

## Quo Vadis Medicina Ex Testimoniis? A Quarter Century after its Inception, Where is Evidence-Based Medicine Now? More Questions than Answers

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To mistrust science and deny the validity of the scientific method is to resign your job as a human. You'd better go look for work as a plant or wild animal. *P.J. O'Rourke's 1947- Parliament of Whores (1991).*

Just as Peter asked Jesus in the New Testament about two thousand years ago, Domine, quo vadis? (i.e. to be crucified again?), we may ask ourselves today within the context of medicina ex testimoniis [1] where we are a quarter century or so since the birth of evidence-based medicine. Where do we go from here and where we will probably go? Thirteen years ago, we posed a similar question and concluded then that the evidence-based medicine (EBM) glass remains half-full and half empty. [2] Use of 'evidence' in logic and critical thinking still requires clarification.

Historically, medicine was always evidence-based. Today, what is new? It is the meaning of 'evidence' itself which appears as a new asset. Is it more than 'that's what I have seen' or 'what our most experienced Colleagues say'? More objective perhaps, more pragmatic, more focused, more reproducible, and more evaluable?

Let us try in this essay to specify some challenges and questions pertaining to EBM today and to highlight the best ways to define, pragmatize and solve them now and in the future.

A note about references: Transient and often temporary value are inherent to electronic references and websites.

### Many Are Worth Quoting Here, But Reader Beware!

As for EBM and evidence itself, we still must look systematically across hundreds of book and article titles if we speak about the same thing, integrable, and interpretable across the widening experience. Just a systematic review of Amazon-listed book titles (in hundreds) might bring surprising results. A research project by itself for anybody?

As a matter of fact, among other resources today, Amazon. Comlists close to five hundred books (monographs) pertaining to the following four health sciences professions and domains: Evidence-based medicine, evidence-based dentistry, evidence-based nursing and evidence-based public health see also [3, 4] Original articles extend beyond this count. Do they all address the same topic?

In this paper, let us discuss today EBM [5] and its past and present contributions and definitions (background, history and definitions, methods, limits and criticism, applications, and education).

Let us also reflect here on what we should or shouldn't do in EBM in the years to come.

A quarter of century or so has already elapsed since the first initiatives in the formulation of evidence-based medicine (EBM) and the refinement of its identity, objectives, content, methodology, and applications. Remarkable monographs, papers and sources of information, electronic and otherwise, on the subject continue to multiply. Considering such experience, we may now consider the following

questions:

- What is EBM today, how might it be defined, and what are its objectives?
- What are EBM's methodological strengths and weaknesses, especially regarding definitions?
- What are its applications and uses across the health sciences?
- What might we expect and possibly do with EBM in the future?

### **What Is EBM Today, How Might It Be Defined, And What Are Its Objectives?**

Shouldn't we agree not only on what EBM is, but also on what we mean by evidence and qualitative attributes in this domain?

Are we all speaking and thinking about the same concepts?

Two papers triggered the current EBM trend. In 1992, the Evidence-Based Medicine Working Group proposed a new approach to teaching in practice and medicine [6], and in 1996, Sackett's et al.'s reflection [7] proposed what EBM should be:

Evidence-based medicine is the process of systematically finding, appraising, and using contemporaneous research findings as the basis for clinical decisions about the care of individual patients [6].

Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients [7].

Dixon et al. [8] consider EBM to be the application of the scientific method:

In its broadest form, evidence-based medicine is the application of the scientific method in healthcare decision making. ... 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 well-conducted research. Although all medicine based on science has some degree of empirical support, EBM goes further, classifying evidence by its epistemological strength and requiring that only the strongest types (coming from meta-analyses, systematic reviews, and randomized controlled trials) can yield strong recommendations; weaker types (such as from case-control studies) can yield only weak recommendations [8].

In addition to a more recent list of definitions [9], other definitions follow the original ones somewhat loosely:

- The consistent use of current best evidence derived from published clinical and epidemiologic research in management of patients, with attention to the balance of risks and benefits of diagnostic tests and alternative treatment regimens, taking account of each patient's unique circumstances, including baseline risk, comorbid conditions and

personal preferences [10, 11].

- The integration of the best research evidence with clinical expertise and patient values [10].
- The process of systematically finding, appraising, and using contemporaneous research findings as a basis of clinical decisions [12].
- Consistent use of the best available evidence, preferably from current peer-reviewed sources in electronic and print media, to inform decisions about optimum patient management; decisions should consider the needs and preferences of individual patients [10].
- The integration of the best research evidence with clinical expertise and patient values [10].
- It's about integrating individual clinical expertise and the best external evidence.

Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. By individual clinical expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice. ... By best available external clinical evidence, we mean clinically relevant research, often from the basic sciences of medicine, but especially from patient-centered clinical research into the accuracy and precision of diagnostic tests (including the clinical examination), the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens [12, 13].

Other definitions are more general, going beyond the "research – clinical expertise – patient or community" trio of considerations:

- The practice of medicine in which the physician finds, assesses, and implements methods of diagnosis and treatment on the basis of the best available current research, their expertise, and the needs of the patient. The expertise here means special skills or knowledge acquired by a person through education, training, or experience. (Expertise also includes the respect and practice of medical ethics) [13].
- The practice of medicine in which physicians find, assess, and implement methods of the best available risk assessment, diagnosis, and treatment and prognosis; on the basis of the best available current research, health in line with medical ethics consideration within a specific setting of practice and society [14].
- From an epistemological perspective, EBM can be defined also as a set of principles and methods to ensure that decisions regarding the individual patient as well as population-based policies regarding groups of individuals

are consistent with the most credible evidence while relying on both type 1 (fast, automatic, intuitive, experiential, affect-based) and type 2 (slow, analytical, research-based logical and probabilistic cognitive processes) to weigh the trade-offs involved in alternative understandings of questioned phenomena and decision-dependent courses and results of action [15-17].

- Evidence-based medicine is the practice and research of medicine and other health sciences in which the physician and health professional find, assess and implement methods of diagnosis and treatment on the basis of the best available current research, their expertise, and the needs and values of the patient and the community [14].
- Other definitions [18-20] are also worthy of attention, some based on the three elements mentioned above, some going beyond them.

### **Do We Know What We Are Talking About? What Are EBM's Methodological Strengths And Weaknesses, Especially Regarding Definitions?**

To this day, we still do not know if everyone means the same thing when talking about 'evidence-based medicine', 'evidence' within the context of EBM, and other terms in the EBM vocabulary. Could our certainty in this matter increase in the future?

The emerging domain of orismology (from the Greek "orismos" meaning definition and "logos" meaning study) emphasizes the relevance of the best possible definitions of whatever we are doing and interested in.

From a more detailed coverage of this topic elsewhere [20-25], let us examine briefly what is so important in the EBM domain. Orismology in EBM is not overstated, but it is certainly highlighted here. Not everything is well defined in EBM, which limits its relevance and calls for further improvements and developments.

As an example, is the basic definition of EBM as formulated by Sackett et al. an adequate motivational definition or is it something more?

- Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients [7].

Could and should this definition have been formulated better?

This original definition is a composite definition. To make it usable, we must specify what each individual component means to us: What is 'evidence'? What is 'conscientious' and what isn't? What is 'explicit' or 'judicious' offering us criteria to decide what EBM is and who is its practitioner and who isn't. Such a definition may be valuable from a motivational perspective, but something more is needed to make it operational.

As a matter of fact, definitions may be [22, 24-25]:

- No definition at all (missing, absent definitions)
- Inspirational and motivational
- Strategy-motivated
- Value (judgment)-based
- Cause-based and cause-containing
- Content-listing
- Context specifying
- Uncertain or evolving
- A posteriori developed
- Specialty-bound or type of care-dependent
- Subject-missing
- Purpose-missing
- Patient/physician centered
- Those of other scientific endeavours and entities
- Operational.

In medicine, the definition of any variable, entity or observation should allow proper measurement, classification, decision making, action, evaluation and reflect changes (by changing itself).

In addition to the above definition types, composite definitions also require definitions of each of their constituting elements in order to make them as operational as possible. Starting with the definition of EBM, what should be considered, improved, implemented, and evaluated?

What then is 'evidence' itself in our context?

Here are some definitions of evidence:

- Any data or information, whether solid or weak, obtained through experience, observational research or experimental work. These data or information must be relevant and convincing to some degree either to the understanding of the problem (case) or to the clinical decisions (diagnostic, therapeutic or care oriented) made about the case. 'Evidence' is not automatically correct, complete, satisfactory and useful. It must be first evaluated, graded and based on its own merit [26, 27].
- A fact or body of facts on which a proof, belief or judgment is based. Evidence does not mean certainty. Rather, it represents an available proof with varying degrees of certainty [28].
- In medicine, evidence itself is a broad entity encompassing any data or information, whether solid or weak, obtained through experience, observational research or experimental work (trials). This data or information must be relevant and convincing to some (best possible) degree either to the understanding of the problem (case) or the diagnostic, ther-

apeutic, or otherwise care oriented clinical decisions made about the case [26].

And what about the other components cited above that constitute one of Sackett et al.'s EBM definitions?

- What is 'conscientious'?
- What is 'explicit'?
- What is 'judicious'?

How can we identify who is or isn't a practitioner of EBM? Many definitions are remarkably motivational, but maybe otherwise useless.

Steps of EBM practice further define this domain, however indirectly such precisions might be.

The five original steps may be reworded as follows:

- Converting clinical information of interest (about prevention, prognosis, therapy, causation, etc.) into answerable questions; defining the problem; (what kind of evidence are we interested in?)
- Searching for wanted sources of information; tracking down, with maximum efficiency, the best evidence with which to answer them (whether from clinical examination, diagnostic laboratory, research evidence, or other sources; (obtaining the best evidence to fit our needs and interest)
- Critically appraising the evidence for its validity (closeness to the truth) and usefulness (clinical applicability); critically evaluating the information; (what is such evidence worth?)
- Applying the results of this appraisal in our clinical practice to the patient; integrating the critical appraisal without our clinical expertise and with our patient's unique biology, values, and circumstances; (using valid and useful evidence obtained);and
- Evaluating our performance; efficacy, effectiveness and efficiency in executing steps 1-4; evaluating this application on a patient and seeking ways to improve for next time (was it worth it?) [10, 29].

The expanded five original steps may include [30]:

- Converting the need for information into an answerable question; formulating the question that needs to be answered concerning the problem, patient, or community (identifying the need for evidence);
- Tracking down the best evidence with which to answer that question; searching for evidence (producing the evidence);
- Critically appraising the evidence for its validity, impact, and applicability;
- Integrating the critical appraisal with our clinical expertise, and with our patient's unique biology, values, and circum-

stances (linking the evidence);

- Selecting the best evidence available for clinical and community health-decision making (using the evidence);
- Connecting the evidence to clinical and community health knowledge, experience, and practice with the patient's and/or community values and preferences (integrated uses of evidence);
- Implementing useful findings in clinical (clinical care) and community (public health policies and programs) medicine's decisions and practice (implementation of evidence);
- Using the evidence in clinical and/or community care to solve the patient's or community problem (uses of evidence in specific settings);
- Evaluating the effectiveness of uses of evidence in this case and situation (weighing the impact); evaluating our effectiveness and efficiency in executing steps 1-8 and seeking ways to improve them both for next time;
- Evaluating the implementations and the overall performance of evidence-based medicine and/or evidence-based public health practitioner and activity (evaluating structure, process and impact of evidence-based actions, economical, and managerial real and desired characteristics); and
- Teaching and expanding EBM practice and research (going beyond what was already achieved).

### What Are EBM's Applications And Uses Across The Health Sciences?

Is our understanding of EBM the same across the literature and current experience?

Evidence-based medicine, however accepted, is subject of criticism in general terms and in detail [31].

There are still multiple definitions of EBM as a whole as well as of its components in composite versions of EBM. In this context, can we evaluate how we do research in EBM, how we practice it, and what are the results of such practices across past and current experience?

As for an example of the practice of EBM as it is currently defined, let us have a brief look at the domain of causality.

So far, it appears that cause-effect relationships such as those between exposure to a beneficial factor (treatment) and disease cure or prevention or between a noxious factor and the risk of disease occurrence and severity are subjects of principal attention in EBM. And rightly so. However, other health phenomena and their management still need more attention.

The assessment of causality across the available information by way of Bradford Hill's criteria (strength of association, consistency, specificity, temporality, biological gradient, plausibility, coherence, exper-

iment, analogy) and its grading [32] is essential, but does not suffice. Besides causality evidence, diagnosis evidence or prognosis evidence among others merit the same attention.

If EBM wishes to be consistent with one of its major definitions, it is not enough to produce and evaluate the best evidence. We must also assess its uses and effect, as well as its links with clinical expertise, connecting (and how?) individual patient (or community) roles, needs, characteristics and preferences, in the framework of type 1 and type 2 ways of critical thinking and reasoning. Patient values are not forgotten and must not be forgotten either [33-43].

Isn't EBM today more than the production of high-quality evidence in quantitative and qualitative terms? Yes, it is.

EBM relies also on high quality reasoning, informal logic, critical thinking, and on decision making, as pragmatic as possible in the context of modern philosophy:

Thinking, across the literature, is a mental action which, if verbalized is a matter of combining words in propositions [44, 45].

Critical thinking (from several definitions) is the intellectually disciplined process of actively and skillfully conceptualizing, applying, synthesizing and/or evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action [46-48].

Critical thinking components are an integral part of epidemiology, clinical epidemiology, and decision making in practice and research.

Isn't evidence-based medicine a medicine of critical thought? It also is.

Critical thinking in medicine deserves more detail and discussion, as also presented elsewhere [49-52].

Reasoning in general is thinking leading to a conclusion. Judgments (inferences) are made from facts, observations, and/or hypotheses. In other words, it is a tool to form conclusions, judgments, or inferences from facts or premises [44].

Clinical reasoning is a context dependent way of thinking and decision making in professional practice to guide practice actions [26].

We discussed fallacy-free reasoning in medicine in more detail elsewhere [53].

An argument in medicine is a connected set of statements originating from a lived situation, experience, or research in medicine intended to establish a position in medical problem solving, understanding, and decision making [26].

A modern form of an argument [54-55] is the Toulmin et al. model as a multi element way of reasoning to reach valid conclusions. Valid conclusions are a claim of an argument, consisting in grounds (fundamental data and information as the basis from which we reason), backing (body of experience and evidence that supports the warrant), warrant (general rule, experience and understanding of the

nature of the problem under study), qualifier (quantification of certainty about the claim), and rebuttals (conditions or circumstances under which the argument does not apply). Connectors are words linking argument elements. Claim is a conclusion to which we arrive through our reasoning supported by the present argument.

We discussed this kind of modern argumentation and its application in more detail elsewhere [11, 26, 44].

Modern medical argumentation is useful not only in the production and evaluation of evidence in research and practice. A considerable volume of information in health sciences and professions is also communicated the argumentative way, even in medical journal articles today [56-58].

Should we go beyond evidence-based medicine within this context or within a larger framework incorporating informal logic, critical thing and modern argumentation in a kind of cognitive medicine or cognitive medical thinking? [59].

Yes, we should.

So far, grading evidence continues to focus mainly on cause-effect relationships. Such an impression is still not supported by a systematic review of past and current experience. Far reaching consequences include clinical and community medicine guidelines.

As an example of the most frequent evidence grading, let us take the 'pyramid of evidence' which illustrates graphically the hierarchy of evidence strength for causal proofs: the weakest evidence is at the base of the pyramid while increasingly stronger evidence is found towards the top.

- Synopses
- Meta-analyses, systematic reviews
- Experimental studies (clinical trials)
- Analytical cohort studies (observational)
- Analytical case-control studies (observational)
- Observational descriptive studies
- Single clinical case reports, case series reports
- Hearsays, anecdotes, narratives, plain ideas, opinions

With minor modifications and expanded sources of information, such hierarchy of evidence may be found across the literature [60-65].

Is evidence of causality the sole evidence to be considered in relation to grading?

Based only on Bradford Hill's criteria [65, 66] evidence of causality appears as a basic way to consider relationships between cares and cure or prevention and staying healthy. More than causality assessment may be needed in the world of clinical guidelines. The GRADE approach also assumes qualitative considerations and expert individual and team opinions in clinical guidelines and recommendations

development and uses [67-75]. It is the subject of an increasing number of developments, reflections, and opinions [76, 77]. Clinical guidelines [78, 79] remain an evolving system, reflecting or not the GRADE approach [80, 81].

The GRADE Working Group underlines several advantages of GRADE, like clear separation between the quality of evidence and strength of recommendations, explicit evaluation of the importance of outcomes of alternative management strategies, or transparent process of moving from evidence to recommendations among other GRADE characteristics [71]. Numerous rating evidence and grading systems exist, like the SORT system (Strength of Recommendation Taxonomy) or OCEBM (Oxford Centre for Evidence-Based Medicine) [72].

Hierarchy of evidence, levels of evidence, or GRADE systems of evaluation remain evolving fields and they also have weaknesses [73, 74]. Norris and Bero [73] conclude that a considerable amount of work remains. Critical and independent evaluation of GRADE and other approaches, management of intellectual interests, encouragement of critiques of existing approaches and testing new ideas, and willingness to recognize deficiencies in methods and to address them may and will be subject of change. They conclude that without these changes, GRADE is not sustainable as a leading approach for developing guidelines [73].

Shouldn't grading, meta-analyzing, and systematic reviewing of evidence go well beyond the evaluation of cause-effect relationships? Certainly! It all depends on how broad our vision of EBM will be in the future.

#### Scientific method and its place in EBM

Production and uses of evidence, as well as its evaluation are domains of uses of qualitative and quantitative research. We reason deductively, inductively, or abductively depending on the nature and objectives of the health problem. The scientific method underlies research projects, research reports in medical articles and elsewhere, and it is behind various types of communication.

The scientific method includes the following steps (expanded [26]):

- Identification of the problem of interest,
- Formulating research questions,
- Specifying objectives of research and other activity,
- Formulation of hypotheses,
- Definition of health phenomena of interest, their components, and activities
- Making predictions,
- Specifying types of study,
- Analyzing observations and experience,
- Detection and control of errors, biases, and fallacies,

- Identification of falsifiability (cases when conclusions do not apply)
- Replication of study to confirm consistency,
- Making decisions, recommendations, and directions what to do in future research and practice,
- Taking actions,
- Evaluation of what was done and its results

Scientific method and its steps represent to a variable degree of completeness building blocks of research grants applications, reports of research results, ensuing medical articles, as well as various guides and guidelines to activity both in research and practice: implicitly or explicitly. We have discussed in more detail such necessary efforts elsewhere [26].

Formulation and uses of the scientific method in general [82-84] as well as in medicine [85] evolve and they are subject of continuous attention.

If we want our practice and research to be more rigorous and "scientific research-based", shouldn't we practice and know EBM itself in a similar way?

Let us conclude by stating what we might expect and do with EBM in the future

Evidence-based medicine, *medicina ex testimoniis*, is still a very young domain compared to its historical components and contributions, such as epidemiology, clinical epidemiology, biostatistics, ethics, and other related philosophy domains.

It is perhaps too early to undertake a systematic review and research synthesis of EBM endeavours and activities themselves. However, it may and should be, considered in the future.

As with any other activity in the domain of health, we are interested in:

- Structure (how it is all organized),
- Process (how does it work as designed), and
- Impact (what is the effect of such an activity)

So far, we know

- How EBM activity is organized (its structure),
- Less about its functioning (the process of an organized system), and
- Almost nothing so far on positive or negative impacts on our patients and on us as well. Yet about its impact (better effect on patients and on us as health professionals and our activities) as well.

If we examine through the eyes of health economists the practice of EBM as a health activity with a specific program and objectives [26,44], we may consider evaluating what the practice of EBM medicine is

in terms of:

- Efficacy, i.e. result under ideal conditions (a “can it work” question),
- Effectiveness, i.e. result under prevailing, ordinary or customary conditions and patients (a “does it work” question),
- Efficiency, i.e. effects in proportion to the effort (human, material resources, time) in healthcare activity (a “what does it cost for what it gives” question), and
- Equity, i.e. fairness and impartiality of EBM care (as one of its possible causes). In other words, we want to know “how well the costs and benefits of EBM are distributed”.

It may still take time to develop and better understand such aspects of care.

No one is to blame for the lack of knowledge regarding the impact of EBM. More time is simply needed for the process and impact of EBM to appear to develop with all its measurable effects. Knowing now its structure better than process and impact is more reassuring as a good step done.

Evaluating EBM itself, how much will its mastery and practice improve patients and/or community health? Will EBM practice make physicians feel more comfortable? Will EBM practice improve communication, understanding and sharing of health problems and interaction between patients and their surrounding professional environment of care? It is probably too early to answer these questions. Years from now, it will most likely enrich our conviction that we are doing the correct and better thing. Will all this be more than a ‘it makes sense’ feeling?

It will be interesting to see if developing and practicing EBM in the future will lead to improved patient health, physician professional practices and expertise, and patient values and preferences, and not only to the production of evidence itself.

Professional training in EBM also requires professional teaching and training at the undergraduate and graduate levels in other disciplines and domains. Will this happen in current programs or new ones? Time will tell.

There are two reasons to teach and understand EBM and its expanded and expanding methodology:

- Students should realize and understand ‘why, what and how they are being taught all this’
- We, as their teachers, should know ‘how to teach and explain all this, and why?’

Given EBM’s questionable attractiveness and relevance, we expect too much, too fast, and our expectations and goals may not be fulfilled without modern informal logic, argumentation and critical thinking as contemporary ways of producing and sharing evidence. They may, however, be fulfilled by using and by evaluating benefits

of such endeavours for an individual patient and the community as well. Gathering such information will still take time.

This perspective is not only intellectually and professionally exciting, but it is also possibly necessary.

Aren’t evidence-based medicine and other evidence-based health professions today, such as nursing, dentistry, public health, as well as other initiatives and domains often called ‘complementary’ or ‘alternative’, such as chiropractic, homeopathy, or naturopathy, subject to systematic rigor and expertise?

If we direct our attention in a balanced way not only towards research evidence, but also towards the physician’s clinical experience and the patient as a beneficiary of such experience (as EBM is also defined), more will certainly be done in the domain of professional experience by taking into account, among other things, on the patient side, the patient’s genetic content or other molecular and cellular analysis tools like molecular diagnostics, imaging and analytics. That is, for example, the focus of precision medicine [86].

Don’t we all share the same philosophy, ways of thinking, and goals? We believe so.

Although further information regarding the role of clinical epidemiology, biostatistics, informal logic and reasoning in EBM is currently available, we have not found so far in the current literature more insights about the sharing of experience and the role of perception in the EBM domain. Also, we still do not know enough about whether EBM practice influences health professionals’ perception, judgment, decision making and evaluation and whether such and other kinds of EBM practice are better than their alternatives.

Besides a rigorous scientific approach and methodology, sensory perception (sensation) such as seeing, listening, palpating, smelling, vocally communicating and sharing may play a variable role in evidence study and its development, uses, effects and evaluation of evidence in EBM. What is the role of perception as ‘the organization, identification, and interpretation of sensory information in order to represent and understand the presented information or the environment’ [87, 88] in the development and uses of evidence in EBM? Do we know?

Our attention to what we are doing and thinking regarding the benefits of an increasingly beneficial modern philosophy and its domains as reflected above will certainly grow.

As for evidence itself, we know now more than ever about cause-effect relationships such as between treatment and cure or prevention, or between exposure to noxious factors and occurrence of disease. We know much less about diagnosis and health and disease courses. Shouldn’t we work on this?

All our conclusions and recommendations are rooted in our current reflection. They are not yet supported by systematic follow-ups of EBM state, past and present evolution, developments, completeness of information, and evaluation of its practice and effects across the

larger or whole experience across health professions. Let us try to enrich such valuable information together. It will not be easy, given the sheer number of books, articles, and other reports about the EBM experience, but this should not discourage us.

Some ways to proceed are proposed in this essay. What could be added, expanded, and otherwise said better? Readers may have their opinion in these matters.

Only a systematic review, analysis, and synthesis of current and evolving EBM experience (this has not yet been done) will bring us better 'evidence about evidence' and information regarding what to do and how to do it in the hopefully not too distant future.

How can we answer our introductory question: Quo Vadis Medicina Ex Testimoniis? Contrary to the original biblical question Domine, quo vadis?, the future of evidence-based medicine appears optimistic. Several beneficial initiatives have already taken place and many more will surely come. As a relatively new domain with a truly appealing name, EBM remains an evolving field to be developed, used, and evaluated as this essay suggests. EBM will not be crucified! Let us all continue to move forward in this context and to the best of our abilities.

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