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The implementation of a surgeon-directed quality improvement strategy in breast cancer surgery

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Quality indicators;
Audit and feedback;
Tailoring;
Continuing medical education;
Core biopsy

Abstract

BACKGROUND: The investigators designed a sustained, surgeon-directed, iterative project to improve the quality of breast cancer surgery in south central Ontario.

METHODS: The strategy included audit and feedback of surgeon-selected quality indicators, workshops, and tailoring interviews. Workshops were held to discuss quality improvement strategies, select quality indicators, review audited results, and select interventions for subsequent implementation. Semi-structured tailoring interviews were conducted to identify facilitators and barriers to improved quality. All presentations and results were disseminated to all surgeons performing breast surgery in the study region.

RESULTS: Forty-four surgeons performing breast surgery across 12 hospitals are involved in the project. Five workshops have been held since 2005. Surgeons' enthusiasm and involvement in the project have been positive. Interim results demonstrated that over 4 audit cycles (2006–2010), the preoperative core biopsy rate increased from 73% to 92%. The tailoring interviews indicated that 18 of 21 surgeons performed preoperative core biopsies.

CONCLUSIONS: This project highlights the feasibility of a surgeon-directed, iterative quality improvement strategy in breast cancer surgery. Interim results demonstrate consistent improvements in a key selected quality indicator.

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Significant quality gaps have been identified in the health care delivered to patients.[1,2] The causes of such gaps are multifactorial. They can include a lack of resources, a lack of awareness or agreement with new knowledge by clinicians, or decisions made by policy makers. Quality improvement activities in clinical care attempt to improve quality of patient care. However, many studies have demonstrated challenges in improving care,[3–5] such as measuring quality (quality indicators [QIs]) and identifying strategies successful in improving quality. Although these issues are important in many aspects of surgical care, they are especially relevant to breast cancer (BC): BC is a common disease, extensive knowledge is available (including results of randomized controlled trials), and specific activities of surgeons can have an impact on the quality of care delivered to patients.

Numerous studies have shown gaps in BC surgical care. Landercasper et al[6] found that variation exists for numerous measurable processes of care (ie, multidisciplinary case conferences, preoperative core biopsy, reexcision for positive margins, mastectomy rates, referral for adjuvant therapy), and specific patient outcomes (ie, positive margin rates, local recurrence rates after breast-conserving surgery [BCS], survival). QIs are specific and measurable elements of practice that are usually derived from retrospective reviews of medical records or administrative databases.[7] A good QI should define care that is attributable to and within the control of those delivering the care. They need to be scientifically sound, measurable, relevant, and consistent with the ultimate goal of the process.[7] When QIs are evaluated, they need to be interpreted in relation to ranges of values and the natural variation around these values.[8,9] The American Society of Breast Surgeons, the National Quality Measures for Breast Centers, and the National Accreditation Program for Breast Centers in the United States have all identified QIs.[10–13] Performance of a preoperative core biopsy has been identified as a QI by the National Quality Measures for Breast Centers,[12] the American Society of Breast Surgeons,[14,15] and other jurisdictions.[10,16–19] Multiple studies have demonstrated the advantages of having a preoperative tissue diagnosis before definitive BC surgery.[20–23] Performance of core biopsies is an ideal process-of-care indicator, as it is under the control of surgeons and is evidence based, and there is significant variation observed in its utilization.[24–26]

A variety of strategies to promote improvement in quality of care have been studied. These include guidelines, reminders and computer aids, opinion leaders, traditional continuing medical education, audit and feedback (A&F), workshops, and tailoring processes. Although researchers have identified the inherent difficulties in studying the impact of quality interventions in surgery,[27,28] most studies have shown that quality improvement initiatives have, at best, only moderate effects on outcomes.[29–33] In BC surgery, there have been very few studies looking at the impact of a structured quality initiative on outcomes.[14,34,35]

Quality gaps in BC surgical care have been identified in south central Ontario. Hanley and Kessaram[36] reported a positive margin rate of 60% at their community hospital, while Lovrics et al[20] reported a positive margin rate of 26% in a cohort of randomly selected BC patients referred to the Hamilton Regional Cancer Centre between 2000 and 2002. The rate of preoperative diagnosis (by core biopsy or fine needle aspiration) was 69%, and the rate of specimen orientation labeling was only 53% in this cohort.[20] The objective of our study was to determine the feasibility of implementing a surgeon-directed, sustained (multiyear), population-based quality improvement strategy to improve outcomes and QIs in BC surgery in our region (Quality Initiative in Breast Cancer Surgery in Local Health Integration Network 4 [QIBCS-L4]). The study interventions included A&F, workshops, and tailoring. We also describe the feasibility of the implementation and its impact on preoperative core biopsy rates in early-stage BC. In particular, we describe a surgeon-directed process that encompasses a large geographic population in south central Ontario that includes both high-volume and low-volume surgeons in community and academic settings.

Methods

Setting

This project was conducted in Local Health Integration Network 4 (LHIN4) in south central Ontario, with a population of 1.4 million residents and covering 6,600 km^2. There are 10 hospital corporations with 21 hospital sites, of which 12 provide BC surgery. Four hospitals are affiliated with an academic center (McMaster University). Approximately 1,200 BC surgical cases are performed yearly in LHIN4 by approximately 44 surgeons. Research ethics board approval was obtained from the 12 hospital sites performing breast surgery.

Interventions

Quality Initiative in Breast Cancer Surgery in Local Health Integration Network 4 strategy. A planning team comprising 6 surgeons, an epidemiologist, a statistician, and a project coordinator developed and organized the QIBCS-L4 project. Quarterly planning meetings were held to review progress and results. The QIBCS-L4 strategy included 3 interventions: yearly workshops, A&F, and tailoring interviews.

Workshops. All surgeons performing BC surgery and LHIN4 oncology administrative leaders were invited to workshops held outside of the urban academic center. The format included presentations on topics selected by surgeons and interactive small-group sessions. At the first workshop (2005), selected regional outcomes of BC