

Quality indicators for operative reporting in transanal endoscopic surgery

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SUMMARY

Transanal endoscopic surgery (TES) platforms have become quite popular. Many surgeons across the country have begun excising rectal lesions using these platforms; however, the perioperative decision-making surrounding these excisions can be quite variable. To facilitate care between providers, it would be helpful to standardize the way TES is reported. Synoptic operative reports have previously been established as an effective and efficient communication tool. For patients with rectal cancer, synoptic reports are required for pathology, radiology and major oncologic resections, but never previously for TES. We used a Delphi process including 15 stakeholders from across Canada to develop a TES synoptic report. Participants submitted items according to 6 categories: team characteristics, patient demographics, pre-operative work-up, lesion characteristics, procedure details and postoperative details. Twenty-six surgeon-entered and 41 auto-populated items reached final inclusion. This will allow generation of a synoptic reporting template to improve perioperative communication for these patients.

The operative report is a cornerstone of surgical communication. Historically these reports took the form of a dictated narrative description. Meta-analysis has shown that narrative report quality is universally poor.¹ This is unacceptable, as operative reports contain critical patient care information. An established method of improving documentation quality is through synoptic reporting. Synoptic reports produce more comprehensive, accurate and reliable information than their narrative counterparts.¹ Additionally, synoptic reports collect important quality indicators (QIs), facilitating timely research and policy change that may lead to care improvements.¹ The American College of Surgeons' National Accreditation Program for Rectal Cancer requires institutions to use synoptic pathology and radiology reports.² Synoptic reports are also used for total mesorectal excision (TME).^{2,3} Transanal endoscopic surgery (TES) is a novel surgical technique developed to improve local excision of rectal neoplasms. The technique is widely accepted for removal of neoplastic polyps and early-stage cancers. Additionally, it is increasingly being used for more advanced malignant lesions in conjunction with adjuvant therapies. While synoptic reports based on QIs have been developed for other rectal cancer procedures,^{2,3} none exist for TES. Therefore, we devised an online Delphi process including physician stakeholders from across Canada to develop consensus-derived QIs for TES procedures, to ultimately develop a TES synoptic reporting template.

The Delphi process is shown in Figure 1; 67 items reached final inclusion (Table 1), and 12 were excluded (Table 2). Participants were 9 colorectal surgeons who regularly perform TES, a surgical oncologist, a general surgeon with expertise in synoptic operative reporting, 2 gastrointestinal (GI) pathologists, an abdominal radiologist and a radiation oncologist.

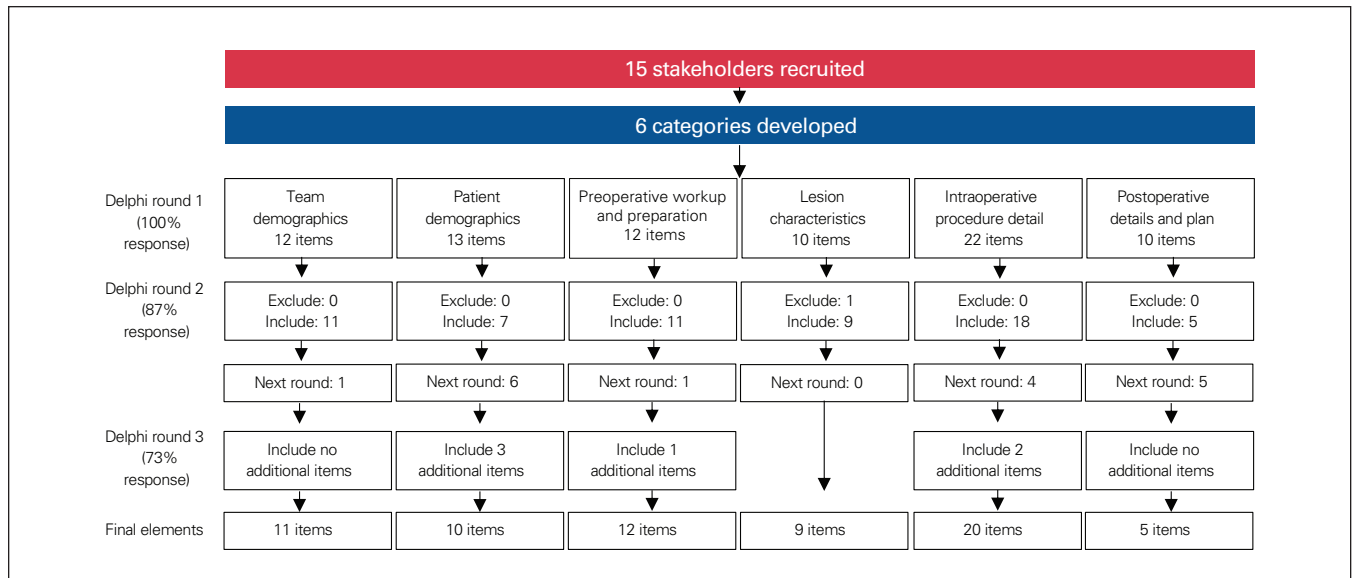


Fig. 1. Flow diagram of the Delphi process to establish consensus-derived quality indicators for a transanal endoscopic surgery (TES) operative report. Participants submitted potential items, then rated them on a 9-point Likert scale. Items scoring 70% or higher were included, whereas scores of 30% or lower were excluded. Items scoring between 30% and 70% were recirculated.

Table 1 (part 1 of 2). Quality indicators for TES operative report

Domain	Number of items	Quality indicator*	Round included		
Team demographics	11	Procedure date	2		
		Report date	2		
		Reported by	2		
		Additional physicians to receive operative report	2		
		Procedure planned	2		
		Procedure performed	2		
		Surgeon	2		
		Assistant(s)	2		
		Level of training of primary operator	2		
		Anesthetic	2		
		Hospital or site of procedure	2		
		Patient demographics	10	Preoperative diagnosis	2
				Postoperative diagnosis	2
Name	2				
Date of birth	2				
Age	2				
Sex	2				
Medical record number/health number	2				
Preoperative BMI (kg/m ²)	3				
Previous relevant surgeries	3				
Past cancer history	3				
Preoperative workup and preparation	12	Bowel preparation	2		
		Antibiotics in bowel preparation	2		
		Preoperative imaging modality	2		
		Lesion characteristics on imaging	2		
		Preoperative biopsy performed (y/n)	2		
		Pathology results	2		
		Pathology high-risk features	2		
		If lesion is cancer, preoperative staging evaluation	2		
		If lesion is cancer, preoperative TNM stage	2		
		Preoperative endoscopic assessment/findings	2		
		Endoscopy extent	3		
		Prior treatments	2		

Table 1 (part 2 of 2). Quality indicators for TES operative report

Domain	Number of items	Quality indicator*	Round included
Lesion characteristics	9	Fixed or mobile	2
		Distance from dentate line (cm)	2
		Distance from anal verge (cm)	2
		Relation to rectal folds	2
		Extent into anal canal (y/n)	2
		Size (cm)	2
		Percent circumference	2
		Appearance	2
		Location/orientation (anterior, posterior, left, right)	2
Intraoperative procedure details	20	Intent of procedure (cure, palliation)	2
		Patient position	2
		Platform (TAMIS, TEM)	2
		Preoperative antibiotics	2
		DVT prophylaxis	2
		Skin preparation	3
		Time-out performed (y/n)	2
		Lifting with saline or epinephrine	2
		Defect closure (y/n)	2
		If defect closed, technique and material used	2
		Intraperitoneal entry (y/n)	2
		Completeness of excision	2
		Closest gross mucosal margin	2
		How the margins of the specimen are marked	3
		Piecemeal excision (y/n)	2
		Unexpected findings or events	2
		Additional procedures performed	2
Complications	2		
Plane of dissection	2		
Need for laparoscopy or laparotomy and reasons	2		
Postoperative details and plan	5	Estimated blood loss (mL)	2
		Discharge plan	2
		Reasons if not day surgery	2
		Postoperative condition	2
		Additional information/notes (free text)	2

BMI = body mass index; DVT = deep vein thrombosis; TAMIS = transanal minimally invasive surgery; TES = transanal endoscopic surgery; TNM = tumour, node, metastasis stage according to American Joint Committee on Cancer.

*Bold text indicates surgeon input data. Remaining fields can be pre-populated from electronic chart.

Table 2. Excluded items for TES operative report

Domain	Proposed item	Round excluded	Agreement, %
Team demographics	Anesthesiologist	3	36
Patient demographics	Comorbidities	3	36
	Additional GI conditions	3	43
	Ethnicity	3	7
Preoperative workup and preparation			
Lesion characteristics	Lesion location (clock face)	2	29
Intraoperative procedure details	Time of tissue removal	3	14
	Time tissue was placed in formalin	3	7
Postoperative details and plan	Postoperative DVT prophylaxis	3	21
	Debriefing performed (y/n)	3	21
	Follow-up imaging to be obtained	3	43
	Follow-up visits	3	36
	Urinary retention	3	21

DVT = Deep vein thrombosis; GI = gastrointestinal; TES = transanal endoscopic surgery.


 Hôpital St-Boniface Hospital		St. Boniface General Hospital	Operative Report
Patient name: Jane Doe		Birth date: January 1, 1982	
MRN: ABCDEFG		Health #: 123 456 789	
Demographic characteristics	Procedure date	Oct 27, 2021	
	Reported by	Dr. Smith, PGY-6	
	CC	Dr. X, Dr. Y	
	Procedure planned	TAMIS	
	Procedure performed	TAMIS	
	Attending surgeon	Dr. Z	
	First assistant	Dr. Smith	
	Second assistant	N/A	
	Level of primary operator	PGY-6	
	Anesthetic	General	
Patient details	Preoperative diagnosis	T1N0 rectal adenocarcinoma	
	Postoperative diagnosis	T1N0 rectal adenocarcinoma	
	Age	39 years	
	Sex	Female	
	Height	141 cm	
	Pre-operative weight	80 kg	
	Pre-operative BMI	39.1 kg/m ²	
	Previous relevant surgeries	None	
	Past cancer history	None	
Preoperative events	Bowel preparation:	None	
	Antibiotic bowel preparation	None	
	Preoperative imaging modality	Pelvic MRI	
	Lesion characteristics on imaging	T1N0	
	Preoperative biopsy performed	Yes	
	Pathology results	Adenoca, well differentiated, absent perineural or lymphovascular invasion	
	High risk features	None	
	Preoperative staging evaluation		
	CT chest/abdo/pelvis	Yes	
	Serum CEA	2.3	
	Other	N/A	
	Endoscopy extent	Complete to IC valve	
	Endoscopy findings	Unremarkable	
	Preoperative TNM stage	T1N0M0	
	Prior treatments	None	
Operative details	Procedure intent	Cure	
	Patient position	Lithotomy	
	Platform	TAMIS (GelPOINT path transanal access platform)	
	Preoperative antibiotics	Ancef, flagyl	
	DVT prophylaxis	5000 u heparin	
	Skin preparation	Povidone	
	Time-out	Yes	
	Agent used to lift lesion	Saline	
	Defect closure	No	
	Technique	N/A	
	Intraperitoneal entry	No	
	Completeness of excision	Complete	
	Closest gross mucosal margin	Right lateral	
	Margin markings	None	
	Piecemeal excision	No	
	Unexpected findings	None	
	Additional procedures performed	None	
	Laparoscopic/laparotomy	N/A	
	Reasons	N/A	
	Complications	None	
	Plane of dissection	Full thickness	
Lesion Characteristics	Fixed or mobile	Mobile	
	Distance from dentate line (cm)	5 cm	
	Distance from anal verge (cm)	7 cm	
	Relation to rectal folds	Proximal to third rectal fold	
	Extent into anal canal (y/n)	No	
	Size (cm)	3 cm diameter	
	Percent circumference	25%	
	Appearance	Sessile	
	Location/orientation	Posterior midline	
Postoperative details	Estimated blood loss (ml)	Minimal	
	Discharge plan	Same day	
	Reasons if not day surgery	N/A	
	Postoperative condition	Transferred in good condition to the recovery room	
	Additional information/notes (free text)	None	
Report Date: Oct 27, 2021		Surgeon Electronic Signature	

Fig. 2. A sample synoptic report for transanal endoscopic surgery (TES) based on the consensus-derived quality indicators (QIs). BMI = body mass index; CEA = carcinoembryonic antigen; CT = computed tomography; DVT = deep vein thrombosis; MRI = magnetic resonance imaging; N/A = not applicable; PGY = postgraduate year; TAMIS = transanal minimally invasive surgery.

Stakeholders from a variety of fields were included to ensure all relevant disciplines for rectal cancer care had input into this report as a communication tool. Rectal cancer care frequently involves a multidisciplinary team that must communicate effectively to make complex medical decisions. Many team members are not present during the surgical procedure, thus there is a particular need for excellent communication. Documentation of relevant findings is essential to make appropriate treatment decisions, such as the decision whether to provide adjuvant therapies or consider further resection.³ As familiarity with TES increases and the purported indications continue to expand, the intricacies of treatment decisions will increase, as will the importance of adequate documentation.

Synoptic reporting has been well-established in oncology, with pathologists being among the first in medicine to adopt and regulate standardized reporting more than 20 years ago. Standardized synoptic reports have been shown to improve communication and increase report quality.¹ More recently, operative reports for rectal cancer TME have transitioned to a synoptic template, with excellent results.^{2,3} Until now, TES has eluded requirements for standardized reporting, which leaves a growing segment of cancers and precancerous lesions treated via this technique without standardized documentation. The accuracy of TES reports are currently unclear, as there are no pre-existing reporting QIs with which to assess this procedure. However, it is widely described that traditional narrative reports have been inadequate for nearly all surgical procedures.¹ To bring TES in line with other oncologic operations, development of standardized reports is the next logical step to assess and improve communication for this procedure.

Our survey identified 67 QIs upon which to establish a standard report, and can be used to evaluate existing TES documentation. The number of QIs proposed is similar to previous research on operative reporting,^{1,3,4} and is necessarily large. The operative report is an opportunity for a single document to contain much valuable information related to the patient's surgical care. However, the need for creating such reports should be balanced with time constraints and workload for the reporting surgeon. A sample synoptic report for TES based on consensus-derived QIs is shown in Figure 2.

Many of the proposed QIs, particularly in the realms of patient demographics and preoperative work-up, could already be documented in the patient's chart from preoperative, anesthesiology and/or nursing records. For the surgeon to manually input 67 items for every procedure would be arduous, although it is done regularly for other procedures.^{3,5} For example, synoptic reports containing 75 items (all manually inputted) for Roux-en-Y gastric bypass at our own institution took on average 3 minutes, 55 seconds to complete, and were nearly 1 minute faster

to complete than unstructured, dictated narrative reports.⁵ We anticipate that a synoptic report using our suggested TES QIs would have a similar duration. For these synoptic reports to be further optimized, effective integration into existing electronic medical records is key. In our own institution, Web Surgical Medical Record (WebSMR) is used to generate synoptic reports for other colorectal procedures. Using this system, 41 of the current TES QIs could be prepopulated from the chart. This would leave only 26 items (those indicated in bold in Table 1) for the surgeon to input, thus permitting more time to document information such as operative procedure details, of which only they have a full understanding. This reduced number is comparable to the 20 items in the American Society of Colon and Rectal Surgeons (ASCRS) synoptic report for TME.² Previous research highlights the importance of also allowing free-text sections in synoptic reports, particularly during early implementation phases, to ensure inclusion of unexpectedly important details that may otherwise be missed.²

Another consideration is how TES, a seemingly less complex procedure than TME, could require more documentation items in the operative report. The most recent 20-item ASCRS report for TME has been piloted in multiple institutions and was abbreviated for feasibility.² It is possible that, after prospective field testing of the current TES QIs described herein, the synoptic template could be shortened to a similar length as the ASCRS TME report (e.g., by removing some of the elements already documented elsewhere in the chart) if required.

CONCLUSION

Standardized operative reporting for TES is needed. We describe multidisciplinary, consensus-derived QIs for TES synoptic operative reports. This information will allow assessment of existing documentation for quality and can be used to generate a synoptic reporting template to improve perioperative communication for patients undergoing this procedure.

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