ANESTHESIOLOGY

Compassionate and Clinical Behavior of Residents in a Simulated Informed Consent Encounter

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EDITOR'S PERSPECTIVE

What We Already Know about This Topic

- Compassionate behavior in clinicians includes understanding patients' psychosocial, physical, and medical needs; promptly attending to needs; and engaging patients to the extent they wish

What This Article Tells Us That Is New

- The investigators evaluated compassionate behavior of anesthesia residents in a simulated preoperative encounter with a patient in pain before urgent surgery
- Anesthesia residents had variable and, at times, flawed recognition of patient cues, responsiveness to patient cues, pain management, and patient interactions

ABSTRACT

Background: Compassionate behavior in clinicians is described as seeking to understand patients' psychosocial, physical and medical needs, timely attending to these needs, and involving patients as they desire. The goal of our study was to evaluate compassionate behavior in patient interactions, pain management, and the informed consent process of anesthesia residents in a simulated preoperative evaluation of a patient in pain scheduled for urgent surgery.

Methods: Forty-nine Clinical Anesthesia residents in year 1 and 16 Clinical Anesthesia residents in year 3 from three residency programs individually obtained informed consent for anesthesia for an urgent laparotomy from a standardized patient complaining of pain. Encounters were assessed for ordering pain medication, for patient-resident interactions by using the Empathic Communication Coding System to code responses to pain and nausea cues, and for the content of the informed consent discussion.

Results: Of the 65 residents, 56 (86%) ordered pain medication, at an average of 4.2 min (95% CI, 3.2 to 5.1) into the encounter; 9 (14%) did not order pain medication. Resident responses to the cues averaged between perfunctory recognition and implicit recognition (mean, 1.7 [95% CI, 1.6 to 1.9]) in the 0 (less empathic) to 6 (more empathic) system. Responses were lower for residents who did not order pain medication (mean, 1.2 [95% CI, 0.8 to 1.6]) and similar for those who ordered medication before informed consent signing (mean, 1.9 [95% CI, 1.6 to 2.1]) and after signing (mean, 1.9 [95% CI, 1.6 to 2.0]; $F(2, 62) = 4.21$; $P = 0.019$; partial $\eta^2 = 0.120$). There were significant differences between residents who ordered pain medication before informed consent and those who did not order pain medication and between residents who ordered pain medication after informed consent signing and those who did not.

Conclusions: In a simulated preoperative evaluation, anesthesia residents have variable and, at times, flawed recognition of patient cues, responsiveness to patient cues, pain management, and patient interactions.

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Compassionate behavior is at the core of medicine. The Accreditation Council for Graduate Medical Education declares that "[R]esidents are expected to demonstrate: compassion, integrity, and respect for others, responsiveness to patient needs that supersedes self-interest…"[1] The Anesthesiology Milestone Project assesses for interactions that treat "patients and their families with compassion and respect."[2] In 2018, the American Board of Anesthesiology implemented an objective structured clinical exam specifically designed to assess counseling patients, professionalism, and interpersonal skills. Relevant skills evaluated include: "[E]licits questions and responds appropriately in lay terms" and "[D]emonstrates understanding of and concern for the situation of the patient."[3]

These requirements dovetail with patient descriptions of compassionate behavior. Patients want clinicians who actively listen; seek to understand patients and their

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needs; explicitly acknowledge the person, their emotions, their needs, and the situation; involve the patients as they desire; convey appropriate information; answer questions directly; and attend in a timely manner to these needs with action and ongoing evaluation as to success of the action.[4–8] Compassionate behavior is associated with altruism, empathy and embraces "going above and beyond."[8]

Compassionate behavior helps patients feel respected, acknowledged, and believed, particularly regarding chronic pain, tolerance of pain,[9] and the ability to manage pain. It improves patients' satisfaction,[10] retention of information, trust in clinicians, and feelings of control of their health.[11] In preoperative clinic visits, compassionate behavior improved patients' perception of the attitude of the anesthesiologist and the quality of information given, reduced preoperative anxiety, and boosted patient satisfaction.[12] Compassionate behavior facilitates history taking and enhances clinician job satisfaction.[5]

For anesthesiologists, the interpersonal attentiveness of compassionate behavior may be most prominent in preoperative patient care and the process and content of the informed consent discussion. Ideally, anesthesiologists customize the content of the discussion to the needs and priorities of the patient, focus promptly on patient concerns, and demonstrate reassuring expertise, in part through the quality of answers.[13,14] Anesthesia residents have reported generally inadequate preparation for the range of ethical, relational, and practical challenges of obtaining informed consent, which include determining decision-making capacity for patients in pain, knowing the extent and type of information communicated, and managing clinical time pressure.[15] Residents reported problems improvable by compassionate behavior, such as patient mistrust toward clinicians, difficult to resolve misunderstandings, and negative emotions by both patients and clinicians.[15]

In this study, we observed Clinical Anesthesia residents in year 1 and year 3 perform a preoperative evaluation of a standardized patient in pain who was scheduled for an urgent laparotomy. The goal of this study was to assess compassionate behavior through the extent and quality of recognition of patient cues, responsiveness to patient cues, treatment of signs of acute pain, informed consent content, and the balancing of communication and pain management during the informed consent process.

Materials and Methods

Study Design

This observational study used tools developed to systematically characterize physician-patient interactions and the content of the discussions between resident and a standardized patient while obtaining informed consent in a scenario designed to highlight potentially challenging behavioral interactions.

This study used one of the seven core scenarios of the validated Harvard Anesthesia Resident Performance Assessment, which was designed to assess broadly anesthesia resident competency.[16] Scenarios were performed at one dedicated simulation center and two hospital-based simulation centers; sites were physically similar. No site effect was seen. Assessments were conducted by different teams associated with each of the three simulation centers. Scenario administration across sites was standardized by using a detailed manual and systematic training of the simulation teams. The same confederate attending anesthesiologist and confederate nurse were in all scenarios

Subjects were from a convenience sample based on their availability from clinical rotations; Clinical Anesthesia residents in year 2 were unavailable. The seven scenarios were unknown to all residents. Residents were instructed to act as they would in their current practice. Residents knew they were being evaluated in general, but were unaware of the specific areas. Residents' views of the verisimilitude of this specific scenario in the study was not assessed, but for the overall scenarios, 95% of the residents thought that "the simulated experiences sufficiently realistic to allow you to act in ways that you think you would in an actual patient care situation."[16]

For the scenario used for this study, simulated encounter videos were coded to evaluate compassionate behavior, content, and interaction during the informed consent discussion, and how residents addressed the standardized patient's pain and other concerns while obtaining informed consent.

Participants

With institutional review board approval, a convenience sample of 65 residents provided signed informed consent and participated in this study scenario, including 49 first-year residents (28 men, 21 women) and 16 third-year residents (9 men, 7 women), from three Accreditation Council for Graduate Medical Education–accredited anesthesia residency programs. No statistical power calculation was conducted before the study. The sample size was based on the available data.

Scenario Design and Study Procedure

The standardized patient was a 52-yr-old man awaiting urgent repair of a perforated gastric ulcer and had a past medical history relevant for poorly controlled gastroesophageal reflux, a longstanding allergy to nonsteroidal antiinflammatory drugs that had caused shortness of breath, and a recent history of poison ivy treated with oral prednisone. He was on pantoprazole for treatment of his reflux and prednisone that was being tapered for treatment of poison ivy. He was medically stable but had significant abdominal pain. He had a functioning intravenous catheter. The surgeon wanted to proceed urgently to the operating room, creating time pressure for the resident.

A resident was escorted by an anesthesia faculty facilitator into the preoperative holding area where the standardized patient was on a stretcher. An embedded nurse was attending to the standardized patient. Residents were given oral scripted information that included the standardized patient's history and other relevant clinical history; no information was given about the standardized patient's appearance or presence of pain. Residents were instructed to obtain informed consent from the standardized patient, after which they would discuss the case and plan with their supervising anesthesia attending who was preparing the operating room for the case. The resident had time to review the standardized patient's chart that included the surgical history and physical exam, laboratory data, and surgical consent as well as review the clinical environment. The resident also had the opportunity to ask any questions of the facilitator. When the resident was ready, the facilitator left the room, which denoted the beginning of the scenario.

The standardized patient, embedded nurse, and surgeon were trained to standardized cues, responses, and other clinical events. The standardized patient was instructed to demonstrate acute abdominal pain and to express worry about postoperative nausea and vomiting because of a previous bad anesthetic experience. The embedded nurse was instructed to express concern about the standardized patient's pain. Standardized patients were instructed to increase intensity as the visit progressed. If pain medications were ordered, the standardized patient's pain cues decreased in intensity. To increase the realistic sense of urgency of the case, standardized events included a call from the operating room to see if the standardized patient was ready for transport to the operation room, and, later in the scenario, an embedded surgeon came into the room asking when the standardized patient could proceed to the operating room and whether he had received the ordered antibiotic.

Coding

Coding Procedure. Coder training and the subsequent coding was conducted in accordance with standard practice for coding behavior in medical interactions.[17] To identify all pain and nausea cues and resident responses to those cue, one trained, reliable coder coded all of the videotaped interactions; two additional coders each coded 50% of the interactions, so that all interactions were coded independently by two coders. In addition, two coders coded all information pertaining to discussion about risks and the procedure. Eight hours of coder training involved a detailed explanation of the codes of interest and the codebook developed by the study investigator responsible for the behavioral coding (M.A.R.), as well as observing practice videos and applying the coding system to those interactions independently. After independent coding on the practice videos, coders discussed their codes with the investigator (M.A.R.) and came to consensus. Once coders reached consensus independently on five interactions, they then were able to code the interactions independently. When discrepancies emerged in the final codes, the investigator (M.A.R.) made the final decision by reviewing the original videotape.

Response to Pain and Nausea Cues. We coded residents' responses to cues about pain and nausea using the validated Empathic Communication Coding System (table 1).[18]

As the first step, all pain or nausea cues emitted by either the standardized patient or the nurse were identified by the trained coders. A cue was defined as the standardized patient or nurse initiating an explicit statement about pain or nausea or the standardized patient displaying a nonverbal sign of pain. Cues ended when the standardized patient or nurse finished talking about that particular pain or nausea during their conversational turn, or the standardized patient stopped demonstrating the nonverbal pain cue. Cues were coded as pain or nausea; verbal, nonverbal, or both; patient- or nurse-initiated; and for intensity of the cue on a 1 (low) to 5 (high) Likert scale.

Residents' verbal responses were coded using the Empathic Communication Coding System response scale (table 1) for each pain or nausea cue identified in the interaction. If a resident's response met the criteria for more than one category, it was coded as the numerically highest category present in the response. Ordering pain medications was automatically scored as at least a 4 (Pursuit) on the Empathic Communication Coding System response scale. Responses were coded as "no opportunity for response" when, after a pain or nausea cue, the standardized patient changed the topic and/or asked a question, and the physician had no chance to respond. This only happened after two pain cues.

Table 1. Empathic Communication Coding System Response Scale[18]

Number	Name	Case-related Example
0	Denial/disconfirms	Ignores: No response
1	Perfunctory recognition	Automatic/scripted response: "Hmmm. Please open your mouth."
2	Implicit recognition	Addresses peripheral aspect: "We will get you to the operating room ASAP."
3	Acknowledgment	Acknowledges pain: "I see that it hurts."
4	Pursuit	Asks question about pain: "Did the pain medications in the ER help?"
5	Confirmation	Legitimizes pain: "This must be scary for you."
6	Shared feeling or experience	Similar experience: "I know the pain is awful. I had the same problem…"

ASAP; as soon as possible; ER, emergency room.

Residents were categorized into three groups based on whether and when they prescribed pain medications: residents who ordered pain medication before the standardized patient signed the informed consent form; residents who ordered pain medication after the standardized patient signed the informed consent form; and residents who did not order pain medication at any time during the encounter.

Greeting Behaviors. Residents were assessed on how they greeted the standardized patient. Greeting elements were coded according to whether the residents stated their name; stated their role; used the standardized patient's name; and inquired how the standardized patient preferred to be addressed.

Content of Informed Consent Discussion. A checklist designed for this study was used to determine the procedural elements of anesthesia topics and risk topics discussed. Checklist topics were chosen through review of anesthesiology texts,[19–21] peer reviewed articles,[13,14,22,23] and expert consensus. Unless otherwise specified, these items were coded as being either present or absent from the discussion.

Coded procedural topics comprised general anesthesia broadly and more specific topics of preoperative sedation; monitoring devices/plan; mask oxygen; induction of anesthesia *via* medications though intravenous catheter; placement of an endotracheal tube; placement of an arterial line; placement of central venous line/catheter; plan for extubation of the trachea; location of recovery; and anesthesia personnel present throughout surgery/present to address any problems/present to keep you safe.

Coded risk topics included: postoperative pain; postoperative nausea and vomiting; dental/oral cavity injury; sore throat; blood transfusion; postoperative intubation; awareness under anesthesia; and death.

Overall Quality of Discussion

Coders rated how well each resident described the anesthesia procedure (Cronbach's $\alpha = 0.86$), risks of the anesthesia procedure (Cronbach's $\alpha = 0.80$), and their global impression of the interaction (Cronbach's $\alpha = 0.85$) on a 1 (poor) to 6 (excellent) Likert scale. Interrater reliability was acceptable, therefore the average of the two raters was used for further analyses.

Coders counted how many times during the interaction the resident queried the standardized patient about whether he wanted more information, further explanation, or other questions (Cronbach's $\alpha = 0.57$). Coders coded whether each of these questions were open (*e.g.,* What questions do you have? [Cronbach's $\alpha = 0.60$]) or closed (*e.g.,* Do you have any questions? [Cronbach's $\alpha = 0.31$]).

Statistical Analysis

Ordinal data or frequency data were compared between groups using a chi-square test and summarized using median [interquartile range]. Interval and continuous level data were compared using independent *t* tests and ANOVAs, and described using mean, SD, partial eta squared (a measure of effect size; small partial eta squared effect is 0.01, medium is 0.06, and large is 0.14), and 95% CI where appropriate. All hypothesis tests were two-tailed. The null hypothesis was no difference between groups. IBM's Statistical Package for the Social Sciences was used for all analyses.

Residents' responses to pain cues using the 0 (less empathic) to 6 (more empathic) ordinal Empathic Communication Coding System were summarized using mean ± SD. A series of one-way ANOVAs analyzed differences between the residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter residents. All assumptions of ANOVA were met such that data were independent, normal (using the Shapiro–Wilk test of normality), and error variances were homogenous (using Levene's test for homogeneity of variances). For significant ANOVA *F*-tests, *post hoc* analyses using Tukey honest significant difference test assessed significant differences between groups.

Informed consent frequency data were analyzed by descriptive statistics and CI and summarized using median, mode and interquartile range. Differences among groups were analyzed by chi-square goodness-of-fit.

Results

All of the 65 residents who completed this scenario are included in this study. There were no missing data.

Greeting Behaviors

Residents used an average of 2.7 of the 4 greeting elements (95% CI, 2.5 to 2.8). Most residents introduced themselves (60 of 65; 92%), stated their role (58 of 65; 89%) and, to a lesser extent, used the standardized patient's name (53 of 65; 82%). One resident (1.5%) asked the standardized patient how he preferred to be addressed. One (1.5%) resident used all four elements, 46 (69%) residents used three elements, 14 (21%) residents used two elements, two (3%) residents used one element, and two (3%) residents did not use any of the elements. There were no statistically significant differences in greeting behaviors by resident gender, between Clinical Anesthesia residents in year 1 and Clinical Anesthesia residents in year 3, or between residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter.

Response to Pain and Nausea Cues

Of the 65 residents, 37 (57%) ordered pain medication before the standardized patient signed the informed

consent form, 19 (29%) ordered pain medication after the standardized patient signed the informed consent form, and 9 (14%) did not order pain medication at any time during the encounter (table 2). The 86% of residents who ordered pain medication did so at 4.2 min (95% CI, 3.2 to 5.1) into the encounters. Residents who ordered pain medication before the standardized patient signed the informed consent form ordered pain medication at 4.0 min (95% CI, 2.8 to 5.2), an average of 30 s earlier in the encounter than residents who ordered pain medication after the standardized patient signed the informed consent form, who ordered pain medications at 4.5 min (95% CI, 2.7 to 6.3). The mean length of encounter did not differ significantly among residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter.

Across the 65 informed consent encounters, there was a total of 559 pain cues ([mean ± SD] 8.6 ± 4.3; range, 2 to 23) and 167 ([mean ± SD] 2.6 ± 1.0; range, 1 to 6) nausea cues (table 2). The mean pain cue intensity was 1.8 (95% CI, 1.7 to 1.9) with a range from 1 to 5. Most of the pain cues were at intensity level 2 (46%); 16% of pain cues were an intensity level greater than 2. The mean nausea cue intensity was 2.0 (95% CI, 1.8 to 2.1) with a range from 1 to 4. Most of the nausea cues were at intensity level 2 (65%); 18% of cues were at an intensity level greater than 2. Responses to the cues by the Empathic Communication Coding System were lower for the residents who did not order pain medication at any time during the encounter (mean, 1.2 [95% CI, 0.8 to 1.6]), and similar for the residents who ordered pain medication before the standardized patient signed the informed consent form (mean, 1.9 [95% CI, 1.6 to 2.1]) and residents who ordered pain medication after the standardized patient signed the informed consent form (mean, 1.9 [95% CI, 1.6 to 2.0]; $F(2, 62) = 4.21$; $P = 0.019$; partial $\eta^2 = 0.120$). Tukey's honest significant differences *post hoc* test revealed significant differences between the residents who did not order pain medication at any time during the encounter and residents who ordered pain medication before the standardized patient signed the informed consent form and between the residents who did not order pain medication at any time during the encounter and residents who ordered pain medication after the standardized patient signed the informed consent, but not between residents who ordered pain medication before the standardized patient signed the informed consent form and residents who ordered pain medication after the standardized patient signed the informed consent form.

Procedural and Risk Content of Informed Consent Discussion

Residents discussed approximately 5 of the 11 assessed procedural topics (median, 5; mode, 6; interquartile range, 4) per encounter (fig. 1). Specifically, residents discussed anesthesia in general (65 of 65; 100%), endotracheal intubation (54 of 65; 83%), induction of anesthesia *via* intravenous access (45 of 65; 69%), and monitoring devices and plan (33 of 65; 49%) in more than 49% of the encounters (fig. 2). The item "anesthesia personnel will be present throughout surgery" was mentioned in 27 of 65 (42%) encounters. There were no statistically significant differences in procedural topics by resident gender, between Clinical Anesthesia residents

Table 2. Encounter Information of Pain Management, Cues, and Response Level by Residents in PRE-IC, POST-IC, and PMNO Groups

Prescribing of Pain Medications (N [% of Total Participant Population])	Total Encounter Duration (mins)	Time to Prescribe (mins)	Verbal Cues	Nonverbal Cues	Total Pain Cues	Verbal Nausea Cues	Total Mean Cue Intensity	Total Mean Resident Response Level by ECCS
Total (N = 65)	9.8 ± 2.1	4.2 ± 3.6	5.9 ± 1.9	4.5 ± 3.3	8.6 ± 4.3	2.6 ± 1.0	1.8 ± 0.3	1.7 ± 0.6
PRE-IC	10.3 ± 2.2	4.0 ± 3.7	5.6 ± 1.6	4.4 ± 3.5	8.4 ± 4.5	2.5 ± 1.0	1.9 ± 0.3	1.9 ± 0.7
N = 37 (56.9%)								
POST-IC	9.4 ± 1.9	4.5 ± 3.6	6.5 ± 2.3	4.1 ± 2.9	8.6 ± 3.8	2.8 ± 1.2	1.8 ± 0.2	1.8 ± 0.4
N = 19 (29.2%)								
PMNO	8.8 ± 1.9	---	5.9 ± 1.8	5.7 ± 3.3	9.6 ± 5.0	2.3 ± 0.5	1.8 ± 0.3	1.2 ± 0.5
N = 9 (13.9%)								
Significance test between PMNO, PRE-IC and POST-IC	$F(2, 62) = 2.36$; $P = 0.103$; partial $\eta^2 = 0.071$	$t(52) = 0.46$; $P = 0.647$; partial $\eta^2 = 0.004$	$\chi(16) = 19.15$; $P = 0.261$	$\chi(16) = 24.55$; $P = 0.431$	$\chi(16) = 22.12$; $P = 0.904$	$\chi(16) = 9.82$; $P = 0.456$	$F(2, 62) = 0.549$; $P = 0.580$; partial $\eta^2 = 0.017$	$F(2, 62) = 4.21$; $P = 0.019$; partial $\eta^2 = 0.120$

Mean cue intensity on a 1 (low) to 5 (high) Likert scale. Data presented as mean ± SD.

ECCS, Empathic Communication Coding System; PMNO, pain medications not ordered; POST-IC, pain medications ordered after written consent obtained; PRE-IC, pain medications ordered before written consent obtained; s, seconds.

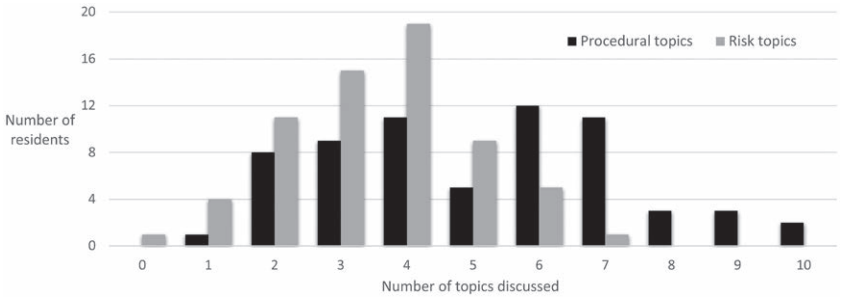

Fig. 1. Distribution of residents who discussed specific numbers of the 11 assessed procedural and 8 assessed risk topics.

in year 1 and Clinical Anesthesia residents in year 3, or between residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter.

Residents discussed approximately four of the eight assessed risk topics (median, 4; mode, 4; interquartile range, 1.5) per encounter (fig. 1). Postoperative nausea and vomiting (55 of 65; 86%), transfusion therapy (47 of 65; 72%), sore throat (43 of 65; 66%), and oral injury (33 of 65; 51%) were discussed in more than half of the encounters (fig. 2). There were no statistically significant differences in risk

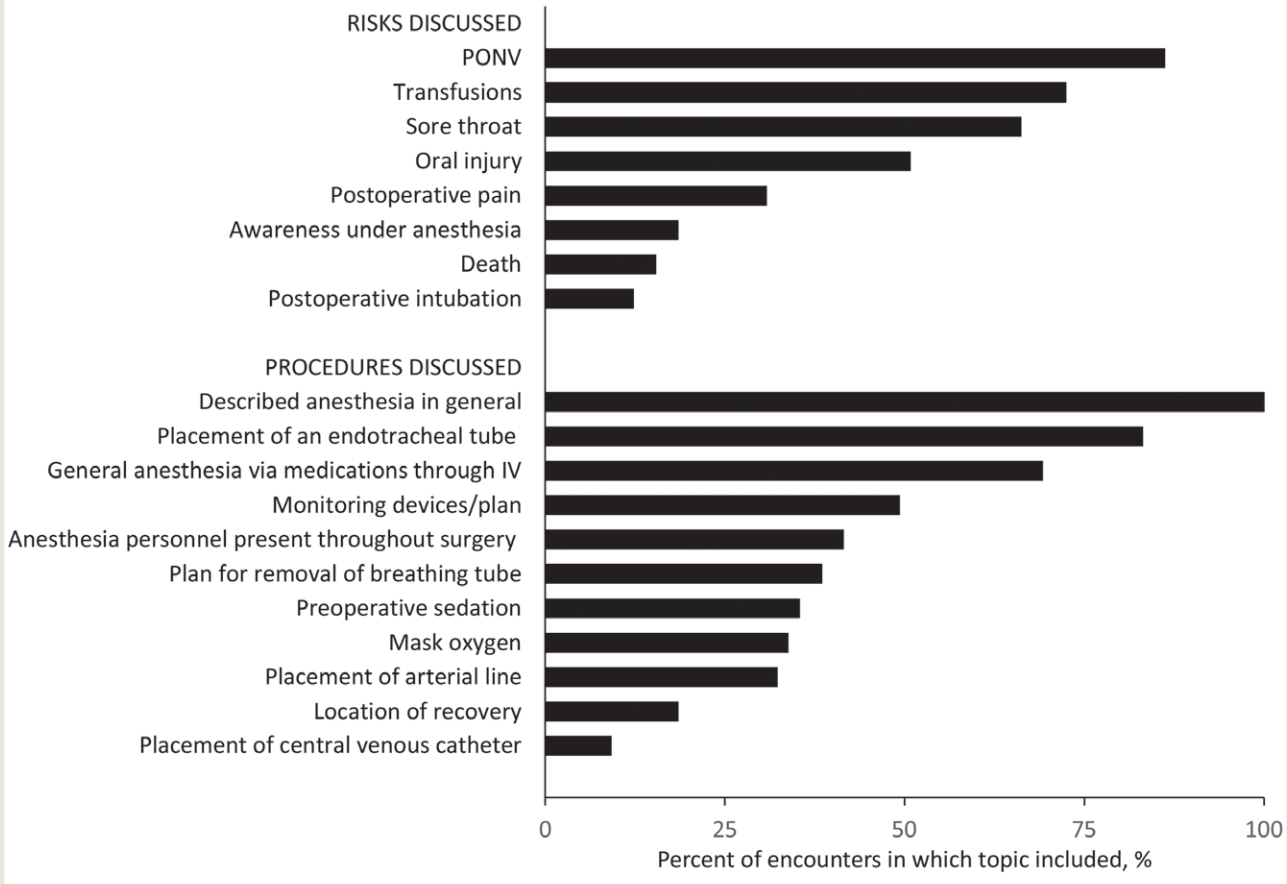

Fig. 2. Procedural and risks topics discussed by residents shown by frequency of encounter. PONV, postoperative nausea and vomiting.

topics by resident gender, between Clinical Anesthesia residents in year 1 and Clinical Anesthesia residents in year 3, or between residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter.

Overall Quality of Procedural and Risk Discussions

The overall quality of the procedural discussion and risk discussion had mean ratings of 3 (95% CI, 2.6 to 3.3) and 3 (95% CI, 3.0 to 3.5), respectively, on a scale from poor (1) to excellent (6). Residents asked the standardized patient versions of whether he wanted more information, felt he needed an explanation, or had any questions an average of 1.4 (95% CI, 1.2 to 1.6) times in each encounter. Residents asked an average of 1.2 (95% CI, 1.0 to 1.4) open-ended questions and 0.2 (95% CI, 0.1 to 0.3) closed-ended questions in each encounter. There were no statistically significant differences between residents who ordered pain medication before the standardized patient signed the informed consent form, residents who ordered pain medication after the standardized patient signed the informed consent form, and residents who did not order pain medication at any time during the encounter for quality of risk discussion, procedure discussion, querying about further questions, and frequency of open- and closed-ended questions.

Discussion

Our study found that in a simulated urgent preoperative evaluation, anesthesia residents have variable and, at times, flawed recognition of patient cues, responsiveness to cues, and pain management while obtaining informed consent.

Verbal Response to Patients in Pain

Compassionate behaviors require recognizing and responding to direct and indirect verbal and nonverbal cues that may indicate concerns, discomfort and anxiety. Residents responded clumsily to the patient's primary concern of pain, responding on average with "implicit recognition," which does not reach the level of acknowledging the pain (table 1). Residents may not have responded at all to the standardized patient's pain for at least three broad reasons: (1) they did not see or hear the pain cue; (2) they saw or heard the cue but did not perceive it is as indicative of pain; and (3) they recognized the cue as indicative of pain but did not respond.

Physicians often do not recognize patient cues, missing opportunities to respond compassionately.[24,25] Residents who recognized cues may have responded awkwardly or not at all because they may have been unsettled by the cue or the idea of responding to the cue. They may have been unsure whether they could respond adroitly, whether it was within their purview to respond, or whether it was even necessary to respond because the standardized patient's pain was expected. Residents may have been proceeding mechanically through their tasks or may have intentionally bypassed responding in favor of completing necessary tasks, perhaps because of production pressure or because of desire not to deviate from a mental checklist.

Pharmacologic Response to Patient in Pain

Of the 86% of residents who ordered pain medication, the residents who ordered pain medication before the standardized patient signed the informed consent form ordered pain medication at 4 min into the encounter, only 30 s earlier the residents who ordered pain medication after the standardized patient signed the informed consent form. In our opinion, waiting even 4 min to prescribe pain medication was unnecessarily long. Residents may have delayed ordered pain medication because they prioritized the tasks necessary to prepare the standardized patient for surgery, which included obtaining informed consent. But clinical experience and observation of the study participants suggest a likely factor in the timing was the perception that there are ethical or legal requirements to obtain informed consent before administering potentially cognitive-altering medication.

Dogmatically delaying pain medication for acute preoperative pain to maintain decision-making capacity is misguided. Pain interrupts the ability to pay attention and interact, degrading the patient's ability to provide informed consent.[26,27] Administration of pain medication such as opioids to reduce severe pain in the appropriate patient (*i.e.,* awake, alert, responsive, limited associated disease) often improves the ability of the patient to attend to the informed consent discussion.[28,29] Our standardized patient met those criteria easily. If the patient has already received medication, clinicians should assess whether the patient has the capacity to participate in the decision-making process for the specific decision.

Variability and Compassion in Obtaining Informed Consent

Patients prize clinicians' interpersonal availability, relatedness, sincerity, kindness, and the ability to listen and to communicate in an understandable manner.[4–8] Clinicians show the ability to listen while obtaining informed consent by responding to the patient's needs through customizing content. Recommendations for what risks should be discussed vary.[13,14,22,30] Providing an exhaustive list overwhelms patients and does not address the specific patient's experience. Risks that are more likely to occur, affect the patient's experience, and may be exacerbated or minimized by patient actions, such as postoperative nausea and vomiting or sore throat, are nearly always appropriate to discuss.

But given the inaccurate information of quantitative or qualitative knowledge of other, more general, risks,[31] the inability to express risk in a manner readily understood by the patient,[32] and the anecdotal rarity that risk knowledge actually is used by patients to decide whether to proceed when there is a single anesthetic option (as compared to a choice, such as between regional and general anesthesia), the appropriate risk content of an informed consent discussion, absent patient preferences, is hard to generalize from an ethical or practical view.

It is nearly always appropriate to directly respond to a patient's question. In our simulated scenario methodology, the consistency of the standardized patient's focus should have both prompted the residents to address the standardized patient's pain and concerns about postoperative nausea and vomiting. Residents discussed postoperative nausea and vomiting in 85% of the encounters, which is more frequent than found in other limited data,[23] likely indicating an appropriate response to the standardized patient's concerns. It is unsettling that the standardized patient's specific concerns about postoperative nausea and vomiting were not addressed in 15% of the encounters.

The content variability unrelated to the standardized patient's concerns suggests that residents conform to their own scripted discussion to which they add as indicated. Addressing this clinically recognized and tacitly accepted variability in the informed consent "stump speech" may be an opportunity to improve care.

Meeting patients' needs during the preoperative discussion and informed consent process is as important as the specific content.[21] Asking patients about their questions or concerns facilitates customization. In our study, residents on average asked the standardized patient if he wanted further information or an explanation one to two times during these

Table 3. Potential Barriers to Compassionate Behavior in the Daily Practice of Anesthesia

Individual	
Skills	• Inexperience[25] • Unaware of characteristics of compassionate behavior • Overconfidence in their ability to identify empathetic opportunities[40] • Unaware of inability to identify and respond to empathic opportunities[40] • Baseline discomfort with interaction on a compassionate level
Role expectations	• Limited awareness of the obligation to prioritize compassionate behavior • Internal production pressure • "Load the trucks"—assembly line mentality
Well-being	• Burnout[39] • External distractions (*e.g.,* life events)[39] • Fatigue from long hours, daily pressure, tasks and engagement with multiple new patients[37]
Education	
Structure of anesthesia education	• Trainees do not see colleagues work so are unable to calibrate themselves • Trainees seek to please supervising clinicians, who may not prioritize compassionate behavior • Absent role modeling • Negative role modeling[10,37] • Insufficient formal education • Overly prescriptive "one-size fits all" training[5] • Insufficient individual mentoring[38]
Structure of anesthesia trainee evaluation	• Preoperative evaluation not observed[42] • Supervising clinicians not sufficiently trained to recognize and assess compassionate behavior[10,42] • Supervising clinicians not sufficiently trained to provide feedback • Reluctance of supervising clinicians to counsel residents exhibiting suboptimal but not egregious compassionate behavior because of concerns of appropriateness and value of counseling, perceived lack of professional reward, sympathy for the trainee and the desire to avoid unpleasant interactions[38,41,42]
Clinical	
Patient characteristics	• Complex medical situations that exacerbate time pressures • Complex psychosocial situations[39] (*e.g.,* previous bad experiences, anxiety) that impair communication
Tasks	• Prepare the patient for surgery (*e.g.,* take history, perform physical exam, obtain informed consent, establish intravenous access) • Extensive work load (*e.g.,* covering too many cases)
Systemic	
Preoperative evaluation	• Lack of previous relationship with patient makes it more difficult to interact on a compassionate level
Physical layout	• Inadequate physical and cultural workplace support for compassionate behaviors (*e.g.,* no chair by bedside, loud environment)
Culture	• Workplace culture not supportive of compassionate behavior (*e.g.,* workload) • External production pressure including evaluation systems that overly prioritize efficiency

encounters. This is too infrequent when presenting complex and lengthy information, particularly if a patient is anxious[33] or in pain.[27] Clinicians should check-in for questions after each "chunk" of information to foster the patient–physician relationship, promote question asking, improve communication, and reduce preoperative anxiety.[12,34,35]

Study limitations temper drawing conclusions. The scenario was designed to study many competencies and not specifically designed to assess only compassionate behavior. The effects of using standardized patients rather than actual patients to assess compassionate behavior and obtaining informed consent during urgent situations are not well understood. The inability to explore the residents' rationale for their behaviors limits the ability to answer some of questions posed above and is an important area for future investigation. It is hard to know the effect of simulation on the behavior and content of the informed consent discussion. Nonetheless, these limitations do not obviate the central results that there are opportunities for increasing genuine and responsive compassionate behavior.

Setting an Agenda. Demonstrations of compassionate behavior vary because of individual characteristics, trainee education, clinical requirements and systems. A clinician's commitment to provide exemplary compassionate behavior may fatigue when faced with low-level, background barriers.[36] Table 3 describes potential training and practice barriers to compassionate behavior. To effectively improve compassionate behavior, we need to explore perioperative patients' and clinicians' expectations, perspectives and priorities and delineate opportunities and barriers within perioperative practice systems, department and hospital cultures, and anesthesia training.[37–42]

Although training can sensitize and increase compassionate behavior, identification of effective education practices more specific to anesthesia is necessary.[43–47] Having the opportunity to practice and receive feedback in a psychologically safe learning environment in recognizing when patients are in pain, even through a short training session, may increase compassionate behavioral responses to patient pain cues. Specific nonverbal compassionate behaviors can also be taught, including making and keeping eye contact, being on the same physical level as the patient, having an open posture, and presenting warm or interested facial expressions.[6]

In summary, anesthesia residents have variable and, at times, flawed recognition of patient cues, responsiveness to patient cues, pain management, and patient interactions. Compassionate behavior is important to our patients and their families. Training programs should emphasize it as a shared responsibility among clinicians and patients, a key measure of professionalism, and a source of satisfaction for clinicians.[48]

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Competing Interests

The authors declare no competing interests within 36 months of this work.

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