Patterns of Communication during the Preanesthesia Visit

Raymond A. Zollo, M.D.,* Stephen J. Lurie, M.D., Ph.D.,† Ronald Epstein, M.D.,‡ Denham S. Ward, M.D., Ph.D.§

Background: Effective communication in the preanesthesia clinic is important in patient-centered care. Although patient-physician communication has been studied by recordings in other contexts, there have been no observational studies of the communication patterns of anesthesiologists and patients during the preanesthesia interview.

Methods: Two experienced standardized patients were trained to portray the same clinical situation by using different coping styles (maximizing information or "monitoring" *vs.* minimizing information or "blunting"). Interviews of standardized patients by anesthesiologists took place in the preanesthesia clinic and recorded with the knowledge of the subjects. Audio recordings were analyzed, and the visit was separated into nine components. Discussion of the risks/informed consent process was examined, looking for discussion of common morbidities. The standardized patients completed a survey on the patient-centeredness of the interview.

Results: Twenty-seven subjects participated in this study. Interviews with the monitor required more time: 17.4 min (confidence interval [CI] 15.2–19.6, n = 24) *versus* 14.5 min (CI 13.1–16.0, n = 25), $P < 0.05$. Most interview time was spent in obtaining the history; 2.4 min (CI 1.8–3.1) was spent discussing risks with the monitor, and only 1.6 min (CI 1.2–2.0) was spent with the blunter ($P < 0.05$). Neither the monitor nor the blunter scored the interview highly for involving the patient in determining the goals of the anesthetic and recovery.

Conclusions: Direct recording of interactions with standardized patients is a feasible method of studying the communication skills of anesthesiologists. For this study, the anesthesia providers were able to modify their approach depending on patient type, but the monitor received more information.

IN the 1960s, medical ethicist and noted anesthesiologist Henry Beecher and colleagues showed that personal preoperative communication with patients can result in both physiologic and psychological improvements in patient care.[1] In particular, good preanesthetic communication with patients the evening before surgery was shown to result in less postoperative opioid use and earlier discharge.[2] More recently, the Institute of Medicine's landmark report titled *Bridging the Quality Chasm* emphasized the need for care that respects and responds to patient's individual needs and preferences (patient-centered care) to prevent medical errors and increase patient satisfaction.[3] Capuzzo *et al.* stated that "emotional and relational factors should be considered as the most significant elements associated with patient satisfaction with anesthesia."[4] The preoperative visit by the anesthesiologist now only rarely takes place in the hospital the evening before surgery, and it is likely that the physician performing the preoperative evaluation will not be part of the anesthesia team providing anesthesia on the day of surgery. This may make it doubtful that the results of these early studies are applicable to the practice setting of today. Because of these and other facets of today's anesthesia care, effective patient-centered communication in the preoperative clinic is particularly challanging.[5–7]

In a review of the literature discussing patient's attitudes toward and preparation for anesthesia, Roizen and Klaffta proposed nine components of an appropriate preoperative evaluation: initiating the session, getting the patient's perspective, gathering information in the form of a history and physical, describing the anesthetic plan, describing anesthetic risks and obtaining consent, discussing pain control, and closing the interview.[8] These components are based on a model of patient-centered communication.[9] Although patient-physician communication has been studied by direct audio or audio/video recordings in numerous contexts, including primary care and surgery,[10,11] there have been no direct observational studies of the communication patterns of anesthesiologists and patients during the preoperative interview. Differing levels of case-complexity and patient characteristics such as personality can make the study of patient-physician communication difficult. Standardized patients have been used to study physician-patient communication in a controlled manner[12–14]; we therefore designed a study that uses standardized patients of two specific personality types to better understand the communications taking place during the preoperative interview.

This study was designed with two goals in mind: (1) to determine the value of standardized patients in studying the structure and format of the preoperative interview, and (2) to observe how anesthesiologists modify interviewing style and content to match the needs of two patient types commonly encountered in clinical practice.

Materials and Methods

This study was reviewed and approved by the University of Rochester research subjects review board (Rochester, NY), and informed written consent was obtained from all subjects.

This study was designed by using two standardized patients. Both patients portrayed a middle aged man

---

* Associate Professor, Department of Anesthesiology, † Assistant Professor, ‡ Professor, Department of Family Medicine, § Professor and Chair, Departments of Anesthesiology and Biomedical Engineering, University of Rochester School of Medicine and Dentistry, Rochester, New York.

Address correspondence to Dr. Zollo: Department of Anesthesiology, 601 Elmwood Avenue, Box 604, Rochester, New York 14642. raymond_zollo@urmc.rochester.edu. Information on purchasing reprints may be found at www.anesthesiology.org or on the masthead page at the beginning of this issue. ANESTHESIOLOGY's articles are made freely accessible to all readers, for personal use only, 6 months from the cover date of the issue.

with a smoking history and a lung mass found on a chest radiograph. After a nondiagnostic bronchoscopy, he is scheduled for video-assisted thoracoscopy and possible thoracotomy. The script was developed after listening to recordings made of actual preanesthesia interviews obtained in a pilot study; details of the script are given in appendix 1.

The standardized patients were trained to depict one of two different coping mechanisms (called *monitoring* and *blunting*) in response to the stress of significant medical illness and surgery.[15] "Monitors" seek to decrease their level of anxiety by attempting to exert control over everything possible, and "blunters" seek to decrease their anxiety by ignoring medical detail while seeking reassurance that all will be well. It must be stressed that both "monitors" and "blunters" seek information and reassurance, the "monitor" by gaining as much information and control as possible, the "blunter" by limiting too much information and being reassured that all will be well. The skillful interviewer senses these coping styles and modifies his or her communication patterns accordingly. Two experienced standardized patients were selected and trained for their roles by two experienced standardized patient trainers in consultation with the authors. A practice session with an experienced anesthesiologist was video recorded and used to improve the role portrayal. The standardized patients were given detailed feedback about content, affect, pace and response to information by the anesthesiologist, to make the roles more credible and concordant with the study goals.

Anesthesia residents and junior attending anesthesiologists were recruited by an email advertisement distributed to the Anesthesiology Department. Participants were informed that we were examining the preoperative interview process and that their preoperative interview with a standardized patient would be audio recorded. One resident refused to participate for an undisclosed reason. Participation was primarily determined by scheduling concerns associated with the demands of clinical practice. Participating providers received a gift card worth $100. Demographic and attitudinal data were collected from the participants after completion of the interviews, including years in anesthesia and whether or not they recalled having a prior course in patient communication (appendix 2).

The interviews of the standardized patients took place in the preoperative clinic. Each physician interviewed both monitor and blunter standardized patients with the interview sequence randomized and separated by at least 2 weeks. The recordings were made with an Olympus WS-100 Digital Voice Recorder (Olympus Imaging America, Inc., Center Valley, PA) and then transferred to a computer for further analysis. The analysis of the audio recordings was performed by using ATLAS ti software (Atlas ti Scientific Software Development, GmbH, Berlin,

Table 1. Segments of the Preoperative Interview

Opening the interview (open)
Gaining the patients perspective (perspective)
Taking the patient's history (history)
Performing the physical examination (physical)
Discussing the plan for the surgery/anesthetic (plan)
Describing the general anesthetic (general)
Discussing the risks and obtaining informed consent (risks)
Discussing options for postoperative pain management (pain)
Closing the interview (close)

Segments of the preoperative interview, based on Klafta and Roizen[8] and Makoul.[9] The transcript of each preanesthesia interview was divided up into segments that best belonged to one of these types.

Germany). After the interview, the standardized patient completed a 10-item questionnaire (appendix 3) based on a validated communications assessment tool used to study patient-physician communication in primary care.[16]

Audio recordings were coded into nine components of a preoperative interview: opening the interview, gaining the patient's perspective, history, physical examination, making a plan, describing the general anesthetic, discussing the risks, planning for postoperative pain management, and closing the interview (table 1). In addition, interactions with the standardized patient exemplifying classic personality traits/behaviors associated with the personality role (monitor/blunter) were marked. Verbatim transcripts for particular areas of interest were obtained. Total interview time as well as time spent in each of the nine components (without regard to sequence) was obtained from the ATLAS ti software.

We looked for and noted whether discussion of several common morbidities occurred: sore/dry throat/mouth, hoarseness, mouth/dental injury, awareness, injury to nerves/blood vessels, eye injury, airway difficulties, aspiration pneumonia, nausea/vomiting, allergic reactions, cardiac/hemodynamic instability.[17] The number of these areas addressed by the interviewer was recorded for each interview.

Statistical Analysis

Summary statistics for the time spent in each part of the preoperative interview were calculated. Repeated measures ANOVA was used to determine how interviewers differed in their approach to the two different standardized patients (blunter *vs.* monitor). If a significant difference was found, then ANOVA with standardized patient type and the sex, country of training, and prior communication course of the anesthesia provider as independent factors was performed. The total time was also regressed against the number of years of anesthesia experience. Internal consistency of scores on the standardized patient questionnaire was assessed with Cronbach alpha. The questionnaire data were analyzed first by repeated measures ANOVA for standardized patient effects and then also by ordered logistic regression with

the sex, country of training, and prior communication course of the anesthesia provider as independent factors. All statistical data analysis was performed with the STATA software package (College Station, TX). Data are given as mean $\pm$ SE or 95% confidence interval (CI) unless noted. Significance level is at the $P < 0.05$ level.

Results

Nineteen male and eight female anesthesiologists or residents participated in the study. Completed questionnaire and audio recording sets for both standardized patients were available for 20 participants. For five additional participants, complete data were available for the blunter interview, but were incomplete for the monitor interview (three with no data and two with partial data); in two additional participants, complete monitor data were available, but the blunter interview data were incomplete. Several residents graduated from the program and moved away from the Rochester area during the study and were unable to conduct the second interview. All available data were used in the analysis.

Twenty-three participants were trained in the United States, and four had received their medical education in another country. Fourteen (52%) stated that they had previously had a specific course in patient-physician communication. The years in anesthesia (including residency/fellowship training) were 2.4 $\pm$ 1.0 (mean $\pm$ SD). The average response of the participants to the questionnaire ranged from 4.0 for questions 4, 5, and 6 to 4.3 for questions 2 and 3 (appendix 2), indicating that all the participants felt it was important to conduct a patient-centered preoperative interview. These results did not differ by sex, country of medical training, or prior communication course.

Interviews with the monitor lasted 17.4 min (95% CI 15.2–19.6, n = 24) versus 14.5 min (95% CI 13.1–16.0, n = 25) for the blunter ($P = 0.02$). Most interview time was spent in obtaining the history: 6.8 min (95% CI 5.9–7.1) for the blunter, 6.1 min (95% CI 5.2–7.0) for the monitor ($P = 0.03$). Figure 1 shows the times for all components of the interview.

A greater amount of time was spent in discussing risks with the monitor than with the blunter, 2.4 min (95% CI 1.8–3.1) versus 1.6 min (95% CI 1.2–2.0), $P = 0.03$. In each case, discussion of risk comprised less than 15% of the interview. The time spent in discussion of postoperative pain control options was 1.2 $\pm$ 0.9 min (mean $\pm$ SD). Maximum time spent was 3.9 min; in 11 interviews (10 blunter, 1 monitor, 22% of interviews), no discussion of postoperative pain control options occurred at all.

Examination of the discussion of the risks of anesthesia revealed no statistical differences in the types of risks discussed between the monitor and the blunter. Of the 11 risks that were tabulated, on average 5.6 $\pm$ 2.2 risks
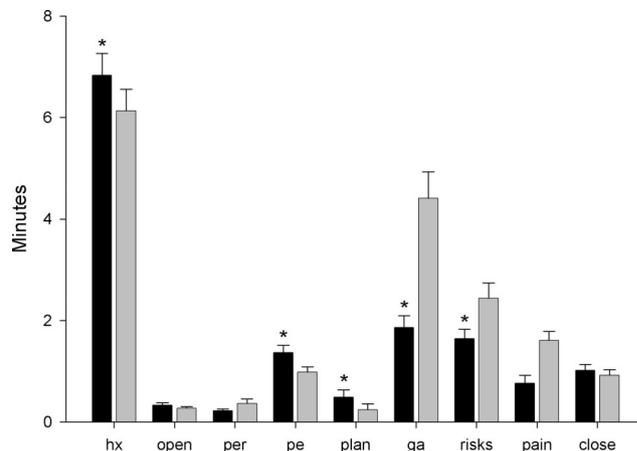

Fig. 1. Amount of time spent in each part of the preoperative interview. * $P < 0.05$ difference between the time spent in each task between the blunter and monitor standardized patients. Abbreviations shown on abscissa are from table 1. Blunter depicted with the **black bars**, and monitor depicted in *gray*. *Error bars* represent SEM. hx = history; open = opening the interview; pers = gaining the patient's perspective; pe = physical examination; plan = making a plan; ga = describing the general anesthetic; risks = discussing the risks; pain = planning for postoperative pain management; close = closing the interview.

were discussed with the blunter and 6.3 $\pm$ 2.6 (mean $\pm$ SD) with the monitor. However, many risks were not discussed with either patient type, *e.g.*, airway difficulties were discussed with only 56% of the blunter interviews and 78% of the monitor interviews.

Examples of transcribed text for the monitor and blunter roles are shown in table 2. Examples of patient-centered and nonpatient-centered communications occurring with the monitor and blunter are shown in table 3.

The total (sum) score (a total score of 10 would be the best score, and 40 the worst) on the standardized patients questionnaire (appendix 3) was 25.7 (CI 24.6–27.2) for the blunter and 21.8 (CI 19.7–23.9) for the monitor ($P < 0.01$) The Cronbach's alpha for the blunter was 0.76 and 0.77 for the monitor. The total score was significantly affected by standardized patient type ($P < 0.01$) and whether or not the anesthesia provider had taken a communication course ($P = 0.03$). The effect on the prior communication course was more pronounced for the monitor (fig. 2), but it did not reach statistical significance ($P = 0.06$). Sex and country of medical school training did not have a significant effect. Years of anesthesia training showed a significant negative correlation with the total score for the monitor standardized patient but not for the blunter (fig. 3).

Figure 4 gives the scores for each question on the standardized patient questionnaire (appendix 3). Note that the monitor standardized patient gave the same response to the "goals" question (question 6); this question was dropped from the statistical analysis because of lack of variation in the ratings. Except for satisfaction with the discussion of the anesthetic options (question

Table 2. Examples of Conversations from the Interview Transcripts

Monitor
  D: A very uncommon reaction would be, you know patients can have an anaphylactic reaction to the anesthetic.
  P: Now what is that?
  D: Your body goes into a state, simply put, a state of shock and you can, it's a life threatening.
  P: Can you fix that?
  D: It is life-threatening, we can give you medication to try and prevent, to try and help the reaction once it happens, but that's one of those situations that I was saying maybe one in 10,000.
  D: You could possibly get an eye injury, and it's a, it's painful. It does usually resolve, but we're going to tape your eyes, we're going to be careful and put lubricant on them.
  P: How do you hurt my eyes?
  D: Because the scope that were putting in, you can actually rub, either with the scope or the mask.
Blunter
  D: Any questions about any of that?
  P: No, I just you know, I just want to know that it I'm going to come through it all right, I'll wake up, I don't want to wake up too soon.
  D: Right, right.
  P: But I want to wake up.
  D: Right, and that's our goal too.
  P: I just want to go to sleep and wake up, that's it.
  D: Okay, and you're to do that, you're to do that too, this is just kind of an added thing that you don't have to make a decision today about it, but I just want you to know that it's an option and that somebody will probably offer it to you [epidural].
  D: Did your doctor have any explanation why you might have got that [blood clot].
  P: No, nothing I really wanted to hear. You know, no I.
  D: Had you been on a long airline trip? Or in the car for a long period of time?
  P: No, no.
  D: Do they think that you had some kind of problem with your blood at all?
  P: No.
  D: That would make you have a clot?

D = anesthesiologist; P = standardized patient.

Table 3. Examples of Interview Exchanges that Showed Different Degrees of Patient-centeredness

Monitor, patient-centered
  P: I've read about all the bad stuff, I mean on the Internet, the people that don't wake up, the reactions, people who are never in their right mind when they're all done, and things like that so.
  D: And these are things that you are obviously concerned about or?
  P: Yes, very concerned.
  D: Um, so generally speaking, those would be, well, what we call, well more of a severe side effect. For the most part, they are pretty rare. There is a possibility, would you like me to go into all of the risks? No matter how remote? Some of the risks are extremely rare.
Monitor, not patient-centered
  D: Anybody in your family have any problems with surgery or anesthesia?
  P: No, not really. I mean I have read on the Internet about all of the problems, but there doesn't seem to be anything in my family.
  D: Okay, I see the you have a reaction to penicillin.
Blunter, patient-centered
  D: Would you like me to go into more of the theoretical risks?
  P: Not really (laughs nervously).
  D: Okay, that's what I see.
  P: You know, in a way the more I know the more I. I.
  D: I understand. Most of these risks are very rare, so it's the kind of thing that I kind of feel out the situation and decide if you want to hear it or not.
Blunter, not patient-centered
  D: Um, he would kind of be in a sitting position, and umm feel a little bee sting, we give you some numbing medicine.
  P: Oh whatever, I'd rather not know too much.
  D: Oh, okay. And they'll talk about it, more about that.
  P: Oh yeah, okay.
  D: For the actual procedure, you go back to the operating room, we put a bunch of monitors on you, EKG leads, pulse oximeter on your finger, breathe some oxygen, through a mask, and then drift you off to sleep through your IV.

D = anesthesiologist; EKG = electrocardiogram; P = standardized patient.

imental paradigm. We find that a difference in coping styles portrayed by the standardized patients results in different responses from interviewers. A larger, more detailed study will need to confirm our preliminary observations that a prior communications course improves the quality of the interview and that, for a monitoring coping style, anesthesiologists' prior experience (*e.g.*, years in practice) may not result in a more patient-centered interview. Our preliminary qualitative analysis provides a rich paradigm to test further controlled interventions to improve patient-anesthesiologist interactions.

The presence of many potentially confounding variables in any communication study, some of which are difficult or impossible to remove, can make any conclusions reached provisional at best, but our study design attempted to limit these problems. We used preliminary observations gleaned from actual patient interviews collected during their preoperative clinic visit to help design the standardized patient training protocol. This was done to determine the tasks where the least and the most

3) and the anesthetic goals (question 6), the monitor was generally more satisfied with the preanesthesia discussion. The logistic regression analysis showed the same questions as having a significant difference between the blunter and monitor standardized patients. Interestingly, question 4, although not showing a significant standardized patient effect, did show a significant effect from having a previous communication lecture as did question 5. There were no other significant effects for the other independent variables.

Discussion

This study was designed to provide an empirical description of the contents of the anesthesiologist provider preoperative patient interview and to investigate the use of standardized patients in providing a controlled exper-
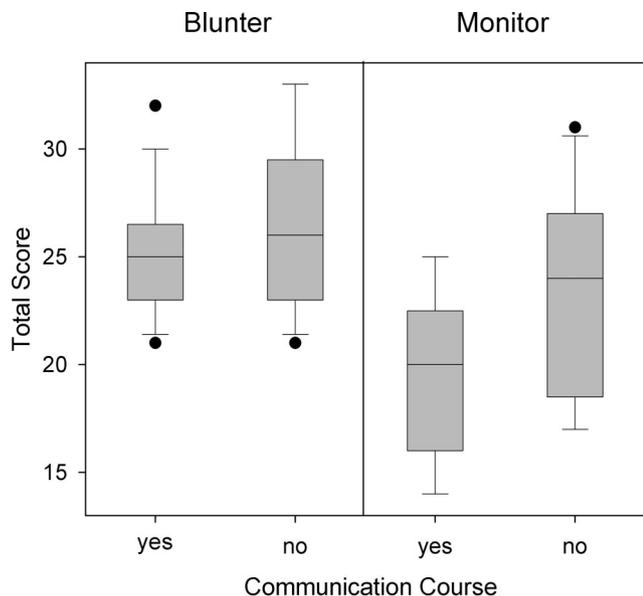
Fig. 2. Comparison of the total score on the postinterview questionnaire shown in appendix 3 (median and quartiles). Participants who recalled having a doctor-patient communication course had a greater effect for the monitor ($P = 0.06$) than for the blunter ($P = 0.23$). For combined blunter and monitor standardized patients, effect of the communication course was significant, $P = 0.03$.

amount of time was spent, and the overall pattern and pace of the preoperative interview. Further, we wanted to determine if major areas were omitted or were not covered completely during the interview. We found that the average interview time for actual patients was approximately 20 min, and that generally, most of the important tasks were completed. However, it was striking that for some patients, there was no discussion of postoperative pain control, and that the discussion was minimal for others. This finding is important because numerous studies have shown that surgical patients are very concerned with postoperative pain and expect that this issue will be addressed.[18] It can be argued that for actual patients having a variety of surgical procedures the level of postoperative

pain may show significant variability and may not require the same degree of discussion in each case, but some discussion should always occur. This variability was removed in our standardized patient study design, which used a clinical scenario (possible thoracotomy) for which significant postoperative pain is likely, and there are a variety of treatment options.

Another patient factor that is difficult to control in a study using actual patients is patient coping style. It is likely that the two archetypal styles (blunter and monitor) that were used in this study represent opposite poles of a spectrum and that most actual patients fall somewhere between. We designed the standardized patient study by using these two extremes. Both of these coping styles were noted by anesthesiology trainees in obtaining informed consents.[19]

In addition to the potential for postoperative pain and patient coping mechanisms, many other illness as well as patient and contextual factors can affect patient-anesthesiologist communication—such as complexity and severity of the illness, patient cognitive ability, and whether the patient comes alone or accompanied. The advantage of the standardized patient methodology is that these variables can be controlled, allowing a focus on provider rather than patient factors.

Mean interview times as well as times spent in each interview component for the standardized patients closely resembled those for actual patients in the clinic, observed during our preliminary pilot data collection in preparation for this study (Analysis of actual patient recordings, Raymond A. Zollo, M.D. Rochester, NY, 2005 unpublished observation), suggesting that our standardized patient portrayal evinced similar anesthesiologist behavior as actual patients. Most of the interview time was spent in obtaining the patient's history. This is consistent with data obtained in other specialties, and very consistent with the expected pattern in a preoperative evaluation interview, where most effort is spent

Fig. 3. Relationship between the experience level (including residency) of the anesthesia provider/participant and the total satisfaction score (appendix 3) of the standardized patients. The slope was significant ($P = 0.02$) for the monitor, but the correlation was relatively weak with $r^2 = 0.23$ for monitor (B) and 0.04 for blunter (A).
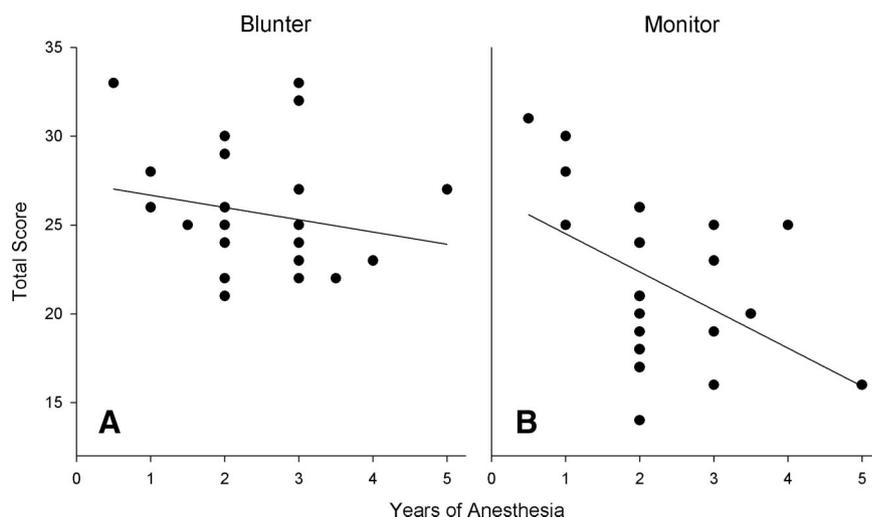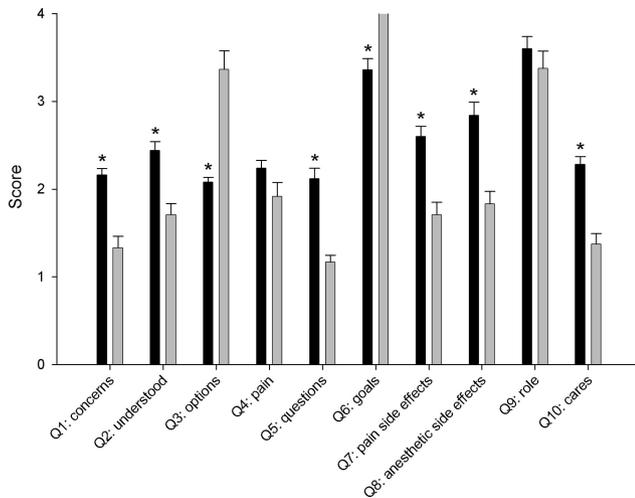
Fig. 4. Response to the postinterview questions for the Blunter and Monitor standardized patients. The question numbers refer to table 2. * *P* < 0.05 for a comparison between monitor *versus* blunter. Blunter depicted with the *black bars,* and the monitor in the *gray. Error bars* represent SEM.

gathering information and only a directed physical exam is typically performed.

Of particular interest are the differences apparent between the monitor and blunter interviews. The monitor received a significantly greater amount of provider time in the description of the anesthetic, the description of the risks of anesthesia, and in the discussion of postoperative pain control. Again, most patients tend to be most anxious about these topics, and they may expect to discuss them at some time during the preoperative process. Further, qualitative analysis of these recordings indicated that often the monitor asked a specific question resulting in discussion of these topics, or forced the provider to return to these topics when the discussion was insufficient. This did not typically occur in the blunter interviews, where the blunter is reluctant to ask questions. This finding supports recommendations that patients be encouraged to ask questions of their health care providers to get complete information and to prevent medical errors.‖

While there is little consensus about the exact composition of a valid informed consent, there is universal agreement that the informed consent represents a crucial part of any preprocedure evaluation and discussion.[17] The apparent differences in provider effort obtained by the monitor and the blunter prompted us to examine the informed consent process and the discussion of anesthetic risk in a qualitative fashion. Indeed, the monitor tended to fare better in this area as well. Although the monitor was scripted to ask questions during the informed consent process, differences in the risks discussed were not significantly different. This may indicate that the anesthesiologists discuss a set of risks independent

of the patient's coping style. However, it was striking how often important risks were not discussed.

Next, standardized patient evaluations of the interview process were examined against provider demographic data to look for provider characteristics that may have played an important role in the perception of interview quality by the (standardized) patient. Two provider characteristics seem to play an important role in this perception. First, the provider self-report that they had received instruction in communication at some point during their training significantly improved the perception of the provider by the standardized patient. It is important to note that we did not obtain any detail regarding the kind of communication instruction that may have occurred. However, the fact that this is reported by providers themselves would seem to indicate that it must have some significance in their training and clinical practice. Perhaps this instruction in communication improved their ability to recognize patient coping mechanisms and allowed them to alter their communication styles accordingly.

A second provider characteristic that played a significant role was the level of anesthesia training. Interestingly, the greater the level of anesthesia training, the less satisfied the monitor was with the interaction. This effect was not seen with the blunter. Perhaps this illustrates the other side of the spectrum; the monitor has to work harder to steer the more experienced clinical provider, causing a decrease in the monitor's satisfaction with the clinical interaction. The recent emphasis on effective doctor-patient communication in medical school curricula may make the more recent graduates more adept at recognizing patient coping styles and at altering their communication approach accordingly.

We acknowledge many limitations with this study. First, the anesthesiologists knew that their interactions were being audio recorded. Such knowledge may lead them to exhibit "good" behaviors that they would not do otherwise. However, if they are able to exhibit such behaviors under any circumstances, they are at least capable of such behaviors, which they may have learned at some point in their education. Furthermore, many subjects did not exhibit optimal patient-centered behaviors despite being observed, and exhibited differences in their interactions with patients with different coping mechanisms. It is likely that such differences would be apparent in their clinical practice. For future studies, it would be possible to use unannounced standardized patients.[20]

Another limitation is having the standardized patient grade the interaction with the provider while in role—in neutral, where the standardized patient remains in role but does not stay in the emotion at the end of the interaction. That is, the evaluation is given as the patient being portrayed, but "looks back on what happened from a slight distance."[12,13] This is a common technique for evaluation by standardized patients. Although there is a certain objectivity that comes with the use of experi-

---

‖ Available at: http://www.ahrq.gov/questionsaretheanswer/. Accessed June 11, 2009.

enced standardized patients, is it really possible for the standardized patient to completely separate their role from their personality? In an attempt to limit the effect of this potential problem, standardized patients were selected who have a tendency to exhibit such coping mechanisms in real life (type-casting).

Finally, our study is limited by the relatively small number of participants, all with relatively little experience in anesthesiology (residents and junior attending physicians). Firmer conclusions, particularly about the role of anesthesiology experience and a prior communication course, will require a larger study.

The outcome of this study raises several questions for future investigations. Does increased patient satisfaction with an anesthesiologist–patient interaction in the perioperative period lead to better outcomes? Can instruction in anesthesiologist-patient communication improve patient satisfaction in the perioperative period prospectively? Can instruction in anesthesiologist-patient communication offset the possible "negative" effects of increased clinical experience level? Is there a training window in which instruction in communication is most effective? Are there differences in the techniques used by junior and senior anesthesiologists to obtain needed information, and which techniques are more effective? Should anesthesia programs devote more time during residency to teaching effective communication with patients? Studies specifically designed to address these questions could yield results that would improve patient-centered anesthesia care.

References

1. Egbert LD, Battit GE, Turndorf H, Beecher HK: The value of the preoperative visit by an anesthetist. JAMA 1963; 185:553–5

2. Egbert LD, Battit GE, Welch CE, Bartlett MK: Reduction of postoperative pain by encouragement and instruction of patients. N Engl J Med 1964; 270:825–7

3. Institute of Medicine: Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC, National Academies Press, 2001

4. Capuzzo M, Landi F, Bassani A, Grassi L, Volta CA, Alvisi R: Emotional and interpersonal factors are most important for patient satisfaction with anaesthesia. Acta Anaesthesiol Scand 2005; 49:735–42

5. Fischer SP: Development and effectiveness of an anesthesia preoperative evaluation clinic in a teaching hospital. ANESTHESIOLOGY 1996; 85:196–206

6. Task Force on Preanesthesia Evaluation: Practice advisory for preanesthesia evaluation: A report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. ANESTHESIOLOGY 2002; 96:485–96

7. Kopp VJ, Shafer A: Anesthesiologists and perioperative communication. ANESTHESIOLOGY 2000; 93:548–55

8. Klafta JM, Roizen MF: Current understanding of patients' attitudes toward and preparation for anesthesia: A review. Anesth Analg 1996; 83:1314–21

9. Makoul G: Essential elements of communication in medical encounters: The Kalamazoo consensus statement. Acad Med 2001; 76:390–3

10. Levinson W, Chaumeton N: Communication between surgeons and patients in routine office visits. Surgery 1999; 125:127–34

11. Little P, Everitt H, Williamson I, Warner G, Moore M, Gould C, Ferrier K, Payne S: Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. BMJ 2001; 323:908–11

12. Epstein RM, Franks P, Shields CG, Meldrum SC, Miller KN, Campbell TL, Fiscella K: Patient-centered communication and diagnostic testing. Ann Fam Med 2005; 3:415–21

13. Srinivasan M, Franks P, Meredith LS, Fiscella K, Epstein RM, Kravitz RL: Connoisseurs of care? Unannounced standardized patients' ratings of physicians. Med Care 2006; 44:1092–8

14. Fiscella K, Franks P, Srinivasan M, Kravitz RL, Epstein R: Ratings of physician communication by real and standardized patients. Ann Fam Med 2007; 5:151–8

15. Miller SM, Mangan CE: Interacting effects of information and coping style in adapting to gynecologic stress: Should the doctor tell all? J Pers Soc Psychol 1983; 45:223–36

16. Schirmer JM, Mauksch L, Lang F, Marvel MK, Zoppi K, Epstein RM, Brock D, Pryzbylski M: Assessing communication competence: A review of current tools. Fam Med 2005; 37:184–92

17. Jenkins K, Baker AB: Consent and anaesthetic risk. Anaesth 2003; 58:962–84

18. Brennan F, Carr DB, Cousins M: Pain management: A fundamental human right. Anesth Analg 2007; 105:205–21

19. Waisel DB, Lamiani G, Sandrock NJ, Pascucci R, Truog RD, Meyer EC: Anesthesiology trainees face ethical, practical, and relational challenges in obtaining informed consent. ANESTHESIOLOGY 2009; 110:480–6

20. Epstein RM, Levenkron JC, Frarey L, Thompson J, Anderson K, Franks P: Improving physicians' HIV risk-assessment skills using announced and unannounced standardized patients. J Gen Intern Med 2001; 16:176–80

Appendix 1: Detailed Training Script

Name/Age/Sex: John Smith/48/Male

Ethnicity/Race: Caucasian

Presenting Situation: Comes to the Preadmission Evaluation Center in preparation for his lung surgery. He is having a thorascopic wedge resection for lung tissue biopsy to rule out cancer. If cancer is present, a lobe of the lung or the entire lung may be removed.

Opening Statement: I'm here because I need to have lung surgery.

In response to silence or open-ended questions, will spontaneously disclose:

I guess I am here to discuss the anesthesia for my surgery. Other than that, I am not sure why I need to be here. (Blunter)

I want to discuss the details regarding the anesthesia for my wedge biopsy. What kind of anesthetic, what drugs are you going to use. When do I have to come in the morning? I know I have to not eat anything after midnight the night before, but I usually take my antacid and my supplements with food. (I get sick if I don't). Exactly who will be in the room with me? (Monitor)

Patient Symptoms:

None right now. I had some pain and swelling in my right leg, so I went to the doctor. He told me I had a blood clot there. He put me in the hospital so I could go on blood thinners to dissolve the clot. When they took a chest x-ray, they saw something in my lung. Now I am here.

I did have a cough which was worse in the morning. It's been there for a couple of months. When asked about weight loss, Mr. Smith reports that he has lost a few pounds, but that he has been trying to stay on a diet.

Onset Of Symptoms (Cough): Cough first noticed it getting worse a couple of months ago. Although I think I have always had a little smokers cough.

Pattern: Worse in the morning. I do not notice it during the day much.

Location: NA

Radiation: NA

Quality: Seems to usually be pretty dry, occasionally I bring up some stuff.

Intensity: Bad in the morning. I often sit on the edge of the bed first thing in the morning and cough for 10 min before I get up.

Onset of Symptoms (Leg Swelling, Clot): Oh I noticed that about 2 weeks ago, woke up with my leg pretty sore and swollen. It hurt to walk on it, and it was pretty warm that's when I went to the doctor.

Pattern: It was just there.

Location: My right leg, hurts worse in the back of the leg.

Radiation: Usually doesn't go anywhere, hurts in the same places.

Quality: A mixture of a dull ache and a burn.

Intensity: Oh it was sore. I had trouble moving it. Had to take the day off of work and go see the doctor.

Treatments Tried: I took some Tylenol and just let my leg rest, but that did not help. So I went to the doctor.

What Makes It Better?: Not moving it.

What Makes It Worse?: Moving it.

Pertinent Negatives: As far as you remember, you did nothing to injure your leg, it just seemed to happen.

Prescribed Medications: None.

Over-the-Counter Medication: Vitamins (with food); Antacid (for upset stomach) which I seem to have all the time.

Herbal Remedies: Oh, I take some supplements now and then.

Past Medical History:

Illnesses, Prior Episodes: I know my blood pressure has been high; it's the stress at work I am sure. I have been trying to watch my diet and lose a little weight. I know I need to stop smoking. Other than that, I have been very healthy, never been in the hospital until I got the blood clot.

Surgeries: None.

Injuries: Oh, I pull a muscle now and then but that's about it. No broken bones. No serious injuries, not even stitches allergies. I remember someone telling me that I am allergic to penicillin. I guess I had a reaction to it when I was a kid, but I don't remember.

Family Health History:

Mother: Living at age 80 yr; has some arthritis and seems to get a bit confused lately but is able to live alone.

Father: Died of massive heart attack a year and a half ago, when he was 75 yrs old.

Appendix 2. Anesthesiologist Questionnaire

ID #   Age   Male ☐ Female ☐
Attending ☐   Resident ☐   CRNA* ☐   Years of anesthesia (including training years):
Country of Medical School / Nursing School: USA ☐ Other ☐

1. Have you ever had a specific course in Provider / Patient communications?

    Yes ☐   No ☐   If yes, when: Post-grad ☐
                                    Residency ☐
                                    CRNA training ☐
                                    Nursing School ☐
                                    Medical School ☐
                                    Other ☐

2. How important do you feel the medical component of the preanesthesia evaluation is?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

3. How important is the explanation of the anesthetic plan to the patient?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

4. How important is the explanation of the postoperative pain management plan to the patient?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

5. How important is it to elicit and follow the patient's desires for the anesthetic and pain management plans?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

6. How much can a good preoperative discussion with the patient affect clinical outcomes?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

7. How much do you think patients worry about their anesthetic (as distinct from anxiety about the procedure)?

    Not at all ☐ (1)   A little bit ☐ (2)   Moderately ☐ (3)   Quite a bit ☐ (4)   Extremely ☐ (5)

Each participant in the study completed this questionnaire after completing both interviews. For questions 2–7, the numbers in parenthesis were used to average the scores. See Results.

CRNA = Certified Registered Nurse Anesthetist.

Appendix 3. Standardized Patient Post-interview Questionnaire

---

1. To what extent were your concerns about your anesthetic discussed?

    ☐ (1) Completely   ☐ (2) Mostly   ☐ (3) A little   ☐ (4) Not at all

2. How well do you think the anesthetist understood you today?

    ☐ (1) Very well   ☐ (2) Well   ☐ (3) Somewhat   ☐ (4) Not at all

3. How satisfied were you with the discussion of your anesthetic options?

    ☐ (1) Very satisfied   ☐ (2) Satisfied   ☐ (3) Somewhat   ☐ (4) Not satisfied

4. How satisfied were you with the discussion of your pain management options?

    ☐ (1) Very satisfied   ☐ (2) Satisfied   ☐ (3) Somewhat   ☐ (4) Not satisfied

5. How much opportunity did you have to ask your questions?

    ☐ (1) Very much   ☐ (2) A fair amount   ☐ (3) A little   ☐ (4) Not at all

6. To what extent did the anesthetist ask about your goals for the anesthetic and recovery?

    ☐ (1) Completely   ☐ (2) Mostly   ☐ (3) A little   ☐ (4) Not at all

7. To what extent did the anesthetist explain the anesthetic and possible side effects?

    ☐ (1) Very well   ☐ (2) Well   ☐ (3) Somewhat   ☐ (4) Not at all

8. To what extent did the anesthetist explain the postoperative pain management and possible side effects?

    ☐ (1) Very well   ☐ (2) Well   ☐ (3) Somewhat   ☐ (4) Not at all

9. To what extent did the anesthetist encourage you to take the role you wanted in your own care?

    ☐ (1) Completely   ☐ (2) Mostly   ☐ (3) A little   ☐ (4) Not at all

10. How much would you say that this anesthetist cares about you as a person?

    ☐ (1) Very much   ☐ (2) A fair amount   ☐ (3) A little   ☐ (4) Not at all

---

After each interview, the standardized patient completed this questionnaire relating to the interview, keeping the role played (*i.e.*, a blunter or monitor patient). The numbers in parenthesis were used to average the scores. See Results.