Can we use quality improvement methods to attribute causality: lessons from epidemiology

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Background

• One of the challenges to the uptake of quality improvement (QI) initiatives is the credibility of the evidence for the changes
• This credibility depends on the degree of confidence that changes in the measured outcomes are attributable to the initiative’s specific interventions
• Establishing a high degree of assurance that there is a causal link between interventions and outcomes is an essential first step in determining whether an innovative improvement concept is ready for spread and scale up
• Establishing causation when QI interventions are complex and must be applied in complex systems such as health care settings is challenging
• We present a framework for causation [1] that, when coupled with the QI methods used to drive change, may overcome this challenge of attribution of causality in QI

Discussion

• Causality is a problematic area in complex systems, and especially when complex interventions are undertaken
• QI operates in such a field, and thus faces difficulties in establishing cause and attributing changes observed to interventions made. This in turn makes decision making about which QI initiative to adopt hard
• The Bradford Hill Criteria with their roots in aetiology of disease have a natural alignment to healthcare
• Which criteria matter the most?
• QI methods used to promote change can be utilised to attribute cause
• We ask researchers in QI: were Bradford Hill to read papers applying QI methods, and hold them to the light of his criteria, would he determine causation?
• Researchers can ask themselves this question and detail how the criteria are met, thereby providing more confidence in findings, and help to identify the necessary components of their interventions

References


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