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Defining Outpatient Surgery: Perspectives of Surgical Staff in the Veterans Health Administration

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Abstract

Background—A standard definition of outpatient surgery that is aligned with the perspective of surgical providers is needed for consistent and focused surgical quality measurement. We sought to clarify the procedure characteristics that define outpatient surgery through a consensus process with multidisciplinary surgical staff from the Veterans Health Administration (VA).

Methods—A convenience sample of 14 VA surgical staff participated in three rounds of a modified-Delphi process. They rated procedure characteristics (e.g., settings, providers, anesthesia, and incision type) to include in a definition of outpatient surgery for adverse event detection.

Results—Consensus was reached on 63% of the criteria. Participants agreed to exclude procedures performed by gastroenterologists; in contrast, they agreed to retain endoscopic procedures. There was inter and intra-variation between rounds but no pattern based on staff discipline.

Conclusions—Contradictory responses and the lack of consensus on several key questions revealed few procedure characteristics that surgical staff agreed could be used to define outpatient surgery. Our findings suggest that contextual factors associated with specific procedures may be important; future efforts to define outpatient surgery should consider both the characteristics of the procedure and the procedure itself.

Keywords

Ambulatory surgery; patient safety; adverse events; Veterans

Background

Current estimates of outpatient surgical adverse event rates vary between 1–5% depending on the population studied and the type of events considered.¹² While inpatient surgery has long been the focus of quality and safety measurement, methods to detect adverse events in outpatient surgery, including consistent definitions of which procedures qualify as surgeries and which events can be considered adverse events, lag far behind. Broadly speaking, any procedure that does not require an overnight hospital stay may be an outpatient surgery; however, the demarcation between surgery and a minor office procedure is much less clear. A standard definition of outpatient surgery from the perspective of surgical providers is needed for consistent measurement of quality of care issues and more focused surgical quality improvement initiatives.

The purpose of this study was to generate a definition of outpatient surgery through a consensus process with a multidisciplinary panel of surgical staff from the Veterans Health Administration (VA). We sought to define outpatient surgery based on characteristics of the encounter itself (e.g., provider type, anesthesia type, pre and post-visit care). A definition that specifies these characteristics will facilitate a more precise focus for attention to quality of care. (e.g., in the operating room (OR) versus office; by a surgeon versus a gastroenterologist, etc.). Our consensus process permitted surgical staff most closely affected by quality measurement to identify all the characteristics of an outpatient encounter that define it as a surgery. This work contributes to the literature on outpatient surgery and offers a starting point to reaching a broadly accepted definition of outpatient surgery for surgical quality measurement.

Methods

We used a modified-Delphi approach to consensus building based on the RAND/UCLA guidelines to obtain input from surgical staff to arrive at a definition of outpatient surgery.³⁴ This approach uses three rounds of consensus building. We recruited a multidisciplinary sample of 14 OR nurses, surgeons, anesthesiologists and residents actively participating in surgical care in VA surgical facilities across the United States. In each round of the consensus process, participants rated categories of encounter characteristics including provider type (e.g., surgeon or gastroenterologist), location of the procedure (e.g., operating room or VA clinic), type of pre/post-op care, anesthesia type (e.g., general or regional) and incision type (e.g., endoscopic) on a scale of 1–5 (1=must include, 5=must exclude). We established consensus as an interquartile range ≤ 2 ; we retained items in the definition of outpatient surgery if the median rating was <2 . We only asked participants to continue rating items if consensus had not been established in the previous round. The VA Boston Healthcare System's Institutional Review Board approved this research.

Results

Participants from eight VA facilities (three Chiefs of Surgery, four surgeons, three nurses, two anesthesiologists, and two surgical residents) rated encounter characteristics. We achieved consensus on 51%, 54% and 63% of the criteria after Rounds 1, 2 and 3, respectively (Table 1). Participants agreed to exclude procedures performed by gastroenterologists in Round 1, but we did not achieve consensus on procedures performed by dermatologists even after adding a specific question about Mohs surgery. Similarly, we did not achieve consensus to exclude or include procedures performed in several other clinics, including minor surgeries in non-OR settings, even after adding extra information about the clinics in Round 3. Although participants agreed to keep procedures performed under general, regional or monitored anesthesia after Round 1, consensus to exclude procedures under local anesthesia was not reached until Round 3.

Although we did not observe any patterns associated with ratings and the participant's role in surgical care, there was some inter and intra-variation between rounds (i.e., 3 participants were inconsistent in their responses across rounds) (Table 2).

Discussion

The objective of this study was to establish consensus around a definition of outpatient surgery based on encounter characteristics using input from surgical staff; however, consensus was met in only 63% of the criteria reviewed. Furthermore, there was significant variation between rounds of consensus building for 3 of the 14 participants. Although the multidisciplinary surgical staff participating in the consensus process recognized differences between outpatient procedures and surgeries there appeared to be little agreement about which encounter characteristics contributed to this differentiation.

We sought to use front-line staff perspectives to obtain a definition of outpatient surgery that would have broad support and high face validity. However, criteria that reached consensus included several contradictions. For example, we could not exclude procedures performed by gastroenterologists from the definition of outpatient surgery while retaining procedures with endoscopic entry – most endoscopies are performed by gastroenterologists. We also could not keep procedures performed in a variety of non-OR clinics while excluding procedures done under local anesthesia – procedures done under a higher level of anesthesia are primarily performed in the OR. Our findings suggest that contextual factors associated with specific procedures may be important. Therefore, it will be challenging to define outpatient surgery using characteristics of an encounter alone without taking into account the procedure itself.

Our results suggest that reaching a definition of outpatient surgery that has face validity within the surgical community will continue to pose a challenge. Surgical staff have conflicting views about what characterizes outpatient surgery and the contradictory findings related to provider type and anesthesia type may require further expert input to reach a definition of outpatient surgery that has broad support. Establishing a definition of outpatient surgery for adverse event detection that includes detailed information about the procedure

itself may facilitate more consistent measurement of quality and safety outcomes in this expanding area of practice.

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Table 1.

Criteria for Consideration for the Definition of Outpatient Surgery – Consensus Results from Rounds 1–3 (n=14 participants)

Criteria 1=must include; 5=must exclude	Round 1				Round 2				Round 3			
	Average	Median	Range	IQR	Average	Median	Range	IQR	Average	Median	Range	IQR
Provider Type												
Same day procedures performed by gastroenterologists [†]	2.07	2.0	1–5	1.0								
Same day procedures performed by dermatologists	2.92	2.5	1–5	2.0	3.29	4.0	1–5	2.0	3.21	4.0	1–5	2.0
<i>Same day Mohs procedures performed by dermatologists</i>									2.50	2.0	1–5	3.0
Location in any of these VA Clinics												
General Surgery [*]	1.58	1.0	1–4	1.0								
Cardiac Surgery	2.75	3.5	1–4	2.8	2.85	3.0	1–5	2.0	3.00	3.0	1–5	2.8
Ear, Nose, And Throat [*]	1.58	1.0	1–4	1.0								
Obstetrics/Gynecology [*]	1.67	1.0	1–4	1.0								
Hand Surgery [*]	1.75	1.0	1–4	1.0								
Neurosurgery [*]	1.83	1.0	1–4	1.0								
Orthopedics [*]	1.58	1.0	1–4	1.0								
Plastic Surgery [*]	1.58	1.0	1–4	1.0								
Podiatry [*]	1.83	1.5	1–4	1.0								
Proctology	1.92	1.5	1–4	1.8	2.36	2.0	1–5	1.8	2.00	2.0	1–4	1.8
Thoracic Surgery	2.25	2.0	1–4	2.0	2.86	2.5	1–5	2.8	2.07	1.5	1–5	1.8
Urology [*]	1.67	1.0	1–4	1.0								
Vascular Surgery	1.92	1.0	1–4	1.8	2.57	2.0	1–5	3.0	2.21	2.0	1–5	2.0
Prosthetics / Orthotics [†]	3.83	4.0	2–5	1.0								
Vascular Laboratory	4.00	4.5	1–5	2.0	3.29	3.5	1–5	3.0	2.36	2.0	1–5	2.0
Cast Clinic	3.92	4.5	1–5	2.0	3.21	3.5	1–5	2.8	3.29	3.5	1–5	3.0
Women's Surgery [*]	1.58	1.0	1–3	1.0								
Anesthesia Special Procedures In Operating Room (OR) Suite [*]	1.33	1.0	1–3	0.8								
Patient Care In OR [*]	1.42	1.0	1–3	0.8								
Cystoscopy Room Unit For Outpatient	2.08	2.0	1–4	1.8	2.07	2.0	1–5	1.8	2.36	2.0	1–5	2.0

Criteria 1=must include; 5=must exclude	Round 1			Round 2			Round 3		
	Average	Median	Range	IQR	Average	Median	Range	IQR	Range
Chemotherapy Procedures Unit-Surgery	2.33	2.0	1-4	1.8	3.00	3.0	1-5	2.0	1-5
Non-OR Anesthesia Procedures [†]	2.08	2.0	1-4	0.0					
Minor Surgery In Non-OR Setting	2.33	2.0	1-5	1.8	2.71	2.5	1-5	1.8	1-5
Pre-op Care in any of these Clinics									
Pre-Surgery Evaluation By Non-MD [†]	2.50	2.0	1-5	2.5	2.86	2.5	1-5	2.0	1-5
Amputation Clinic [†]	3.27	3.0	1-5	1.0					
Anesthesia Pre-Operation (OP) and/or Post-OP Consultation	1.83	1.0	1-5	2.0	2.50	2.0	1-5	3.0	1-5
Pre-Bed Care MD (Surgical Service) [†]	2.33	2.0	1-5	1.8	3.23	4.0	1-5	2.0	1-5
Pre-Surgery Evaluation By Nursing	1.91	1.0	1-5	2.0	2.86	3.0	1-5	2.8	1-5
Post-op Care in any of these Clinics									
Anesthesia Pre-Operation (OP) and/or Post-OP Consultation	1.67	1.0	1-4	1.8	2.57	2.0	1-5	2.8	1-5
Pain Clinic [†]	3.00	3.0	1-5	2.0	2.79	3.0	1-5	1.8	1-5
Prosthetic Supply Ordering Services [†]	3.50	3.5	1-5	1.0					
Telephone Surgery	3.00	3.0	1-5	1.8	3.57	4.0	1-5	1.8	1-5
Telephone Prosthetics/Orthotics	3.67	3.5	2-5	1.8	3.71	4.0	1-5	2.0	1-5
Anesthesia Type									
General [*]	1.33	1.0	1-5	0.0					
Regional [*]	1.00	1.0	1-1	0.0					
Monitored [*]	1.08	1.0	1-2	0.0					
Local [†]	1.67	1.0	1-4	1.8	2.07	2.0	1-4	2.0	1-5
Incision Type									
Irrigation or reopening [*]	1.67	1.0	1-4	1.8	1.71	1.0	1-5	1.0	
No incision, endoscopic entry [*]	1.75	1.5	1-4	1.0					

Notes: Italicized=added in Round 3

^{*} = achieved consensus to include in the definition of outpatient surgery[†] = achieved consensus to exclude from the definition of outpatient surgery.

Table II.

Role of Consensus Participants and Consistency of Responses over Rounds

Correlation	Chief of Surgery				Surgeon				Nurse				Anesthesiologist				Surgical resident	
	Participant	A	B	C	D	E	F	G	H	I	J	K	L	M	N			
Round 1 and 2		-0.5	0.7	0.6	0.9	0.4	-0.1	0.9	0.1	0.7	0.6	0.5	0.7	0.2	-0.7			
Round 2 and 3		-0.1	0.8	0.4	0.6	0.7	0.6	0.6	0.5	1.0	0.6	0.1	0.6	0.2	0.3			