The importance of clinical outcomes in medical education research

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In the 1980s, doctors treated patients with antiarrhythmic medications to suppress premature ventricular depolarisations, thereby preventing life-threatening arrhythmias – until the Cardiac Arrhythmia Suppression Trial (CAST) found that the use of those medications prevented the arrhythmias, but killed the patients in the process! CAST taught us the important difference between clinical outcomes that matter (death) and intermediate outcomes that do not (ventricular depolarisations). Twenty years later, an emphasis on outcomes research is bringing this perspective to medical education. As a recent JAMA article posed, ‘If medicine has a high threshold for evidence of clinical care, why is there no corresponding threshold for educational effectiveness?’

The current interest in outcomes research in medical education stems from a convergence of influences – evidence-based medicine, the quality movement, and increased accountability. Evidence-based medicine, with an emphasis on rigorous study design and critical evaluation of research, raised expectations in health care. As the American Association of Medical Colleges emphasises, the critical role of medical education in providing quality of care, and the American Board of Medical Specialties has revamped its criteria for board certification to include a greater emphasis on quality of care. As the UK General Medical Council states, ‘the aim of all stages of medical education is to improve the health and the health care of the population.’

Quality measures are another increasingly important influence, as doctors are increasingly measured on quality outcomes, and UK general practitioners are now being paid incentives based on measures of their quality of care. A recent report by the American Association of Medical Colleges emphasises the critical role of medical education in providing quality of care, and the American Board of Medical Specialties has revamped its criteria for board certification to include a greater emphasis on quality of care. As the UK General Medical Council states, ‘the aim of all stages of medical education is to improve the health and the health care of the population.’

Calls for greater accountability have forced many government agencies to examine the impact of medical education programmes on health outcomes, revealing little association between funding for these programmes and improved health care. In the UK, the Department of Health spends over £1 billion per year on medical education levies and US Medicare payments for graduate medical education total almost $8 billion. Without stronger evidence to show the health benefits of these investments, the continued support of such educational endeavours may be jeopardised.

Research in medical education has been slow to examine clinical or health outcomes. Less than 1% of research articles published in medical education journals measured clinical outcomes of patients. Instead research has focused on educational, or process outcomes – learners’ knowledge, skills, and attitudes. While it is clear that these educational outcomes are necessary, they may not be sufficient for the delivery of high quality care. Research that begins to explore the connection between educational outcomes and clinical outcomes in patients has been missing. Although developing clinical outcomes research in medical education will require new theoretical models and methodologies, education researchers cannot ignore the calls for relevant, clinically important, and quality-driven measures in their research.
We must demonstrate that quality improvement is not only about systems improvement, but also educating and training individual doctors who can work optimally within those systems.

The medical education community understands the importance of evaluation and research. The mantra that ‘evaluation drives curriculum’ demands that we reconsider medical education evaluation tools and outcome measures if medical education is to be rightly focused on the final product – doctors who deliver high quality health care. Current measures for curricular success (such as learner satisfaction) may have little or no bearing on the ultimate goal of medical education. Novel learning designs and interventions in medical education should be supported, but they must be evaluated in a contextual model that demonstrates the effect of these innovations both on educational outcomes and outcomes that are relevant for clinical care.3

By beginning to examine these connections, medical education can rescue itself from the spiral of poor funding for education research. Researchers, by making clear the link between medical education and quality of care, will make their proposals more attractive to funding agencies. Although there are currently few options for funding medical education research, there is immense interest in studying how to improve health care and patient outcomes. At the Agency for Healthcare Research and Quality there is a growing realisation that we cannot emphasise the importance of health care quality and patient safety without the examination of the undergraduate and graduate medical education processes that drive these more distal outcomes. While it may seem obvious that medical education plays an important role in quality health care, we must demonstrate that quality improvement is not only about systems improvement, but that it also requires educating and training individual doctors who can work optimally within those systems.

Health care has changed significantly since the days of the CAST trial. It is time for medical education research to acknowledge the limitations of learner-focused educational outcomes and stretch for evidence that evaluates medical education against patient-oriented clinical outcomes. Learners deserve to be trained in an educational system that is at least as evidence-based as the medicine we teach them.

The views expressed are those of the authors and no official endorsement by the Agency for Healthcare Research and Quality or the Department of Health and Human Services is intended or should be inferred.

REFERENCES