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Sustaining quality improvement during data lag: A qualitative study in a perioperative setting



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ABSTRACT

Perioperative quality improvement (QI) teams face challenges in their work to improve surgical outcomes. One challenge is maintaining engagement in a project until a meaningful trend in targeted outcomes is evident. Our study aimed to identify management strategies that engaged staff in a QI project with a substantial time lag between project implementation and feedback of data. In an American College of Surgeons collaborative, we interviewed clinical leaders from six self-selected community and teaching hospitals and observed four workshops and monthly conference calls over a two-year period (2012–2014). Thematic coding identified three management strategies to give feedback to teams: (1) experiencing “small wins” to demonstrate feasibility; (2) creating new communication pathways to remove obstacles; (3) small group mentorship by an experienced training team that had already achieved improvements in surgical outcomes. Using a combination of strategies, five out of six teams implemented small projects during the lag period, before outcome data was available. Our results caution against using measureable outcomes as the only sign of success—in fact, many

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small signs can be seen before the data lag is over. When data lags are likely, observable incremental steps and support of an experienced team can help build relationships across the organization that will help keep providers in the project.

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Surgical complications, surgical site infections (SSIs) among them, cause substantial morbidity and mortality,^{1–3} presenting a burden for patients and the health care delivery system. The Patient Protection and Affordable Care Act has brought renewed attention to better quality of care in the United States. In the perioperative area, teams have worked to reduce SSIs and other surgical complications,⁴ and performance measurement has been an integral part of this work. However, substantial improvement in performance can take years to detect.

1. Introduction

Traditionally, quality improvement has used process and outcome measures to monitor performance. Process measures have the advantage of quicker feedback; however, the potential for bias from self-reporting, and in some cases “gaming” strategies to satisfy audit requirements, undercut the fidelity of the measures.⁵ In addition, process measures have not been strongly linked to improved clinical outcomes, especially in surgery. For example, in the Surgical Care Improvement Project, studies found that strong performance on several process measures did not improve the targeted surgical outcomes; the measures were retired in December 2014.^{6,7}

Improvement work is shifting from process to outcome measures, but outcomes can have a substantial lag time before data are reported. The American College of Surgeons (ACS) National Surgical Quality Improvement Project[®] (NSQIP)⁸ is a leading surgical registry that provides hospitals with benchmarked 30-day morbidity and mortality rates for select procedures.⁹ Efforts to improve performance on NSQIP measures are bound to the program's reporting schedule and up to a half-year lag time before the surgeon and perioperative team who performed any given procedure will receive feedback on this data.¹⁰ Thus, patient outcomes stemming from deliberate changes in care procedures are not reported to providers until months later, and a meaningful downward trend will likely take years to realize.^{11–13} The delay in feedback can jeopardize continued staff interest in a project.

Therefore, it is important to consider how surgeons, perioperative managers, and quality improvement leaders can work to motivate one another to stay engaged in an initiative during this lag period. The aim of this qualitative study was to study teams participating in a surgical collaborative and identify strategies used to maintain enthusiasm and commitment to the project.

2. Methods

2.1. Background on surgical collaborative and pilot mentor model

The American College of Surgeons (ACS), clinician researchers from the Johns Hopkins Medicine Armstrong Institute for Patient Safety and Quality, and an experienced surgeon and nurse champion organized and supported the surgical collaborative for two years (2012–2014). The collaborative used the Comprehensive Unit-based Safety Program (CUSP)¹⁴ as its improvement framework. Six perioperative interdisciplinary teams from hospitals in the United States and Canada volunteered to participate in the collaborative with the goal of improving their 30-day surgical outcomes for general surgery patients.

The pilot involved a training team, comprising the surgeon champion and nurse champion who had experience in implementing CUSP in a large academic medical center. They used a small group mentorship model to coach the six perioperative teams in adopting CUSP in their perioperative area. The steps of CUSP included educating staff about patient safety, conducting a survey of perioperative staff on potential system defects within their institution, measuring baseline safety culture using the Safety Attitudes Questionnaire through Pascal Metrics,¹⁵ involving a senior hospital executive to facilitate resolution of problems, especially those that required a financial investment, and building an interdisciplinary team to guide further work in reducing complications of surgery (Table 1). The training team facilitated four face-to-face meetings and monthly conference calls to encourage horizontal learning among the perioperative teams. A complete description of the collaborative methods is beyond the scope of this paper.

2.2. Qualitative study

A team of four sociologists from the University of Pennsylvania conducted a prospective qualitative study of the six perioperative teams and training team between October 2012 and July 2014. They sought to identify strategies undertaken by the teams to keep staff engaged in the surgical collaborative during the lag time when data was not available. Lag time was defined as the period between the implementation of a surgical site infection (SSI) prevention bundle and feedback of improvements in infection-related data. Four participating hospitals were large academic tertiary care centers, two were community hospitals, and all six were part of a larger health system (Table 2).

The sociologists followed the perioperative hospital teams and the training hospital team as they participated

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