

Cesarean Operative Reports: We Can Do Better!

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Abstract

Background: The operative report is an essential component of communication, patient care, and safety; it is a JCAHO requirement and legal document. Almost 80% of residency program directors surveyed agreed on the importance of the operative report, yet less than 20% of programs provide formal resident training. Documentation has important implications in obstetrics as route and timing of future deliveries are often influenced by operative findings. **Purpose:** Examine completeness of cesarean operative reports using a validated instrument adapted from general surgery. Assess the impact of an educational resident in-service on the required elements and documentation in resident generated cesarean operative reports. **Methods:** A quality improvement project identified significant deficiencies in resident generated cesarean operative reports. We conducted a retrospective chart review of cesarean operative reports from November 2019 to May 2020 at Jersey Shore University Medical Center. Our study was conducted in three phases. In phase 1, a cohort of cesarean operative reports was examined using a structured evaluation tool. In phase 2, an educational resident in-service on standardization of operative notes was provided. In phase 3, another cohort of cesarean operative reports was examined using the same evaluation tool after the resident in-service. Analysis for improvement was performed. **Results:** Fifty pre and post-in-service cesarean operative report evaluations were compared (N = 100). Inclusion of date of surgery significantly improved from 78% to 100%, p-value < 0.001 and inclusion of history of presents illness (HPI) improved from 34% to 96%, p-value < 0.001. Non-significant improvement in presence of a comprehensive description of technique (72% to 86%, p-value 0.09) and findings (94% to 100%, p-value 0.24) was noted. The remaining elements in the evaluation tool did not have deficiencies before or after the educational resident in-service. **Conclusion:** Cesarean operative reports can be improved through an educational resident in-service.

Keywords

Cesarean, Documentation, Notes, Operative, Resident

1. Introduction

The operative report is an essential component of communication, patient care, and safety [1]. Elements required by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) include history of present illness (HPI), findings, techniques, and operative steps. This documentation has important implications in obstetrics as route and timing of future deliveries are often influenced by operative findings (*i.e.*, adhesions or distorted anatomy), uterine incision type and uterine closure techniques described in a prior cesarean operative report [2].

Almost 80% of residency program directors surveyed agreed on the importance of the operative report, yet less than 20% of programs provide formal resident training [3]. Clarke-Pearson outlined the importance of a clear description of anatomic distortion and residual tumor, as this information is essential in the care of gynecologic oncology patients [4]. Since more than one-third of pregnancies are delivered via cesarean, the operative report has become increasingly important in obstetrics as well [3].

A quality improvement assessment at our institution showed 80% of resident generated cesarean operative reports were missing one or more JCAHO required elements. Our review was based on the standards set by the Canadian Association of General Surgeons and the Structured Assessment Format for Evaluating Operative Reports (SAFE-OR). The goal of this study was to review OBGYN resident generated operative reports for cesarean deliveries to determine adherence to these standards. An educational resident in-service was then conducted with the goal of addressing deficiencies and improving compliance with JCAHO requirements [5].

2. Materials/Methods

This retrospective chart review of cesarean operative reports was approved by the Hackensack Meridian Health institutional review board. A quality improvement assessment showed 80% of resident generated cesarean operative reports were missing one or more JCAHO-required elements. Our primary outcome was to examine deficiencies in resident generated cesarean operative reports. Our secondary outcome was to assess the impact of an educational resident in-service on operative notes. The study was conducted in three phases.

Phase 1: Operative notes were evaluated with a validated tool adapted from general surgery by reading through cesarean operative reports and noting included and omitted required elements from SAFE-OR worksheet. A pre-study evaluation was performed using these guidelines on 50 consecutive resident generated operative reports for cesarean deliveries using the data collection sheet provided by Vergis *et al.* (see **Table 1**). Segments were divided into structured elements, HPI, procedure aspects, findings, technique of resection/mobilization, limits of resection, technique of reconstruction, and closure technique. All resident generated cesarean operative notes from November 2019 to January 2020 were collected consecutively to achieve 50 charts.

Table 1. Structured assessment elements.

Elements	Yes	No			
1) Date of surgery					
2) Date of dictation					
3) Patient identifiers					
4) Name of surgeon and assistants					
5) Name of anesthetist/anesthesiologist					
6) Pre-operative diagnosis					
7) Post-operative diagnosis					
8) Procedure					
9) Brief history of present illness (including relevant investigations)					
	0	1	2	3	4
No description			Preoperative course and indications described but some detail was lacking		Complete description of preoperative course and indications for procedure
Procedure					
Elements	Yes	No			
10) Type of anesthesia					
11) Skin preparation and draping					
12) Patient position					
13) Method of abdominal access					
14) Findings					
	0	1	2	3	4
No mention of findings			Findings stated but details/explanation lacking		Completely explains findings and notes unexpected findings
15) Technique of resection, including tissue mobilization					
	0	1	2	3	4
No description of mobilization or resection technique			Mobilization and resection techniques described but details regarding operative steps incomplete		Complete description of tissue mobilization and method of resection including instruments

Continued

16) Limits of resection

0	1	2	3	4
No anatomical description of structures or mention of surgical margins		Resected structures listed but clear anatomical boundaries not well defined		Exact anatomical description of structures resected

17) Technique of reconstruction

0	1	2	3	4
No description of technique of reconstruction		Type of technique mentioned but steps and results of reconstruction omitted		Comprehensive descriptions of reconstruction including technique, equipment used, and integrity of repair

18) Closure technique

0	1	2	3	4
No description of closure method		Closure described but specific details omitted		Comprehensive description including suture method, size and type of suture employed if applicable

Elements	Yes	No	N/A
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19) Irrigation

20) Drains and location

21) Prosthesis or other items

22) Estimated blood loss (EBL)

23) Dressings applied

24) Sponge and instrument count

25) Specimens sent

Phase 2: Resident in-service educational program on the SAFE-OR standards for operative reports was conducted during resident didactics on 1/28/2020. The individual aspects of SAFE-OR were reviewed via printed handouts (see **Table 1**) for one hour while residents edited their personal operative report templates to include each required element.

Phase 3: Post-study evaluation on operative note adherence to SAFE-OR guidelines in same manner as phase 1. All resident generated cesarean operative notes from February 2020 to May 2020 were collected consecutively to achieve 50 charts. The pre and post study results were compared and assessed for improvement.

A sample size of 50 charts (N = 100) before and after the resident in-service was planned assuming an alpha of 0.05 with 80% to detect a 30% difference. Pre and post study results were compared using Chi square analysis with P value < 0.05. We used the Fisher Exact test when expected values were low.

3. Results

Pre and post in-service cesarean operative report evaluations were compared. Inclusion of date of surgery significantly improved from 78% to 100%, p-value < 0.001, inclusion of irrigation significantly improved from 20% to 72%, p-value < 0.001, and inclusion of history of presents illness (HPI) improved from 34% to 96%, p-value < 0.001. Non-significant improvement in the inclusion of comprehensive description of technique (72% to 86%, p-value 0.09) and inclusion of findings (94% to 100%, p-value 0.24) was noted.

We found no deficits in the following elements: date of dictation (p-value 1), patient identifiers (p-value 1), name of surgeons and assistants (p-value 1), name of anesthesiologist (p-value 0.49), preoperative diagnosis (p-value 1), postoperative diagnosis (p-value 1), procedure (p-value 1), type of anesthesia (p-value 1), skin preparation and draping (p-value 1), patient position (p-value 0.204), method of abdominal access (p-value 1), technique of resection (p-value 1), limits of resection (p-value 0.24), closure technique (p-value 1), estimated blood loss (p-value 0.49), sponge and instruments counts (p-value 1), and specimens sent (p-value 1). Elements not relevant to cesarean delivery (*i.e.* drains, implants, and prosthetics) were omitted from our analysis (**Table 2**).

4. Discussion

The operative report is an essential component of communication, patient care, and safety; it is a JCAHO requirement and legal document. Its purpose is to describe the procedure and operative findings in detail and help guide physician decision making. JCAHO requires the operative note be completed immediately after the procedure and prior to transferring the patient to the next level of care to avoid omission of important details [6] [7].

Operative reports have become increasingly important in obstetrics. Eichholz *et al.* (2004) surveyed 270 U.S. Obstetrics and Gynecology residency program directors regarding the importance of operative reports completed by residents. Almost 90% of those surveyed responded that documenting an operative report is an important skill to teach, yet only 23% of programs provide formal training. They also showed that a 30-minute teaching session could objectively improve operative reports [3].

Table 2. Impact of Resident in-service on SAFE-OR elements, n = 100.

Element	Pre	Post	p-value
Date of surgery	78.0% (39)	100% (50)	<0.001
Date of dictation	100% (50)	100% (50)	1
Patient identifiers	100% (50)	100% (50)	1
Name of surgeon and assistants	98.0% (49)	100% (50)	1
Name of anesthesiologist	96.0% (48)	100% (50)	0.49
Pre-operative diagnosis	100% (50)	100% (50)	1
Post-operative diagnosis	100% (50)	100% (50)	1
Procedure	100% (50)	100% (50)	1
Brief HPI	34.0% (17)	96% (48)	<0.001
Type of anesthesia	100% (50)	100% (50)	1
Skin preparation and draping	100% (50)	100% (50)	1
Patient position	90.0% (45)	98.0% (49)	0.204
Method of abdominal access	100% (50)	100% (50)	1
Findings	94.0% (47)	100% (50)	0.24
Technique of resection	100% (50)	100% (50)	1
Limits of resection	94.0% (47)	100% (50)	0.24
Technique of reconstruction (i.e. uterine incision and/or closure)	72.0% (36)	86.0% (43)	0.09
Closure technique	100% (50)	100% (50)	1
Irrigation	20.0% (10)	72.0% (36)	<0.001
Estimated blood loss	96.0% (48)	100% (50)	0.49
Dressings applied	94.0% (47)	100% (50)	0.24
Sponge and instrument count	100% (50)	100% (50)	1
Specimens sent	100% (50)	100% (50)	1

Moore (2000) surveyed 52 general surgery residency program directors about their operative report curriculum. Only 31% reported formal instruction during their own training [8]. Goodman (1983) commented that “even standard textbooks give little or no information to the young surgeon on the how, why and what is to be included in an operative report [7].” Those who had no formal instruction said they learned from reading notes of senior residents and attending physicians.

Given the overall importance of operative reports, an operative report curriculum should be part of formal resident training. Particular attention should be

focused on inclusion of the HPI, operative technique (*i.e.* uterine incision type and closure) and anatomical findings. In addition, missing information in an operative report can negatively impact patient care. A report that lacks a description of uterine closure technique may dissuade a trial of labor after cesarean (TOLAC). The impact of operative reports on willingness to pursue or allow TOLAC requires further study. The importance of an operative report in reviews of care and in the defense of lawsuits cannot be overlooked.

Strengths of this study include the use of validated measures to quantify deficiencies and improvement, analysis powered to detect a 30% difference between pre and post resident in-service, and generalizability to other surgical specialties. A weakness of this study is that it was not powered to detect a significant difference in every aspect of the SAFE-OR assessment. Pre in-service deficiencies in some aspects were not as profound and therefore did not reach statistical significance. The 6.4% increase in documentation of operative findings and 19.4% improvement in documentation of technique, if confirmed in a larger sample, are clinically relevant improvements.

5. Conclusion

Our analysis shows that resident generated cesarean operative reports can be improved through an educational resident in-service. We believe that this essential documentation skill should be part of the curriculum in all OBGYN residencies with the goal of improving communication, patient care, and safety. We can do better!

Disclosures

The authors have nothing to disclose.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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