Surgical Collaboratives for Quality Improvement

Amir A. Ghaferi, MD, MS

KEYWORDS

• Quality • Improvement • Collaboration • Collaboratives • Outcomes • Safety • Culture

KEY POINTS

- The 2 traditional types of quality improvement are top down (usually federal) policy mandates or local, one-off quality improvement projects.
- The melding of large-scale oversight and local quality improvement work has resulted in the concept of collaborative quality improvement.
- The Northern New England Cardiovascular Disease Study Group established some of the grounding principles of collaborative quality improvement, including data feedback and site visits.
- The future of collaborative quality improvement relies on significant human and capital investment from stakeholders to realize the long-term benefits.

HISTORY OF QUALITY IMPROVEMENT

Quality improvement is not unique to health care and in fact, it has its origins in other industries—mostly manufacturing. Serious attention to quality improvement in health care did not begin until the early 1980s. Before this, the famous Plan, Do, Check/Study, and Act, or PDCA cycle, was one of the first "control charts" aimed at improving the quality of a final manufactured product.[1,2] The PDCA cycle aims to continuously improve processes leading to a final desired product. The key feature is the need to complete one step before moving on to the next. These processes gained significant traction in industries around the world and gave birth to several popular quality improvement processes that have entered the quality vernacular, such as Lean and Six Sigma.

Although the systematic measurement and efforts for quality improvement (QI) did not take hold until the 1980s, there were examples of QI in health care and specifically in surgery as early as 1910 with Ernest Codman.[3] Codman's interest in ensuring the safe and

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Department of Surgery, University of Michigan, 2800 Plymouth Road, NCRC, Building 16, Room 140E, Ann Arbor, MI 48109, USA
E-mail address: aghaferi@umich.edu

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appropriate treatment of patients laid the foundation for what would become The Joint Commission on Accreditation of Healthcare Organizations. The big change that thrust QI in health care to the forefront of the minds of hospital administrators, providers, policy makers, and ultimately patients was the Institute of Medicine's publication *To Err is Human: Building a Safer Health System* in 2000.[4] This report has become synonymous with the broad efforts to improve the quality of health care and served as a rallying cry to view health care as a complex system that is the sum of its moving parts. Previously, hospitals and providers worked and lived in silos that were difficult to penetrate. There has since been a remarkable increase in reports of quality improvement projects taking place in hospitals and other clinical settings across the country.

How best to improve the quality of surgical care remains unknown. Historically, most quality improvements were 1 of 2 drastically different approaches—top down national policy efforts or local hospital/practice level efforts. This article reviews the limitations of these methods and how collaborative quality improvement—a mix of the 2—is the most effective means of achieving sustainable, meaningful improvement in surgical care.

POLICY AS A MEANS FOR QUALITY IMPROVEMENT

Over 45 million patients undergo inpatient surgical procedures every year in the United States.[5] Although most of these procedures are associated with minimal risk, intraabdominal procedures and cardiovascular surgery can lead to substantial morbidity and mortality. At least 100,000 Americans die every year as a direct consequence of an operation. An order of magnitude more experience serious complications and associated disability.[6,7]

There are at least 3 lines of argument that surgical morbidity and mortality could be reduced substantially. First, the Harvard Medical Practice study and other research from the medical errors literature indicate that surgical patients account for more than half of all preventable adverse outcomes occurring in the hospital.[8] Second, a large percentage of surgical patients fail to receive therapy with proven effectiveness in reducing complication risks (eg, appropriate antibiotic prophylaxis in clean-contaminated procedures).[9–13] And finally, after accounting for chance and case mix, there remains wide variation in morbidity and mortality rates across both individual hospitals and physicians and specific groups of providers (eg, higher volume ones).[14–21]

Ongoing efforts aimed at improving surgical quality take many forms. Hospitals are participating in national outcomes registries, such as the American College of Surgeons-National Surgical Quality Improvement Program to benchmark their performance and target their improvement activities.[22,23] Payers have established pay for performance programs with incentives for hospitals to be more compliant with evidenced-based prophylaxis against surgical site infections, venous thromboembolism, and cardiac events.[24] The most prominent of such programs in surgery is Medicare's Surgical Care Improvement Program (SCIP). The SCIP program seeks to ensure that evidence-based processes of care to prevent common complications are followed nationally. The net benefit of such measures has been debatable.[25–27] Ultimately, the downside to national measures is the lack of accounting for local institutional factors such as hospital resources, attitudes, and behaviors.[28,29]

THE POWER OF COLLABORATION

Origins

The concept of surgical quality improvement through the power of collaboration can be most directly attributed to the success of the Northern New England