



Attendings' Perceptions of Authentic Evaluation Criteria for Effective Surgical Consults

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OBJECTIVE: The authors aimed to investigate faculty evaluation criteria for an effective oral surgical presentation in actual patient care contexts.

DESIGN: We conducted a 2-step observation-based qualitative study. Residents audiotaped oral presentations of a surgical consult to an attending. Evaluation panels listened to the recordings and discussed to develop joint feedback for the resident. The panel discussions were recorded and served as the data source for this study. We analyzed the data following the grounded theory approach using open coding and axial coding.

SETTING: The study setting was at Southern Illinois University School of Medicine, a 5-year general surgery residency program in Springfield, Illinois.

PARTICIPANTS: Thirteen residents out of 19 in the program participated by virtue of having submitted recordings of a patient care consult presentation via phone. Evaluation panels consisted of general surgery academic and community faculty, as well as senior residents.

RESULTS: Several criteria for effective oral presentations emerged that have rarely been discussed in prior literature. Themes included:

(1) The strategic opening is critical as it “sets the stage” and frames how the attending will listen. Situational factors, such as consideration of time of the day and urgency, should be accounted for in the opening.

(2) A deductive structure defines the relevance of the presented information. Clinical judgement should precede supporting evidence. Attending physicians perceive important information as unnecessary if provided outside of this framework.

(3) Established trust between a resident and a surgeon determines the level of detail expected of the presenting resident. With increasing trust, surgeons expect residents to present fewer details; if too much detail is included, the presentation may be assessed as ineffective.

(4) Surgical descriptions are appreciated for their value in promoting the attending’s visualization or mental picture of the patient condition.

(5) Oral emphasis using voice tone and pace can be helpful for capturing attending attention.

CONCLUSIONS: These findings can be utilized to improve the current training program and assessment rubrics toward contextualized work-based assessment practices in surgery. Oral patient presentation skills are neither static nor universal, but fluid and reflexive, based on trust, and situational factors. (J Surg Ed 78:1319–1327. © 2020 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

ABBREVIATIONS: PGY Post Graduate Year

KEY WORDS: Communication Skills, Oral Consultation, Assessment, Resident, Surgical Education

COMPETENCIES: Patient Care, Interpersonal and Communication Skills, Professionalism, Medical Knowledge

INTRODUCTION

Oral case presentations are a primary means for physician-to-physician communication for patient care and safety.^{1,2} Done appropriately, oral case presentations facilitate seamless transitions of patient care from provider-to-provider or other healthcare team members. Conversely, ineffective oral case presentations or serious

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communication breakdowns can lead to sentinel events and medical errors.² The skills needed to have effective and efficient oral case presentations are slowly developed from the initiation of medical school through residency training.

Despite the importance of oral case presentation skills, there is a lack of well-defined, precise methods for assessment of such skills by a resident performing patient consults. Often during surgical resident training, these skills are learned from trial and error. In their recent publication, Stucke et al. identified a 6 step outline of the cognitive tasks involved in oral surgical consultation, including receiving information, bedside evaluation, obtaining additional information, decision making, communication, and documentation.³ Six performance traits were also identified including the ability to triage urgency of consults, thoroughness, thoughtfulness, and compassion, ability to incorporate extenuating circumstances, ability to proceed when uncertainty exists, comfort synthesizing clinical details, and the development of a safe plan within acceptable practice standards. While this framework certainly provides a foundation for evaluation of consultations, it may not give a full picture of a resident's performance of a surgical consult in actual patient care, given that this study was based on participating surgeons' general perceptions of appropriate content, as opposed to witnessed resident performance.

A surgeon's effective communication in authentic work settings is deeply context dependent.⁴ Existing criteria such as mentioned above can be helpful as general concepts. However, when dealing with a resident surgeon's performance in real patient care situations, it may not grasp the key nuances of effective communication skills. Therefore, assessment criteria or rubrics without contextual considerations have inherent limitations for work-based assessment.

In addition, the American Board of Surgery (ABS) in recent years has begun to investigate competency-based training and assessment strategies.⁵ These changes stem from recent literature suggesting graduating residents are less prepared, not only for fellowship positions, but especially for independent practice.⁶⁻⁸ To evaluate a surgical resident's competency, the ABS has developed a pilot evaluation of 5 Entrustable Professional Activities (EPAs), one of which is to provide a surgical consultation to other healthcare providers.^{9,10}

Our aim in this study is to specifically observe and analyze evaluation panels' discussions of actual oral surgical case presentations between residents and attending staff to determine appropriate assessment criteria for an effective oral presentation. Herewith we examine how attending surgeons evaluate the effectiveness of residents' oral presentation skills in real patient care contexts.

The findings of this study can be utilized to improve oral presentation skills, and to inform training program assessment rubrics in a fashion consistent with contextualized work-based assessment practices in general surgery. Such information can also inform further evaluation of the consultation EPA as developed by the ABS. This research also has the potential to improve patient safety affected by effective consultative communication skills, and to inform assessment criteria of effective oral presentation in other patient care contexts across medical disciplines beyond general surgery.

METHODS

Research Design

We designed a qualitative observational study using a grounded theory approach.¹¹ In order to secure authenticity of residents' oral patient presentation activities and the evaluation of those skills, we adopted a 2-step approach: (1) residents recorded their oral presentations to an attending on the phone in the context of an actual patient consultation, and (2) evaluation panels listened to the audio of that presentation at a later time and discussed their impressions, which were recorded. In this way, we endeavored to capture residents' oral patient presentation skills in an actual patient care context, and to observe evaluation panel members' impressions and explanations for their evaluation practice in a natural setting. Audio-recordings of the evaluation panels' discussions provided a rich resource for studying how judgments pertaining to communicative competence are formed.¹²

Setting and Participants

The study setting was at a 5-year general surgery residency program at a Midwest medical school in the USA. Thirteen residents (out of 19 in the program) representing all PGY levels were included in the study. The evaluation panel of participants consisted of 9 general surgery academic faculty, 3 community general surgeons who serve as clinical faculty, and 4 PGY 5 general surgery residents.

Data Collection

With an IRB approval (# 016234), residents were required by the residency program to audiotape 1 phone consult of their choice for evaluation purposes. Thirteen of the recordings from the first and second quarter, representing all PGY levels, were transcribed without patient identifiers. The remaining 6 recordings were not included in

this study because some of the audios had the low quality to be transcribed or were not needed as we reached data saturation. Then, with their consent, an evaluation panel (1) listened to an audio recording of a resident' surgical consult, (2) individually completed an open-ended feedback form that include 3 sections: overall general impression, areas of strength, and areas for improvement, (3) listened to the audio again with a transcript to see if they missed anything, and then (4) discussed with the other panel members general impressions, what went well and what could be improved. The open-ended feedback form was designed to capture the panel members' authentic impression without a preset framework, and provided an independent template for subsequent group discussion. In the group evaluation, the panel members shared and discussed their thoughts to determine feedback that would be provided to the resident. For this project, we recorded the panel discussions as our primary data source and collected their individual written feedback forms as a secondary data source. Fourteen evaluation panel group discussions were recorded and transcribed for analysis from June, 2018 to August, 2019. After each panel discussion, a debrief session was conducted in the presence of skilled qualitative research team members so as to delineate what new topics were discussed. In this way we were able to identify the point where no new topics surfaced in the panel evaluation. After completing 10 panel discussions, the data saturation point had been reached.

Data Analysis

For data analysis, we used the grounded theory approach as we anticipated discovering themes emerging from the expert panel discussions.¹¹ After 4 calibration meetings in November and December 2018 to discuss coding rules and process and to enhance inter-rater agreement, 4 researchers collaboratively completed open coding. Then, the project leader completed axial coding where she deductively reread the data following frequently-occurring codes to look for relationships among codes and code families based on her expertise in qualitative research. In the axial coding process, she developed network analysis diagrams of each grounded code and she reviewed them with the research team for their confirmation and agreement. Qualitative data analysis software, Atlas.ti (version 7), was employed to help manage the coding and analysis processes.

RESULTS

Five themes emerged from the data; Table 1 provides the summary of the themes and the associated codes. Below are the elaborated explanations of the main themes.

Strategic Opening to Capture the Attending's Attention

The opening is critical as it "sets the stage" for the interaction, and frames how the attending will listen. In the opening, residents generally provide a reason for the consult and a brief summary of the case including context, clinical judgment, and management plan. Attending surgeons, however, want to know the urgency in the opening, which impacts how they will listen to the information that follows. The priority of the attending's interest is if the patient's case is operative or nonoperative. The panels explained that this happens because surgical consults often happen in the middle of the night or in the midst of other duties, and attending surgeons want to know early in the process if they will need to return to the hospital or interrupt other work flow or out of hospital activity. Absent a strategic opening, it is more difficult for attendings to maintain their focus. Accordingly, these situational factors, such as consideration of time of day and the acuity level of the patient should be accounted for in the strategic opening. Illustrative quotes from panelists included the following:

"Did he say why she was on blood thinner? . . . I suppose I spaced out... And the reality is this is an afternoon consult, but if you get a consult at 2 am in the morning when you are woken out of bed, you want to be focused in terms of do I have to get dressed and get out the door? And so having those queues at the beginning actually, I think are the most important for me." (Data 3:14)

"Because now I'm not sitting there like, "Am I coming? Am I going" Am I coming?" I'm just like, "Okay, tell me about it." Whereas if he says, "Dr. OO, I believe that we're going to need to go to the operating room with this patient." My ears are up about different things." (Data 2:62)

Deductive Structure Defines the Relevance of the Presented Information

With a strategic opening in which urgency and diagnostic or interventional plans are highlighted, attendings can gauge the level of relevance and importance of each piece of subsequent information. The panels agreed that attending surgeons always anticipate a deductive structure of information where diagnostic or interventional plans are presented followed by the relevant information that they anticipate to be included. Even though they are listeners who receive information, they expect the residents who are information providers to follow their anticipated deductive information structure during a surgical consult.

Attendings would perceive important information as unnecessary if provided outside of this deductive framework, as this leads to attending inattention or distraction. Attendings would lose attention in 2 described situations: (1) when structure and/or order is mismatched and (2) if irrelevant information is given. Attendings want to have a reason of why they get unexpected or irrelevant data, and may struggle cognitively processing if the data is indeed irrelevant at the time presented, but may become relevant later. Attendings' cognitive load is thus spent trying to figure out why they were given this information, rather than following and tracking with the residents' continued information sharing.

"You learn to hear what you need to hear based on what you know the problem is, so I'd much rather know ahead of time and then listen for the things that I know I need to hear and let them go through their presentation. (Data 1:55)"

"I love...having that summary statement upfront. It was very difficult to follow...because the order of the presentation was a little bit unexpected. . . .When I look at the transcript, I think the order was...a written H&P, but that's a little bit different from how I at 2:00 or 3:00 in the morning want to hear." (Data 1:8)

"I agree there was a lot of irrelevant history and I wrote down that she repeated information about a non-critical injury, but that was again before I knew that the patient actually sustained an orbital fracture and so that, you know, she described the bruising twice before and again, putting that in context with a summary statement beforehand would have made a lot more sense and it was going to hindsight that I realized, "Okay. That's the patient's really only injury is the orbital fracture." (Data 1:18)

Patient data can be selectively used and become relevant information in this backward structure. Therefore, residents are expected to find a correct order that then escalates the value of the information that they present.

Surgical Description for Attending's Visualization of the Patient's Condition

The panels noted that when a resident's description of the anatomic area of surgical concern, including its historical operative context is appropriately detailed, this enables them to form a mental picture of the patient's status and is highly valued. As seen in the excerpts below, the surgical description includes operative descriptions, anatomic descriptions, and major physical exam descriptions. The surgical description allows an

attending to visualize the patient's physical status as part of the overall consultative picture and assessment.

"One of the things that I think really helps is accurate, precise operative dictations. . . .When the residents dictate for ports and I always write in there ports, you know, two right subcostal ports, one was at the midclavicular line, one was at the interaxillary line. So I know, then in your head, you see subcostal, that you know roughly where they were versus when they say two subcostal ports. . . .so just learning how to describe it. And I think operative notes for a surgeon are a way to learn how to do that. (Data 10:17)"

"one of the other things that I think was really nice too that he did is he painted the picture when you're laying in bed at 2 a.m. and you can't look at the CT of what the CT said because many times the report will say free air. But there's a difference between massive free air and he describes scattered little air bubbles a couple by the liver, and I think a couple down here. So you're like, okay, it's a micro perforation this is matching the CT what we're expecting based on his pain was all kind of localized he wasn't toxic or septic. This is a micro-perf maybe forming an abscess. This is the picture of somebody you can treat non-operatively, or you can treat through antibiotics. Because I've had it before the residents have been consulted for free air and I'm okay they don't sound safe. And then I go look at the CT and I guess I didn't ask the question but then I look at the CT and I'm like the free air's like a little similar bubble there. This is not like, free air is like a surgical emergency. And so he put it in context. (Data 13:6)"

Oral Emphasis for Attention

The panel noted the effective function of oral emphasis to communicate an important moment in the information exchange. They used terms for written emphasis such as highlighting and underlining in their descriptors, even though the interaction was verbal only via phone. As the excerpts below indicated, slowing the pace and changing inflection or tone of voice are considered as examples of oral highlighting. This oral emphasis can facilitate attending focus on the most important information.

"The only critical things I would say are...actually, I would say it was even more so with the attending, was on the line, but her voice kind of fades at times, and then she'll pick up again, and then it'll fade. And so, making sure that you're... I think when she does that, it parallels with when she has something particularly important she wants to say versus she's

just relaying information that's not so critical, but it made me have to kind of tune in a little bit more at times.”(Data 4:4)

“He was talking really fast, and I couldn't process everything. And then he slowed down, and I began to, you know...because he started underlining certain elements. Right before he was talking about the colonoscopy, I spaced out for a little and then he underlined that, and I cued back in. Just highlighting it with his voice. Man 2: Either slowing down the pace or changing his inflection and tone.”(Data 3:15)

Navigating a Delicate Dance: Juggling Trust, Patient Familiarity, and Level of Detail Provided

Established trust between a resident and a surgeon determines the level of detail necessary for the resident to present. The level of trust is developed through their prior work experiences. As senior residents have more work experience with attending surgeons, this translates into how they can or should present. As more trust is developed, attendings expect fewer details. Such succinctness as a function of experience is interpreted as competence, especially when the resident knows that the attending is already familiar with the patient. When there is less trust or familiarity, however, an attending anticipated more supporting evidence for the proposed clinical judgment and plans. In the context where there is less prior relationship and related trust, or background experience, overly succinct, or abstracted information is seen as incompetence. Especially with more acutely ill patients or major interventional decisions, attendings expect comprehensive information from residents with whom they have less experience. Specificity and detailing of information thus seems to be especially important when the level of trust and/or familiarity is low.

“So in case that there's a resident that you trust, and you know everything about he or she does, but if he or she tells too much details, then they will counteract. . . That's tiresome. (Data 5:20)”

“My level of tolerance and my level of expectations when I get called is framed by who is calling me and what level of experience they are, and also my previous experiences with them. (Data 1:57)”

“Labs are missing. CT findings are missing. He didn't say prior operations in all of it. A lot of detail

is missing, but it will be fine because we know this resident very well. (Data 5:19)”

DISCUSSION

Surgeons' oral case presentations are an important part of clinical work processes, and accordingly are a fruitful area for assessment focus, particularly with regard to communication competencies. Effective oral case presentation assessment requires workplace-based contexts in which the requisite skills can be observed in real time as a function of normal work flow. In this study, we focused on real-time surgical consultation to investigate what constitutes effective oral case presentation skills in authentic patient care settings. Findings that emerged from the data presented have rarely been discussed in the literature, and therefore can serve to extend the existing knowledge of oral patient presentation skills, as well as related assessment and feedback practices.

The findings imply that the resident's strategic opening to meet the attending's anticipated deductive structure should be considered in developing and evaluating authentic oral communication skills. In general, junior residents (interns) have a tendency to follow a scripted and generic approach to the oral presentation, learnt in medical school, rather than a deductive structure that addresses urgency, suspected diagnosis, and surgical planning priorities up front which are critical for an effective work process. Oral presentation skills that students learn during their general medical training are typically not work-based, and often follow a comprehensive and inductive written note template designed to provide a complete set of patient information. However, in real work settings when an attending surgeon (the listener) has a specific work purpose, the listener tends to listen selectively for significant information. Teaching residents how to frame their presentation in alliance with this selective and deductive structure can facilitate an effective transition from the comprehensive opening data review format taught in medical school to a more conclusion-oriented structure in which selective supporting information is given after an overall decision or direction is summarized at the outset.

While relatively under-investigated in surgical education, listeners' anticipated structure, and expectation for specific information has been described in literature in other fields. In the study of independent clinical work in internal medicine and emergency medicine, Kennedy et al. found that a trainee's presentation of anticipated information was crucial in building clinical

trustworthiness of the trainee.¹³ In musical performance, listeners create expectations for forthcoming musical structure regarding how a musical sequence will continue. This leads to a more appreciative and aesthetic experience depending on the performer's alignment or misalignment with those expectations.^{14,15} Military decision briefings have been given a structure that parallels what the present study reveals. The decision briefing format is as follows: Introduction - state the problem and the recommendation; Main Body - provide an objective presentation of both positive and negative facts bearing upon the problem; Closing - briefly recap main ideas and restate recommendation.¹⁶ Given these templates used in other high performance contexts, it is reasonable to consider listeners' anticipated structure and related expectation in developing residents' oral patient presentation skills.

It is interesting that the deductive structure not only influences the anticipated form of effective communication, as outlined above. This structure also highlights the relevance of presented information, which serves to strategically maximize the value of information for the attending. Providing relevant information as a foundation of presentation skill has been discussed in numerous communication studies.^{17,18} As noted above, medical students tend to present excessive information trying to be complete, as they do not fully understand the clinical relevance of each piece of information, and are often initially evaluated for comprehensiveness rather than relevance, as is appropriate for a novice learner. Attending physicians often find this as a challenge in their interactions with junior residents. They may interpret continued dependence by the resident on a generic comprehensive information model as a reflection that the resident has not yet acquired the depth of understanding and cognitive flexibility to see each case as individually nuanced and filterable to a level of relevance. Accordingly, the lack of the preferred structure suggests to the attending not just that the learner remains committed to undergraduate level rubrics, but that the trainee may in fact lack the ability to prioritize information based on its decisional value. Lingard and Haber¹⁷ describe relevance, as it pertains to oral patient presentations, as a communication framework that trims away the excess information to create a concise medical discourse. However, in this prior work, it was less clear as to how residents (presenters) can present the relevant information in an effective way such that the attending (listener) fully appreciates the value. Our findings indicate that inappropriate structure that deviates from a deductive format may cause the attending to miss relevant information, even if presented. It thus

appears that the form of the communication framed by the resident has much to do with the ultimate function and effectiveness thereof.

Another conclusion that the current findings provide is that residents' verbal description of the focused physical exam, including a detailed anatomic description of the area of concern, is an important component of effective communication during surgical consultation. Interestingly, verbal descriptions of visual images have rarely been discussed as an area of focus in surgical communication literature. In other fields such as neuropsychology and neuroscience, the imagery generated from a verbal description of the objects has been a longstanding area of investigation.^{19,20} This literature has suggested that a well-structured and focused description tends to provide a more effective and accurate presentation of the described images than description lacking such structure and focus.^{19,21} Considering the current study findings and the literature from other fields, it is apparent that surgical oral case presentation skills require the capability to create a shared mental and visual model that is verbally conveyed. Further research on effective ways for residents to describe the visual images they encounter in patient assessment, including accurate anatomic labeling and framing, would be fruitful and instructive.

The most profound finding of the current study is the dynamic nature of assessing oral case presentation skills depending on the relationship and trust between attendings and residents. The literature on oral case presentation skills generally emphasizes reporting the details of patient information thoroughly.²² This is again what medical students learn during their clerkships and would bring into their residency, as is appropriate in a context where experience does not allow an entrustment of filtered omission of information based on experiential relevance. In contrast, the current study found that the level of detail a resident is expected to present during a surgical consult depends on trust and prior work experiences with the attending surgeon. With established trust, a resident can be succinct without all details, which is seen as an indicator of competence despite the lack of information. Therefore the resident is deemed capable to accomplish the clinical work semi-autonomously, if not independently.¹³ While not widely studied to date, recent literature supports the importance of these social and relational dynamics between a resident and an attending in assessing oral case presentation skills.^{23,24} Landreville et al.²⁴ reported emergency medicine physicians' expectations on information level of detail varied based on trainee levels, familiarity, clinical context, and

task. Attending physicians' assessment of trustworthiness of a trainee is not simply based on knowledge and clinical skills but also the trainee's awareness of his and/or her own limits, and conscientiousness for thorough information gathering.¹³ While it is not clear how a resident gauges the level of trust endorsed by the attending surgeon, it appears to be an essential part of how an attending assesses an effective surgical consultation.

The findings presented can be utilized to improve surgical consult practices as well as assessment rubrics toward contextualized work-based assessment practices in surgery. Even though this is an essential skill for patient care, residents often receive little formal guidance on how to accomplish oral presentations optimally, and until recently programs have generally lacked a formal framework for assessment of such skill. In the same context as see one, do one, teach one modeling of behavior is common in resident development, and has historically likely been the experiential model out of which resident behavior, if not assessment rubrics, have been developed. But considering our finding that a senior resident with extensive work experience and trust with the attending would be considered to be demonstrating competence by minimizing detail during oral case presentation, it may be difficult for junior residents to learn by observing senior residents' practices. In the absence of an explanation, this can lead to confusion and frustration for the resident seeking to imitate what appear to be functional patterns demonstrated by a more senior learner. This is an area of resident development that could be profitably discussed in a formal session focused on establishing common agreement among residents and attending physicians.²⁵ Such discussions with learner engagement may be particularly valuable as broader use of workplace-based assessments, such as the EPA initiative of the ABS, is brought into surgical education.²⁶

Our study has several limitations. First, while we analyzed 14 panel discussions of resident oral consult data, our sample size might be relatively small to identify all nuances of general surgical patient consult situations. However, we paid attention to data saturation to see if 1 year of data was sufficient to identify all surgical patient oral presentation skills. After completing 10 panel discussions, it appeared the data saturation point had been reached, as we did not identify any new concepts thereafter. Second, the residents' choice in recording their

oral patient consult once per quarter may have entailed selection bias, as they may have chosen to record only more straightforward cases. Lastly, the study setting included only 1 general surgery residency program. Residency programs with different specialties and with different patient and resident populations may have different or additional findings.

In conclusion, surgeons' oral patient presentation skills are neither static nor universal, but fluid and reflexive, and are based on relational and situational factors in surgical work environments. The findings of the study can be utilized to improve the current training program and assessment rubrics toward contextualized work-based assessment practices in surgery.

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This study was reviewed and exempted by IRB at Southern Illinois University School of Medicine.

PREVIOUS PRESENTATIONS

This study was presented at the 14th annual Academic Surgical Congress meeting in Houston, Texas in February 2019 and the AMEE Ottawa conference in Kuala Lumpur, Malaysia in March 2020.

APPENDIX

Table 1

TABLE 1. Summary of the Themes and the Associated Codes

Themes	Associated Codes
Strategic opening to capture the attending's attention	Attending expectation Reason for consult Urgency/ Operative or nonoperative Time of the day
Deductive Structure Defines the Relevance of the Presented Information	Deductive/Earlier points Clinical judgement Attending's anticipated structure Relevant/pertinent data Attending inattention Time of the day
Delicate Dance to Juggle Trust, Patient Familiarity and Level of Detail Provided	Trust Familiarity/previous experience Balance of details Relevant/pertinent data PGY level
Surgical Description for Attending's Visualization of the Patient's Condition	Attending visualization Operative description Anatomic description Physical exam
Oral Emphasis for Attention	Emphasis Informal tone In person vs. phone report Speed/pace Voice modulation Written vs. oral

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