Can We Take Continuous Quality Improvement to the Next Level?

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The Society of Thoracic Surgeons’ National Cardiac Database (NCD), which is housed and managed at the Duke Clinical Research Institute, has set the standard for effective professional society–sponsored clinical registries. Nearly 90% of US hospitals performing cardiac surgery participate in the NCD. In addition to accruing mortality and morbidity outcomes information from >3.6 million cardiac surgery patients since 1989, the NCD has been used to develop risk models for cardiac surgery procedures that are widely used to assess the appropriateness of surgical intervention. The NCD also has been used for continuous quality improvement (CQI) efforts when tracking process measures of care in cardiac surgery patients, such as the use of the internal mammary artery in coronary artery bypass grafting (CABG) procedures, or the use of preoperative β-blockade therapy.1

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This present report clearly demonstrates the effectiveness of a straightforward CQI intervention, ensuring that patients received appropriate discharge medications after CABG.2 Some would dispute the authors’ characterization of this intervention as “low intensity.” In fact, it is a serious intervention, because coronary atherosclerosis is a lifetime illness. Established coronary artery disease requires effective secondary prevention measures after bypass surgery to sustain cardiac improvement and lasting health. The authors accurately describe the occasion of discharge instruction for CABG patients as a teachable moment. Unfortunately, in our compartmentalized healthcare delivery system, some cardiac patients do not receive a full lesson plan on how to deal with their coronary artery disease, even after CABG surgery. Many patients leave the hospital without being prescribed 1 or more medications that all experts agree are important for effective secondary prevention. In this study, NCD participants were randomized to a control or intervention group, the latter receiving additional instructions and feedback from an onsite process champion to ensure appropriate discharge medication compliance. Not surprisingly, the percent of patients receiving some or all of the appropriate discharge medications was higher in the intervention group.

The goal of this randomized study, funded by the Agency for Healthcare Research and Quality, was to determine whether cardiac surgeons would improve adherence to national secondary prevention guidelines for CABG patients when discharge medication prescribing was included and tracked in the NCD. As might be expected, adherence to discharge medication standards improved in both control and intervention practices over time, reflecting the predictable but gradual uptake of best practices. However, the intervention group receiving both “low-intensity” educational and process prompts from the local quality champion showed a better statistical improvement in discharge medication adherence. Feedback data on adherence patterns clearly contributed to this CQI. Confidence in the validity of the NCD data likely played a role in compliance by the surgeon teams. Interestingly, the earlier Administrative Data Feedback for Effective Cardiac Treatment (AFFECTION) trial, in which administrative data were provided to some Canadian hospitals in a 1-time feedback report about appropriate use of β-blockade therapy in heart attack patients, was not found to be effective for continuous CQI. Whether physicians received early or delayed feedback about several outcomes and performance measures, including medication prescribing, practice patterns were not improved.3 Perhaps confidence in the reliability of the NCD data or the participation of a quality champion at the intervention sites contributed to the CQI achievements seen in this Society of Thoracic Surgeons study.

There are some notable findings and limitations to this study that should be acknowledged. It is interesting that when discharge orders were provided by the surgeon, compliance with medication prescribing generally was better than when discharge prescribing was done by others on the team. In addition, the difference between surgeon performance in the intervention and control groups, although better, was not statistically significantly so. Plus, as the authors note, relying on discharge medication prescribing to assess the effectiveness of long-term secondary prevention in this high-risk post-CABG population hardly provides the full picture. Even the AFFECTION trial reported late postdischarge medication use to assess long-term effectiveness of the CQI process. There was no late report of medication use in these CABG patients. Furthermore, other critical elements of secondary prevention such as lifestyle patterns, including physical activity, healthy diet, and smoking cessation, were not addressed in this study. Despite these limitations, this study is an important demonstration of how care can be improved through fairly modest quality improvement techniques. In the case of promoting adherence to appropriate discharge prescribing of evidence-based secondary prevention measures, the system produced the desired results.

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based and validated medications that are critical to secondary prevention, an educational effort supported by a local champion, along with feedback from a reliable source about compliance, improved care for many CABG patients. Clearly, the Society of Thoracic Surgeons’ NCD was critical to this process. Clinical registries being developed and implemented by the American College of Cardiology and other professional societies should be equally effective.

As valuable as the lessons provided by this demonstration of CQI using timely feedback from a professional society’s voluntary patient registry are, should we not expect more timely and effective decision support in our established healthcare systems? Secondary prevention for CABG patients is a compelling healthcare goal. Evidence for the use of a β-blocker, aspirin, lipid-lowering medication, and an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker is clearly established. The problem addressed in this study is poor surgical team compliance with post-CABG discharge medication prescribing. The intervention that was studied relied on education “directed at a predetermined local opinion leader functioning as a quality champion.” Intervention sites received standardized care orders, “care reminders,” and direct communications from the Society of Thoracic Surgeons, presumably all in printed paper format. What is missing in this scenario, which reflects the usual state of today’s medical practice, is the effective integration of contemporary information technology methods to ensure that each patient’s discharge process includes all appropriate instructions and medications. Today, there is no major successful business enterprise in our sophisticated electronic data management environment that does not use digital protocols, paradigms, or other standard electronic operating procedures imbedded in their business processes. When we are involved in transactional interactions, similar to that which occurs at the time of discharge instructions for patients, we should be able to harness the full capabilities of contemporary digitally facilitated and enhanced data management. Although the present report shows the obvious importance of reliable feedback about outcomes in any serious CQI process, our current healthcare processes are still alarmingly outmoded and outdated in fundamental ways.

For a CABG patient for whom secondary prevention is so clearly an imperative, hospital discharge processes should be systematized digitally. The full spectrum of discharge instructions and medications should be available in a personalized discharge planning protocol that is reconciled with the patient’s medical record. The 4 critical medications that are the target of this study should be electronically prompted, with the discharge physician or team member affirming the prescriptions except when contraindicated. Is it unrealistic for us to expect such modernization of healthcare delivery? We need to remind ourselves what has been accomplished in most other data-driven enterprises and demand of ourselves and our healthcare system a commitment to more sophisticated and contemporary processes of care that will render obsolete the methodology used in this successful CQI program.

Disclosures

None.

References


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