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Commentary

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The rise and fall of EBM

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Introduction

The rise of Evidence-based Medicine (EBM) has been one of the more remarkable phenomena of the British health scene during the 1990s. Tremendous advances have been made in establishing the EBM brand name, obtaining massive government funding, manoeuvring to a position of unchallenged authority within the NHS managerial and political hierarchy (and its priesthood among the *BMJ* editorial staff)—and promoting EBM as a marketing slogan for lucrative conferences, courses, books, journals, people and organizations.

The 'fall' of EBM is rather different; since it involves a quasi-theological 'fall from grace': a loss of clinical, scientific and educational integrity, even to the point of a decline into a 'state of sin' (if seeking and clinging to power at any costs is seen as sinful). This moral decline would—in the normal course of events—be followed in due course by loss of status, income and power. However, the EBM barnacle may prove difficult to dislodge now it has a grip on the minds of politicians and managers. Certainly, the phenomenon is ripe for re-evaluation.

Clinical Epidemiology to EBM—what's in a name?

Initially, EBM grew as a bottom-up approach to continuing medical education under the name of Clinical Epidemiology (CE).[1] Clinical Epidemiology was based upon emphasizing the potential of epidemiological information for guiding clinical practice. In retrospect, the epidemiological emphasis was exaggerated and its problems and insufficiencies were never properly addressed—nonetheless CE was widely regarded as a refreshing approach that blew away cobwebs and let in some light. In particular, CE mobilized the enthusiasm of people to come to grips with interpreting clinical data for themselves for use in their own clinical practice.

But the advocates of clinical epidemiology were ambitious of influence, and grew impatient. A significant change came when the name 'Evidence-based Medicine' or EBM was coined in 1992.[2] Although the term involves a calculatedly dishonest misrepresentation,[3] this new nomenclature was an immediate rhetorical success. EBM effectively labelled itself as rational, objective and altruistic—while any opposition was implied to be promoting a practice that is illogical, self-indulgent and *opposed* to the evidence. A set of mission-statements was proposed as definitive of EBM: these took the form of platitudes which could not be opposed by any rational person;[4] yet these content-free proclamations served to camouflage controversial ways of operating and marginalize opponents as wicked or crazy.

EBM as a tool of management—a 'quality-assurance' system

It is doubtful whether such a crude, question-begging tactic as naming oneself 'evidence-based' would have had much influence upon clinicians and medical scientists. However, the proponents of EBM cleverly bypassed doctors and appealed directly to politicians, health service managers, public health professionals and the newly expanded ranks of

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'number-crunchers' (epidemiologists, biostatisticians, information technologists, health economists, etc.). Such personnel had emerged in enormous numbers as a consequence of the centralizing and regulating tendency of the NHS reforms, and they were seeking tools of legitimation.[5]

EBM was seized upon by managers and their myrmidons, and promoted with a massive injection of publicity, money and organizational infrastructure. The consequence has been an astonishing transformation from the clinically-led approach of CE to the managerially-led approach of EBM. Instead of a bottom-up system using epidemiology to inform good practice, the NHS bureaucracy has introduced a top-down system which employs statistical data to define, prescribe, monitor and enforce specific practices upon clinicians.[6]

It seems likely that NHS management were so quick to advance EBM because they saw its potential as a 'quality assurance' tool capable of regulating, not just medical practice, but the whole of the health service. Traditional managerial and audit methods require a conveniently measurable output, and clinical services are notoriously difficult to quantify. However 'quality assurance' audit concentrates not on performance but on the *system*—quality is defined and measured in terms of the operations of a control and feedback system.[7]

The 'evidence-based' movement in the health service provides exactly such a quality assurance system. As the 'implementation' moves on from evidence-based medicine, through evidence-based education, research and development, nursing, public health and health policy, we are witnessing the creation of an interlocking system to comprise an 'evidence-based' health service. This would incorporate *all* aspects of health service practice, and be based-upon a process of standardized monitoring and interpretation of information. The NHS would comprise a set of 'transparent' and measurable activities, regulated by audit of the EB system. And since the only aspect of quality assurance *not* open to challenge is the legitimacy of the quality assurance system itself,[7] EBM would permanently be insulated from criticism.

The trouble with EBM

Criticisms of EBM are essentially three-fold, and concern methodology, personnel and the ethical framework.[6] EBM involves the elevation of certain methodological principles—in particular the large randomized mega-trial and (more recently) meta-analysis—to 'gold standard' status as criteria against which all other types of 'evidence' should be judged. This doctrine excludes or relegates to inferior status the role of implicit or unquantifiable factors such as clinical judgment, experience, qualitative factors, views of patients and the demands of the clinical consultation. In particular, EBM displays a long standing tendency towards anti-scientific rhetoric[1] which ignores the foundational role of laboratory and clinical sciences in the history of therapeutic innovation and advance.[8]

The misplaced emphasis on large databases as offering best guidance for clinical practice leads on to an implicit belief in the primary role of information and statistics. Consequently, the nature of clinical expertise has been redefined by EBM. It has traditionally been assumed that the best people for deciding upon clinical matters are those with clinical training, experience and a substantive knowledge of health and disease that ideally includes having performed research in the field. Such experts are usually doctors. But EBM regards clinical expertise as mainly a matter of collecting, analysing and summarizing research done by other people. Hence the final arbiters of EBM practice are 'systematic reviewers' drawn from biostatistics, epidemiology, health economics and other 'Infostat' disciplines.[5] Clinical advice has been neatly bypassed and subjected to external performance criteria. This can be regarded as the latest move in an 'audit revolution' which has swept the UK Public Sector during the past couple of decades.[7]

Suffice it to say that there is not a shred of evidence to suggest that an understanding of medical research and its interpretation for practice can be reduced to the routine application of checklists and formulae. However, doctors are notoriously awkward and intransigent individuals supported by considerable professional solidarity—while Infostat technicians are easily trained, deployed and controlled. Hence the third, and ethical, criticism of EBM. In a nutshell, EBM involves a takeover of the clinical consultation by an alliance of managers and their statistical technocrats who are empowered to define 'best practice'. The upshot is that the EBM apparatchiks acquire substantive influence over millions of clinical consultations, but without any responsibility for the clinical consequences.

In bed with the *BMJ*

One of the most striking features of EBM has been the intimate relationship it has forged with the *British Medical Journal* and its editorial staff. More than any other factor, this has gained EBM doctrines the academic credibility they needed to persuade the NHS hierarchy of their validity.

The support of the *BMJ* for EBM began with explicit endorsement by the editor and continued

with the commissioning of iterative series of 'how to do it' articles on EBM techniques such a randomized trials, systematic reviews, meta-analyses, 'critical' reading skills and so on *ad nauseam*. *BMJ* championship has extended to books on the topic, and a whole stable of generalist and specialist EBM journals (from the *BMJ*'s publishers) which have been advertised using the *BMJ* editorial columns. *BMJ*-endorsed conferences have been organized to promote the implementation of EBM policies.

EBM and *BMJ* got into bed together—both ideologically and financially—in a way and to a degree which is unprecedented. It is also astonishing, given EBM's pronounced pro-managerial and anti-clinician stance and the *BMJ*'s proper role as the main organ of British medical opinion. The *BMJ* now devotes massively disproportionate attention to the views of a minority lobby of largely non-medical opinion. Indeed, the whole publication policy of the *BMJ* has shifted towards 'second-order' publications on statistics, epidemiology, health economics, management, policy and politics, health promotion—anything, it seems, except for articles by or for clinicians. In essence, the *BMJ* has become the house journal of the EBM workforce.

Above criticism

Perhaps the most worrying feature of EBM, and the one which most clearly betrays its non-scientific nature, is the fact that its advocates do not answer criticism. A magisterial attitude of lofty disdain for contradictory viewpoints is the norm in government circles where power is asymmetrically distributed and the agenda is controlled. Similarly there has not been any substantive debate about EBM, merely a one-sided onslaught of NHS/*BMJ*-subsidized propaganda. Dissenting views are muzzled, marginalized, met by non-sequiturs, or disappear into an echoing void. Backstairs wheeling-and-dealing has substituted for public discussion.

Avoidance of debate is related to the fact that EBM has moved directly from being a 'bright idea', to the *implementation* of this idea—leaving out the usual period of critique, evaluation and testing. The proselytizing zeal of EBM proponents has attracted comment.[9] EBM enthusiasts see its benefits as self-evident; hence any disagreement is merely indicative of a failure to understand—or else due to a more sinister determination to practise medicine in a *non*-evidence-based manner.

It is hard to estimate the number of people who are already employed on EBM-related activities, or benefit financially to a substantial extent, but the trough is deep and its beneficiaries probably exceed ten thousand in number. There are direct employees of the actual EBM group and its satellites (official and unofficial), the Cochrane Collaboration, the NHS Centre for Reviews and Dissemination; but the main recipients of bounty are the host of researchers employed by university departments and supported by grants derived from NHS Research and Development, Health Authorities and the Department of Health.

All this after just a few years. The prospect of grabbing a thick slice of this still-expanding cake has surely been a crucial factor in doctors acquiescing to EBM—and deterring overt criticism. Perhaps the fear of alienating a rich source of patronage could account for the otherwise inexplicable mismatch between the near-universal, privately-expressed suspicion of EBM among clinicians, and the scarcity of published articles expressing this viewpoint?

Beyond EBM

EBM stands revealed as statistical rather than scientific; its success more to do with managerial dominance than medical desirability. Any modest initial benefits have long since been outweighed by structural damage, wasted expenditure, and clinical power without clinical responsibility. EBM has advanced audit into the consultation, and offers the prospect of an 'evidence-based' health service forcibly unified under a single 'quality assurance' system—easily regulated by politicians, bureaucrats and their statistical technicians.[4,5,7]

Beyond EBM there lies a whole world of good practice and real evidence which has been largely forgotten or obfuscated by rhetoric. Alternative, more effective models of health service organization are available—including self-regulating professionals embedded in a facilitating administrative structure; while superior modes of clinical investigation would emphasize rigorous clinical science, close observation of practice including individual case studies, whole population studies and representative population sampling—with mega/meta-population epidemiology again relegated to its proper, subordinate, role of precise measurement.[4,5,8,10]

The time is ripe for the 'evidence-based' mantra to be silenced and dissenting voices to be heard. If EBM does not fall spontaneously, it may need to be pushed.

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