissible evidence; in practice, that which distinguishes the RCT from other forms of evidence ultimately comes down to a matter of belief, not evidence. We focus on the paradigm of EBM's truth claim, the RCT, to demonstrate that there cannot be incontrovertible evidence for EBM as such. We argue that EBM therefore 'auto-deconstructs' its own paradigm, and that medical practitioners, policymakers, and patients alike ought to be aware of this aporia within EBM itself. Indeed, according to its own lights, EBM is forced to exclude almost all aspects of health care as most care does not rely on RCT outcomes or on the narrowly

prescriptive care that the interpretation of these outcomes would dictate. Our deconstructive analysis of EBM draws on the work of the French philosopher, Jacques Derrida [1]. Contrary to many academic treatments of EBM, we are not pleading for an integration of other perspectives into EBM or for a movement 'beyond EBM' [2,3]. Rather, this paper represents an effort to open up new ways of looking at health care by paying particular attention to those questions that EBM leaves aporetic.

## Basic assumptions

One of the standard definitions of EBM reads as follows: 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients' [4]. At first glance, this definition of medical practice is neither original nor controversial. But does it accurately describe the clinical reality of evidence-based practice?

We suspect that, despite its name, the main thrust of EBM does not concern the search for best evidence. After all, how many physicians 'conscientiously', 'explicitly' and 'judiciously' refuse the best available evidence in their decision making? Rather, EBM is characterized by the belief that all health care providers – practitioners, policymakers, physicians, physiotherapists, etc. – should base their medical decisions on specific scientific findings, namely, evidence obtained from RCTs. Within the EBM paradigm, the RCT is believed to offer the most valid form of evidence, effectively denigrating or altogether excluding other crucial aspects of decision making in the patient–physician relationship, such as patient values, the physician's clinical experience and others [2,5]. According to EBM, decisions that are not based on results obtained from the meta-analyses of RCTs are called intuitive, guesswork practice, mere opinion or taken-for-granted assumptions [6]. According to this logic, EBM claims to produce better health care outcomes than a practice based on clinical experience. But is EBM really the best medicine we can get?

In a very short period of time, EBM's narrow understanding of evidence has become widespread, familiar and 'naturalized' to such an extent that it is now difficult to pose questions concerning evidence in terms other than those sanctioned by EBM itself. In this respect, EBM is hegemonic. The more EBM proponents repeated their ideas during the 1990s, the more people began to believe in it and started to act according to its principles. Today, in some countries EBM is so influential that 'evidence' will never sound the same again. But to believe that the popularity of a movement is sufficient evidence of its truth is to commit a logical fallacy. Perhaps the most remarkable thing about the evidence-based movement in health care (medicine, nursing and the health sciences nexus in general) is that to date there is still no direct RCT-evidence to support the basic assumptions of EBM [7]. This is all the more remarkable in that this fact is scarcely mentioned either by practitioners or theorists in the EBM field itself. As Brian Haynes writes:

A fundamental assumption of EBM is that practitioners whose practice is based on an understanding of evidence from applied health care research will provide superior patient care compared with practitioners who rely on understanding of basic mechanisms and their own clinical experience. So far, no convincing direct evidence has shown that this assumption is correct [8].

Moreover, no studies of quality exist to demonstrate the superiority of EBM in health care settings [9].

If no direct evidence supports what we might call the 'surplus value' of EBM compared with other kinds of evidence, in short, if EBM fails according to its own structural criteria, is this not a problem for the paradigm itself? Apparently, this does not seem to be the case, which points to other, non-quantifiable investments in the 'truth' of EBM by those who support it. Incredibly, some advocates of EBM do not believe that EBM's lack of evidence should even pose a problem. The initial manifesto of the Evidence-Based Medicine Working Group goes so far as to suggest that the lack of evidence is evidence in itself, this 'evidence' being so 'self-evident', it seems, that to question it would be foolish:

The proof of the pudding of evidence-based medicine lies in whether patients cared for in this fashion enjoy better health.

This proof is no more achievable for the new paradigm than it is for the old, for no long-term randomized trials of traditional and evidence-based medicine are likely to be carried out [10]. We must add that it is not simply that no RCTs are *likely* to be carried out, as the manifesto states, but such studies could *never* be carried out. How would an RCT, by definition based in quantitative methodologies, measure the 'enjoyment' or 'better health' that EBM is supposed to deliver? Qualitative studies, of which there are many, must be rejected immediately on the basis of faulty evidence.

According to its own logic, then, there could be no 'evidentiary' basis for EBM's claim that it is the best. For a paradigm that makes so much of the distinction between old 'intuitive' medical practices and new 'scientific' ones, this is most shocking. As Henry *et al.* write:

evidence-based medicine cannot accommodate concepts that resist quantitative analysis and thus reinforces and formalizes clinicians' tendency to dismiss concepts that resist explicit analysis as unimportant or inscrutable [2].

Consequently, under the guise of EBM, medicine not only comes to resist non-quantitative analyses, but it becomes a travesty of science by systematically dismissing concepts and evidence that cannot explicitly be represented by EBM's terminology. Here, the concepts of 'health' and 'illness' themselves would be deemed unimportant or inscrutable, and the general purpose of what we call medicine would, like the proverbial baby, be thrown out with the bathwater. Evidence, in the full sense of the term – the 'old-fashioned' sense, perhaps – is soon replaced by a cipher, a symbol or character that has no intrinsic value, but that stands in for a value according to its sanctioned place in the system.

The E of evidence is surprisingly the most opaque concept of the EBM paradigm. What ought we to mean when we consider something as 'evidence', and how is its evidentiary nature deciphered? Is it the result of an observation, is it a fact, or is it the truth? Evidence cannot simply be described as 'empirical' because reading this text or eating a banana is as empirical as any RCT. Sometimes it is said that, above all else EBM is 'critical' [11], as if researchers gathering and analysing qualitative data were uncritical. But this is to misunderstand the meaning of critique. Others call the evidence of EBM 'exact', and yet we cannot imagine any scientist who purposefully looks for inexact proofs of a thesis. What remains as EBM's distinguishing feature is its commitment to quantity and quantification, and it is here that we grasp the meaning of 'evidence' within the EBM paradigm. This is

such a narrow and strict definition of evidence that some EBM advocates have claimed that before EBM existed, health care was not based on evidence at all. Although the Evidence-Based Medicine Working Group speaks of individual patients who are supposed to 'enjoy better health', and while Sackett *et al.* mention patient values and the need for qualitative research [12], these are empty rhetorical gestures that belie the fact that, for them, evidence obtained through the measurement of observable phenomena is the only form of evidence considered worthwhile [13]. Nevertheless, only one type of evidence is expressed by quantity, and it has yet to be proven that EBM's will to quantify results in better health care practice. The E of EBM therefore acts as the authoritative cipher, the synonym, for evidence in general: *E = truth = reality*.

## A deconstructive reading of the 'E' of evidence

Evidence-Based Medicine is committed to the belief that evidence 'speaks for itself', as if there were a one-to-one relationship between truth and EBM's own idiosyncratic representation of reality. The E in EBM means that not only is 'evidence' true, but also, according to a naïve realism, that the scientist has direct access to this truth, despite the fact that human beings are social, historical and political creatures – and that these limitations prevent a God's-eye view. The truth as such is never self-evident [14]. Evidence and truth are not unmediated; there is always and necessarily a moment of interpretation because their terms are always and necessarily situated. Even when evidence is represented numerically as quantity, such data appear for us, and are meaningful, by virtue of our shared social, historical and political world, which anchors these terms, providing them their essential context. And there are countless other factors that will influence how 'evidence' – supposedly neutral and objective – appears for us at all, how evidence is both contingent and intersubjective: economic factors, religious convictions and ethical values, to name just a few. These factors do not just figure in the ways that evidence is used or applied, which is to say, the contextual and necessarily human *effects* of evidence, but more radically still, these factors will constrain how – or even whether – evidence will appear at all, whether it will appear *as* self-evident or will be discounted or even fade from view because it is not familiar or 'natural' according to current conventions. Thus, evidence always and necessarily relies upon unquantified and unquantifiable judgments. Now, if the EBM paradigm needs these kinds of judgments, interpretations, clarifications or other kinds of evidence in order to function, is it not the case that the paradigm itself must seek recourse in the very 'intuition' that it officially disavows? An honest assessment of the evidence would necessitate the ongoing interpretation of both how evidence appears in the first place and the myriad *effects* of these interpretations as they are extended to the human lifeworld, generating their own set of effects, in turn – all of which are themselves a form of evidence in need of interpretation and evaluation.

Consider an RCT for an extremely expensive drug that promises better outcomes for a disease like diabetes. First, we must take into account the conditions that enabled this research – conditions that are never themselves neutral or objective. Who funded this research, for example, and what are their motivations and investments? But more than this, we must consider the multiple *effects* of

this RCT as the data are figured in the human lifeworld and are subject to interpretation and evaluation there. What if the use of this particular drug never becomes a 'best practice' because health insurance agencies refuse to pay the high cost of this treatment? A political and economic and social battle may ensue, and the terms of this debate will probably take the form of a quantified cost-benefit analysis, according to utilitarian principles. Even still, 'intuition' will play its part behind the scenes. If a patient's health insurance provider refuses to fund this treatment, it is because an intuitive bureaucratic threshold has been crossed in the insurance industry itself: perhaps, paying for this drug will cut *too much* into profits. In the end, what counts as 'too much' will probably not be quantifiable. If we were to try to make such decision making explicit, we would likely find competing spheres of interest where economic data butts up against what we might call the 'social good' and 'ethical values' pertaining to health and illness. No RCT will help us here; indeed, we shall find that the original RCT in question is meaningless unless it is set within this wider context – and that this context will rely on terms that are incommensurable with the principle of quantity that governs the RCT paradigm.

Here we have begun to make use of the work of Jacques Derrida and his concept of deconstruction [1]. Deconstruction works to lay bare, to expose the ways in which competing claims, like those above, are adjudicated. In particular, it works in the name of justice to bring to light what has been hidden from view. To explain the way deconstruction works, it will help to look at an example. Consider for a moment a fundamentalist religious sect that openly condemns modern technology because it is thought to destroy religious integrity and the religious way of life. When this group uses modern technology, such as the Internet, to spread its message, it necessarily makes use of the very thing that it condemns or forbids. The gesture is self-contradictory. As Derrida would say, at this moment the fundamentalist group deconstructs or dismantles its own point of view, possibly undermining its own moral authority. Here, in order to institute a religious society that would be distinct from the technological society that it condemns, the group is nevertheless inextricably bound to the very society it disavows and seeks to destroy. If this contradiction is sustainable within a religious worldview, it is only by virtue of an authority that commands: 'do as I say, not as I do'.

Our example is an imperfect analogy, although it is instructive. If the structure of authority and if contradiction (some would say, hypocrisy) are the essence of faith and religious life, they ought not to be tolerated in the sciences. However, when we submit EBM to a deconstructive analysis, we find a system that staggers under the weight of its own edicts, a system that, in order to sustain such self-contradiction, can only be described as 'faith-based'. Here we could apply the terminology of Ernest House and declare that EBM is a 'methodological fundamentalism' [15]. By deconstructing the 'self-evidentiary' character of truth and evidence, we find that EBM cannot refuse what it pretends to exclude: non-quantifiable evidence. Any exclusion of such evidence can only happen in a non-evidence-based way, which means that EBM must rely on precisely that which it hopes to exclude.

Every RCT – the gold standard of EBM – artificially isolates one or a few variables from what it studies. As Tonelli, Porta and others have argued, medical reality is far more complex than the artificial world of an RCT. Thus, we must question not only how to use the results of RCTs in medical practice, but how to choose

between conflicting sorts of evidence [3,16,17]. As Henry *et al.* rightly stipulate, the *Users' Guides* give no rules governing when its hierarchy should shift, except that answering these difficult questions requires 'deep understanding of the evidence' [2]. The call for 'deep understanding' and an appeal to non-quantifiable or otherwise 'intuitive' knowledge is indeed crucial in medical practice. However, EBM presupposes a one-to-one relationship between evidence and decision as if medical reality were immediate and transparent in itself. How should we quantify clinical judgment, observation, conversation and other inherently non-quantifiable aspects, all of which require interpretation and judgment? As Tonelli has argued, clinical decisions are multiplex, drawing on empirical evidence, experiential evidence, pathophysiologic rationale, individual patient values and preferences, and system features, among others [3]. In the face of these embodied, human considerations, there is reason to interrogate what Ross *et al.* characterize as the inevitably normative stranglehold of EBM [18]. EBM's failure to exclude all of these aspects – and its inability to account for them in its own decision-making processes – demonstrates how EBM deconstructs itself, how it fails to operate according to its own norms. This makes of EBM a textbook example for deconstruction: what is used as EBM's paradigmatic method of closure turns out to be found, ultimately, at the heart of EBM itself. In other words, to uphold its own paradigm, EBM appeals to a knowledge that is systematically forbidden, something from outside. Its much-lauded distinction between 'evidence' and 'intuition' is based on intuition itself, thereby profoundly discounting EBM as a new and more rigorous 'science'. It turns out that EBM has little claim as a new and different type of medical 'evidence', although it works diligently to cover up this fact, conveniently overriding its own principles. How, then, should we assess EBM's moral imperative to use EBM in clinical practice? What authority is at work here, and how can EBM provide 'evidence' for clinical decision making when it cannot present evidence for the value of this evidence, evidence for why – and how – certain forms of evidence are deemed non-evidentiary?

### The scientific subject of EBM

Our deconstructive analysis has focused thus far on the paradigmatic underpinnings of EBM. In this final section, we take EBM's objectives into account, looking at the effects of the EBM discourse. Consider once again the definition of EBM cited above: 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients' [4]. Here, EBM is founded ostensibly not only upon a strong plea for evidence, but on the best care for individual patients. It is an attempt to deal with the old, paternalistic face of medicine, when doctors fell back upon their own clinical authority (experience, clinical knowledge) to decide what was best for the patient, presumably independent of what the 'evidence' told them to do.

Evidence-Based Medicine is meant to be used as a powerful instrument to judge between medicine based in 'evidence' and old-fashioned 'intuitive' medicine – as if the binary between 'evidence' and 'intuition' were itself clear and self-evident. Above, we have sought to deconstruct this binary, and have pointed to some ways in which these categories are mutually implicated within EBM itself. Of course, EBM must deny the myriad ways that it relies on intuition; and so the critique of EBM is often met with the

rhetorical gesture that such criticism is 'unscientific', or that critics are irrationally opposed to 'progress', that critics can only support an *ad hoc* system that is tantamount to ignorance and 'guesswork' [6]. But who, we might ask, is the 'conscientious' clinician who makes 'explicit' and 'judicious use of current best evidence'? In philosophical jargon, we might say that evidence itself is the 'subject' of EBM: the evidence itself 'acts', as the 'agent' of care, supplanting the individual with a system and, in the worst case, abrogating the clinician and the patient alike of their individual responsibility to assure the best health care. As long as the clinician follows evidence-based best practices, he or she is indemnified and is imagined to have acted with due diligence. As Maya Goldenberg points out:

EBM's ability to guide healthcare decision-making by appealing to 'the evidence' as the bottom line is attractive to many because it proposes to rationalise this complex social process. Yet it does so through the positivistic elimination of culture, contexts, and the subjects of knowledge production from consideration, a move that permits the use of evidence as a political instrument where power interests can be obscured by seemingly neutral technical resolve [19].

In EBM, evidence is installed as the 'subject', a kind of scientific god – a god who is not omniscient, perhaps, but one who is believed to have weighed all relevant factors before issuing a decision. Such 'technical resolve' is falsely thought to be objective and value-free; complex social processes are effaced, and we have opened the door to a covert political instrumentalization. When the 'relevant factors' include only a narrow and reductive view on reality, when they focus so fixedly on the presumably objective data of RCTs, it is difficult to conclude that such an agenda will systematically empower the individual patient or ensure better care. After all, the RCT neither starts from nor concludes with an individual; data are gathered, and the result is a statistically 'average patient' who may or (more likely) may not coincide with the creatures of flesh and blood that we are. In this sense, EBM is a biopolitical paradigm, a political venture that treats the lives of populations, rather than individuals. As Foucault warns, here, individual lives become 'regularized' through 'a technology in which bodies are replaced by general biological processes'; individual life, he continues, becomes 'species-life' [20].

Advocates of EBM may use liberal words like 'conscientious' and 'judicious', but this is misleading because in EBM there is no unitary subject, no single authority or scientist behind EBM's decision-making directives. EBM would have us believe that these directives flow fully formed from the evidence itself, although it is important to note that evidence has already been worked over, it is part of a vast network that includes RCTs, meta-analysis, funding bodies, pharmaceutical corporations, the insurance industry and public policymakers, to name just a few – in short, a 'complex social process' the intricacies of which are collapsed into the E of evidence, a cipher for scientific authority, one that pays lip-service to the 'conscientious' and 'judicious' use of evidence, but which ultimately installs the very familiar old figure of medical paternalism. It is an authority that seems to have a kinder face, but it is perhaps all the more sinister for its dissimulation, cloaking itself in the depersonalized mantle of better outcomes, patient care and the self-evidentiary 'science' of evidence. Thus, in an utterly surreal twist, in EBM medical decisions are made in the absence of anyone who decides – no 'me', or 'you', or 'us'. We do not, we

cannot, speak when the evidence is thought to speak for itself and for us.

## Postscript

'We hold these truths to be self-evident' – this phrase captures what for EBM amounts to a founding principle. For EBM, the so-called 'truth' of the matter is not open to debate; EBM appeals, instead, to what we might call a scientific nationalism, effectively gathering together a community of scientists and defining the terms of their inclusion and the terms of their practice. Those who question too much – or in the wrong way – are denied full citizenship. 'We hold these truths to be self-evident' – unlike the US Declaration of Independence, the EBM manifesto is not in itself revolutionary. Here, we might once again cite Foucault, who remarks, 'we still have not cut off the head of the king' [21]. Instead, EBM aligns itself with political victories that have already been won, appealing to 'the Laws of Nature and of Nature's God' 'that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness'. Here, in the Declaration of Independence, we read of fundamental rights claims that have today become socially and politically self-evident, no longer subject to serious debate. In deconstructing the rhetorical force of EBM, we find that its claims are founded in similarly intuitive and familiar political attitudes that have been smuggled into scientific and epistemological discourse. The political dimension is, then, duly hidden. Thus, EBM declares itself victorious through an appeal to intuition and to the emotions – an appeal that is dissimulated as scientific rigour and epistemological truth. In this respect, EBM is a scientific and epistemological simulacrum – something that appears only to the extent that its founding principles disappear.

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