



Evidence-based medicine and the NHS: a commentary

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DECLARATIONS

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Introduction

Evidence-based medicine (EBM) is the systematic, scientific and explicit use of current best evidence in making clinical decisions. Whilst the terms 'evidence-based' and 'evidence-based medicine' did not enter the medical literature until the early 1990s,^{1,2} it was Professor Archie Cochrane and his 1972 book *Effectiveness and Efficiency: Random Reflections on Health Services*³ that started the realization that patient care should be based not on the individual beliefs of the doctor, but on objective evidence. Proponents of EBM acknowledge that clinical experience coupled with scientific knowledge of pathogenesis and clinical interventions are crucial to medical practice but suggest that treatments should only be administered if there is adequate evidence of benefit. Most frequently, this evidence should take the form of systematic reviews and meta-analyses that collate, summarize and clarify evidence gathered from differing sources, particularly randomized controlled trials. An entire scientific discipline has arisen not only to create the evidence base but to formulate guidelines, scales and scoring systems to interpret and stratify the clinical and scientific evidence.⁴⁻⁷ Not all are convinced of its merits, or at least rail against some of the dogma that has on occasions surrounded EBM,^{8,9} but regardless of what one believes about its application, EBM reflects an ongoing desire amongst doctors and other healthcare professionals to improve the quality of patient care.

Up until very recently, EBM has focused on discerning differences in patient outcomes (such as mortality, morbidity and length of stay) when varying treatment approaches are used. The quality of care that a patient receives in the NHS, however, encompasses much more than just its effectiveness or outcomes; it needs to measure efficiency, acceptability, legitimacy and equity, amongst other things.¹⁰ Likewise, in order that the integration of evidence-based interventions occurs across all levels of the NHS, to ensure predictable systemic improvement in quality, EBM has to go further than where it is currently.

Practising EBM

Traditionally it has been the clinician who has taken responsibility for the patient receiving care that is both up-to-date and based on evidence of favourable risk-benefit analysis. This approach relies on the clinician actively engaging in their continued professional development and continuously keeping abreast of the research literature, attending conferences and engaging in multi-disciplinary team practice where applicable. The process has been incentivized by continued medical education accreditation, which forms a component of appraisal but has not been compulsory for recertification or revalidation. Naturally there is variability in the degree to which this process is fulfilled, and enablers to improve dissemination and implementation of evidence across the whole healthcare system and all those within it are needed. Existing strategies include the quality and outcomes framework – the largest pay-for-performance programme in healthcare – which has successfully targeted preventative medicine in primary care. Some authors have suggested that carefully targeted expansion of this programme could still further increase its 'quality' impact.¹¹ Elsewhere, in order to improve dissemination of evidence and facilitate the accessibility of treatments for patients, the independent National Institute for Health and Clinical Excellence (NICE) was created. NICE regularly produces national guidance on the promotion of good health and the prevention and treatment of ill health¹² and in particular has considered quality of life issues even when the cost-effectiveness of treatments is debated.

Within specialties we have seen the emergence of advisory boards that are responsible for producing frequently updated guidelines, based on high quality evidence, as a source of validated best practice.¹³ This resource is not only useful for those who are fully qualified but helps those in training to adopt an evidence-based approach to practice.

Assessing the evidence base in certain areas is not always easy; whilst there is a wealth of evidence surrounding acute interventions, the

evidence is less clear regarding certain public health interventions and long-term condition management. We must work to increase the evidence base in these areas, to help those who commission services aimed at improving health and well-being and to enable collaboration between local authorities and primary care trusts. Furthermore, the evidence base has too often been the sole reserve of the clinician, re-enforcing the information imbalance in the doctor-patient relationship and disempowering patients. Access to information and evidence must not therefore be restricted solely to professionals; patients and the public should have access to evidence in a form that is easy to use and empowers them. NHS Choices has started to address this issue,¹⁴ but more is needed to ensure patients are better informed and thus better equipped to be involved in service design and delivery.

Further efforts to enable the better integration of an evidence-base into every aspect of healthcare are important for continued improvements in quality of care. There is the question of whether responsibility for this should sit with every individual or be facilitated through an independent organization or key located leadership roles? Additionally, while incentivizing good practice has demonstrated benefit, incentives to reduce wastage of resources and discourage non-evidence-based care may also be beneficial.

Delivering EBM

As discussed, the translation of available evidence into everyday healthcare provision can be the limiting factor to 'frontline' quality improvements. Apart from healthcare professionals, the healthcare system itself and its influence on the delivery of care need to be considered.

The delivery of healthcare within an evidence-based quality framework will inevitably involve a benchmarking process. The very act of measurement helps to establish current practice and sets a standard against which improvement can occur. It is important that we confront the realities of practice and benchmarking assists in identifying inequalities between providers at a local, regional and/or national level. Appreciation of the causal factors will discover pockets of best practice and local innovation that can then be disseminated more widely. What is most important is that the methods used both for analysis and display of performance data for benchmarking are robust and themselves evidence-based, and that the measures used need to be accepted by the majority

of those involved as contributing to the overall quality of care that patients receive.

Health service research has identified the potential benefits of centralizing care; high volume institutions and clinicians can under some circumstances achieve improved outcomes for patients.¹⁵ As a result of work initiated by the Institute of Medicine in America,¹⁶ improved methods for evaluating the volume-outcome relationship have highlighted important determinants of improved outcomes for patients, concerned with healthcare structural and process of care variables. Their findings enforce the importance of the interaction of the institutional infrastructure, the clinician and all of the allied healthcare professionals on the quality of care delivered. It is the alignment of all of these necessary components that help to ensure stability and success when restructuring or reconfiguring healthcare services. Health inequality research has explored differences in health status between population groups to identify where potential health inequity arises and has realized that there exists a systematic trend to health inequality; inequalities in health do not occur randomly.¹⁷ There are a number of influences on health at both the individual and population level, but common to both are health system characteristics. Research into inequality in healthcare delivery thereby tries to identify if there is equity in access and utilization of healthcare services. Furthermore, inequality/inequity research aims to 'elucidate the genesis and characteristics of inequity in health for the purpose of identifying factors amenable to policy decisions and programmatic actions to reduce or eliminate inequities'.¹⁸ The application of an evidence base to inequality research can therefore affect public health, community care and hospital care, and influence the structure and processes within the NHS and their systematic relationship with characteristics such as geography, ethnicity and social deprivation.

Translating an evidence base into the everyday structure and processes of a healthcare system is feasible, but made difficult by the variation that exists across healthcare systems and between healthcare providers. The application of conceptual frameworks for designing health system reforms and engaging contemporary managerial capabilities, however, can overcome some of the difficulties and recognizes the need for a 'balanced portfolio approach to quality improvement' that combines professionalism, government and market factors to generate sustainable quality change.¹⁹ Furthermore, we can use an evidence base to better understand the structural enablers

for driving forward multidimensional quality improvement agendas in a contemporary NHS. These organizational characteristics include executive management, including senior leadership and board responsibilities, culture, organizational design, incentive structures and information management and technology.²⁰

Conclusion

EBM has moved on considerably from its traditional meaning and contemporary definitions need to reflect a modern, high-quality healthcare system. I believe the application of an evidence base to the elements that have been highlighted in this article, and others, will beneficially drive forward healthcare reform over the coming years and resultantly further improve the quality of healthcare attainable within the NHS.

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