Deimplementing Continuous Pulse Oximetry in Patients With Bronchiolitis—What Are We Waiting For?

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The use of continuous pulse oximetry among patients with mild to moderate bronchiolitis, in particular children not receiving supplemental oxygen, is discouraged by current national guidelines. Nevertheless, recent evidence describes high rates of guideline-discordant pulse oximetry practices and yet fully supports the safety of decreased monitoring. Schondelmeyer et al explore the feasibility and acceptability of 2 traditional quality improvement (QI) strategies, audit and feedback and educational outreach, for deimplementing continuous pulse oximetry in patients who are not receiving supplemental oxygen, as recommended by national guidelines. These strategies were rated as acceptable, appropriate, feasible, and safe by clinicians and nurses at very high rates, with generally 90% or more of the respondents agreeing or strongly agreeing on almost all assessments. Furthermore, use of guideline-discordant pulse oximetry declined from 53% to 23% during the study period when compared with historical controls, indicating alignment of self-reported knowledge and attitudes with actual behavior.

Decades of clinical research on acute viral bronchiolitis have failed to identify diagnostic or therapeutic strategies that alter the course of illness, leaving supportive care as the mainstay of evidence-based therapy. Compliance with national clinical practice guidelines for bronchiolitis appears to be improving over time in the US, with reductions in low-value diagnostic testing and treatments observed. However, the mechanism for these improvements remains poorly understood. The effectiveness of guidelines in improving clinical care has been questioned for some time. Specific to bronchiolitis, a plethora of published efforts has led to the idea that the QI movement may be a driver of trends toward increasing guideline compliance, although confidence in asserting cause and effect based on existing literature remains low. Nevertheless, there is at least a temporal association for increasing evidence-based guideline compliance and the volume of published scholarly QI in bronchiolitis.

The study by Schondelmeyer et al offers several points for discussion as we negotiate the emergence of scholarly QI as a field. First, these results provide direct reassurance that QI promoting guideline-concordant behavior around pulse oximetry is now highly acceptable. Pulse oximetry technology was adopted rapidly for most hospitalized patients with bronchiolitis without evidence that such monitoring was universally beneficial. It has taken decades to prove the negative, that is, to refute the unproven idea that the addition of this new technology adds value for all patients. Despite high-quality randomized trials demonstrating the safety of less-intensive monitoring, an aura of improved safety continues to be associated with universal monitoring. The study by Schondelmeyer et al clearly demonstrates wide acceptance around simple interventions to reverse the universal application of this technology, and their results should help to allay lingering anxiety around deimplementation of continuous pulse oximetry.

The question of how this study adds to our belief that QI strategies are the cause of the observed effect is more complicated. At face value, the more than 50% reduction in guideline-discordant continuous pulse oximetry achieved through this work during a single bronchiolitis season should be recognized as a significant achievement. However, with the evolution of scholarly QI as an area of academic focus, debate has emerged around the value of such uncontrolled endeavors. Inability to firmly establish cause and effect from studies using traditional QI methods has been frequently cited as a weakness, with secular trends potentially confounding actual intervention.

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effect. Some experts have suggested that QI must include elements observed in clinical research, such as control groups and randomization. Others have identified specific strengths of scholarly QI as a distinct field, including the incorporation of realistic contextual elements that are often controlled away in other types of research. Application of the Hill Criteria for causation has been proposed as one way of addressing this potential confounding; in this study, Schondelmeyer et al demonstrate a strong, specific, temporal, and plausible response to their chosen interventions, which should increase confidence in their approaches and prompt evaluation in other clinical settings. Such results support the utility of scholarly QI and should provide motivation for clinicians to continue such efforts in their specific context.

In many ways, the major contribution of this work may be seen as the clear acknowledgment of the psychological barriers to guideline-compliant practice when deimplementation is the goal. Although implementation science has evolved over time with the support of a robust evidence base, current research around effective deimplementation is much more limited. Deimplementation appears to be challenged by specific psychological barriers associated with giving up existing practices, which differ from those associated with adopting new practices. Schondelmeyer et al demonstrate that traditional strategies central to many implementation frameworks may feasibly be incorporated into deimplementation efforts and play an important role in effecting change. The methods used to assess deimplementation strategies in this study, including measures targeting perceived safety, norms, and intentions among diverse members of the patient care team, highlight perceptions that may be influenced by these psychological barriers. Studies such as this one, assessing multiple facets of deimplementation strategies to provide insight into psychological responses to the work, will be critical in building an evidence-based approach to the discontinuation of low-value practices.

The current study is also an important step in the natural progression of scholarly QI in efforts to address continuous pulse oximetry in routine bronchiolitis. The strong, randomized trial evidence to support guideline-concordant care had been somewhat overshadowed by discomfort about the entrenched nature of guideline-discordant care. Schondelmeyer et al have given us direct evidence that hesitancy around deimplementing pulse oximetry in patients with bronchiolitis may have been overstated or misperceived and have offered a framework to approach the remaining challenges. Traditional QI strategies proved effective and were highly palatable to nearly all staff. Certainly, not every deimplementation study will be this clear cut, but on the question of unnecessary pulse oximetry in patients with bronchiolitis, this study suggests that the logical next question is: what are we waiting for?

ARTICLE INFORMATION
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REFERENCES


