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Is Evidence-Based Medicine Broken?

LONDON – Evidence-based medicine, as David Sackett and his colleagues wrote in 1996, is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients." At first glance, this seems entirely logical; indeed, many would say that this simply could be called "medicine." But the approach is generating considerable controversy, with many asserting that it is "broken." Last month, when the British Medical Journal asked its readers whether evidence-based medicine is malfunctioning, the responses were almost evenly split: 51% answered positively, and 49% negatively.

The controversy stems from the kind of evidence that is used. Sackett implies, but does not stipulate, that epidemiological evidence (findings from randomized controlled trials and large-cohort studies carried out over many years) should underpin doctors' decisions about patients – and, one hopes, in consultation with them.

Epidemiological research studies address questions like, "If 1,000 people with type 2 diabetes were randomly allocated to four groups of 250 people that each received either no treatment (or a placebo), drug A, drug B, or drug C for ten years, how would it impact survival rates, and what, if any, complications and side effects would there be?" If the trial is conducted properly – it is large enough; people are allocated in a truly random way; and "blind" assessments of the outcomes are conducted – the results should be reliable.

Consider the following scenario: Ten-year survival rates for the four groups are 70%, 71%, 80%, and 82%, respectively, and the proportion of people developing troublesome side effects is 1%, 2%, 5%, and 50%. Most people trade a small reduction in the chance of survival for a large reduction in the chance of adverse effects; in other words, they would opt for drug B.

In short, evidence-based medicine uses the science of epidemiology to create a clear and structured set of decisions about tests and treatments for individual patients, with the evidence often – and increasingly – being summarized in the form of clinical guidelines. This is problematic for two main reasons.

For starters, the emphasis on randomized controlled trials as the "gold standard" of evidence has meant that any drug that has outperformed a competitor in a trial may now be classified as "evidence-based." Look no further than the glossy ads in medical journals to discover drugs you did not know you needed for diseases that you never knew existed, such as "female sexual arousal disorder" and "adult attention deficit disorder." And how many drugs are tested against more natural non-drug therapies – yoga for high blood pressure, for example, or brisk walking for diabetes – before being licensed?

In a sense, evidence-based medicine has been a victim of its own success, having fueled an exponential increase in research trials in the 20 years since it began. One does not need a PhD in cognitive psychology to recognize that overloading doctors working in a high-stress, time-constrained environment with a mass of guidelines and research results will lead to errors.

And the attempted solution – hard-wiring the guidelines into computerized “decision support tools” – has been largely a flop, given computer models’ inability to accommodate messy, real-world clinical practice. For example, generations of medical students have memorized the textbook features of celiac disease for their examinations. But your Aunt Nora’s celiac disease has not read the textbook.

Indeed, only Aunt Nora can tell you how her celiac disease behaves. She also happens to be opposed to taking blue-colored pills. And she insists that, years ago, when she took drug x, it made her feel like a new woman – despite the fact that, in 1,000 patients, drug x has demonstrated, on average, no effect. The computer model’s treatment recommendations would probably not work for Aunt Nora.

But this does not mean that evidence-based medicine is broken; it simply lacks the needed maturity. High-quality randomized trials are as important now as they were at the time of the evidence-based movement’s founding. But the system must be shaped by the doctor’s judgment and the patient’s individual experience.

It is time to stop overloading doctors with evidence and deploying fast-talking industry salespeople to manipulate them with clever marketing pitches. Instead, researchers must optimize the presentation, summarization, processing, and application of epidemiological evidence, using good visualization techniques that improve doctors’ understanding of complex statistics.

At the same time, research-derived facts about the average patient must not outweigh individual patients’ observations of their own bodies and illnesses. New processes for capturing and accommodating patients’ personal experiences – which are typically idiosyncratic, subjective, and impossible to standardize – would go a long way toward ensuring that each patient receives the right treatment.

The medical community must develop the science of shared decision-making, in which epidemiological evidence informs conversations about what matters to the patient and how best to achieve those goals. In doing so, we can take evidence-based medicine beyond its current limits and develop a holistic approach that accounts for patients’ experience of illness and promotes good clinical practice.

Read more at http://www.project-syndicate.org/commentary/is-evidence-based-medicine-broken-by-trish-greenhalgh-2014-10#kmBX8fYXGKevh4Rx.99