



Uptake and impact of synoptic reporting in a community care setting

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ABSTRACT

Background: Breast cancer surgeries have traditionally been documented in narrative reports. Narrative reports have been shown to be incomplete. Synoptic reports utilize standardized templates to record data and have emerged as an alternative to narrative reports. This study evaluates the uptake and impact of synoptic reporting for breast cancer surgery in a community care setting.

Methods: A retrospective review of operative reports documenting breast cancer surgeries over a consecutive 3-year period.

Results: 772 narrative reports and 158 synoptic reports were reviewed. Synoptic reports were associated with a higher degree of overall completeness (60% vs 45%) when compared to narrative reports. 6 out of 7 surgeons that produced at least 5 synoptic and 5 narrative reports had increases in completeness with use of synoptic reporting.

Conclusions: Use of synoptic reporting improves breast cancer operative report completeness and decreases superfluous content when compared to narrative reports. While synoptic report uptake during the study period was suboptimal there exists several means by which it can be improved, including investment in information technology infrastructure and emphasis on stakeholder engagement.

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1. Introduction

Breast cancer is the most common malignancy, and second most common cause of cancer mortality for Canadian women.¹ In an effort to improve outcomes and provide evidence based care for breast cancer patients, high quality, rapidly available data has become increasingly important. The operative report represents the primary means by which surgeons document intraoperative information which may not be recorded elsewhere in the patient's chart. The dictated narrative report, which is the traditional means by which intraoperative information for breast cancer surgery has been recorded, has been shown to incompletely document all of the data necessary to optimize its utility.^{2,3}

Synoptic reports utilize a standardized template to record data and have emerged as an alternative to the narrative report. Previous studies, primarily using synoptic reporting in an academic setting,

have associated use of synoptic reporting with an increase in operative report completeness for a number of surgical sites including, colon,⁴ rectum,⁵ and pancreas.⁶ Given that synoptic reporting appears to represent a relatively simple intervention, the benefit of synoptic reporting should be generalizable to the community setting. This study evaluates both the utilization of synoptic reporting and its' influence on the completeness of operative reports documenting breast cancer surgeries performed in a community setting.

2. Materials and methods

A previously identified set of procedure-specific elements was selected and modified for use as the standard against which operative report completeness was evaluated. These elements were selected based on a pan-Canadian consensus established through the Canadian Partnership Against Cancer (CPAC) initiative beginning in 2008.² Six elements (drains, use of a surgical timeout, specimen orientation, pectoral fascia removal, marking of biopsy cavity, and follow up) were added to this set to incorporate work

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done provincially by the BC Surgical Oncology Network⁷ which functions in part, as a quality improvement leader for British Columbia, through the British Columbia Cancer Agency (BCCA).

Previous work categorized operative report elements as either technical or non-technical. Further categorization of technical elements (important versus less important) was done in this study to acknowledge that not all elements are of equal importance in determining an operative report's utility. The distinction between important and less important was made at the discretion of the authors (JE and CB) and was based on several factors including the ability to obtain the information elsewhere in the patient's chart, the potential importance of the element to the patient's future care providers, and the element's potential utility for secondary data usage (eg. quality assurance initiatives). Tables 1 and 2 detail the elements included in our standardized analysis of the operative reports as well as each element's classification.

We retained the evaluation system established in previous work² done on this topic and classified elements as complete, partially complete, or absent. The data dictionary used in our standardized analysis is available in the supplemental methods.

A retrospective chart review was performed on all synoptic and narrative breast cancer operative reports produced for BC Cancer Agency (BCCA SAH-CSI) referred patients between January 1, 2011 and December 31, 2012 inclusive. Synoptic and narrative reports were produced using the same dictation infrastructure, with synoptic reports being produced with the guidance of a simple dictation aide. The majority of synoptic reports produced in 2011 and 2012 were produced by a single surgeon. To allow for a more generalized sampling of synoptic reports, the review period was extended to December 31, 2013 for synoptic reports produced by other surgeons. All breast cancer surgery operative reports produced by any surgeon practicing in any hospital within the Interior Health Authority (IHA), which provides the surgical services for patients referred to the BCCA SAH-CSI, were studied. Operative reports produced by surgical trainees or for surgeries that were diagnostic biopsies, non-curative in intent, re-excision of margins, or performed on males, were excluded from further study. In addition, breast cancer operative reports that did not document a breast surgery (ie. stand-alone sentinel node biopsies or axillary node dissections) were excluded.

All data was collected and evaluated by a single individual (JE). A

paired analysis was performed using the operative reports of surgeons who produced both synoptic and narrative operative reports during the study period. Surgeons who produced fewer than 5 synoptic reports and 5 narrative reports were excluded from this paired analysis. Statistical analysis was done using SAS Version 9.3. This study had full approval from the British Columbia Cancer Agency Research Ethics Board and the University of British Columbia Research Ethics Board.

3. Results

A total of 930 operative reports were reviewed from 37 attending physicians working in 10 community hospitals. 882 operative reports were eligible for study during the calendar years 2011 and 2012. 772 operative reports from this time period were narrative reports and 110 were synoptic reports. A single surgeon (Surgeon A) produced 81 of these 110 synoptic reports (74%). 48 additional synoptic reports produced by surgeons other than Surgeon A in 2013 were reviewed. 9 staff surgeons produced at least 1 synoptic operative report during the study period.

51% of narrative reports and 58% of synoptic reports documented partial mastectomies. An axillary procedure in the form of either sentinel node biopsy or axillary lymph node dissection was documented in 88% of narrative reports compared to 96% of synoptic reports (Table 3).

Synoptic reports had a higher degree of overall completeness compared to narrative reports (60% vs 45%) (Table 4). When synoptic reports produced by Surgeon A were compared to those produced by other surgeons, similar overall completion percentages were observed (62% vs 58%)(Results not shown). Important technical elements were the most completely reported elements for both synoptic and narrative reports (69% vs 58% respectively). Less important technical elements were completed at a higher rate in narrative reports (55% vs 44%). Non-technical elements were more completely documented by synoptic reports (61% vs 29%) (Table 4).

A paired analysis comparing the synoptic and narrative reports of individual surgeons who produced both report types during the study period was performed to provide further clarity regarding the influence of synoptic reporting on operative report completeness. 7 surgeons contributing at least 5 synoptic and 5 narrative reports were identified for inclusion in this paired analysis.

The results of the paired analysis were consistent with the overall study results: 6 of the 7 surgeons had higher overall operative report completeness with the use of synoptic reporting (range: 6–17% absolute increase), while 1 surgeon had a decrease of 9% (Table 5). Synoptic reporting was associated with an increase in completeness for important technical elements and non-technical elements for the majority of these surgeons. Less important technical elements were better documented in the narrative reports of 5 surgeons (results not shown).

4. Discussion

Dictated narrative reports represent the primary means by which intraoperative details are recorded for breast cancer surgeries. Narrative reports have been shown to incompletely document important details with overall operative report completion rates of 42% and 45% reported in academic and community settings respectively.^{2,3}

Recognition of the limitations of narrative reporting has prompted efforts to explore novel means of operative documentation. Synoptic reporting, which utilizes a standardized template to prompt and record data, has emerged as the predominant alternative to narrative reporting. Previous studies have

Table 1
Procedure-specific operative report elements and classification.

Non-technical elements	Complete/absent	Complete/partial/absent
Past medical history		X
Candidate for breast conservation surgery		X
Method of detection	X	
Palpable lesion	X	
Lesion seen on imaging (including imaging type)		X
Pre-op biopsy performed and type		X
Position in breast		x
Clinical lymph node status	X	
Size of tumor		X
Neoadjuvant treatment and type		X
Metastatic workup – type and results		X
Current Diagnosis	X	
Deep vein thrombosis prophylaxis	X	
Antibiotic prophylaxis	X	
Choice of surgery (reason for mastectomy)		X

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