Critical Role of the Surgeon–Anesthesiologist Relationship for Patient Safety

Jeffrey B. Cooper, Ph.D.

ABSTRACT

Teamwork is now recognized as important for safe, high-quality perioperative care. The relationship in each surgeon–anesthesiologist dyad is perhaps the most critical element of overall team performance. A well-functioning relationship is conducive to safe, effective care. A dysfunctional relationship can promote unsafe conditions and contribute to an adverse outcome. Yet, there is little research about this relationship, about what works well or not well, what can be done to optimize it. This article explores functional and dysfunctional aspects of the relationship, identifies some negative stereotypes each profession has of the other and calls for research to better characterize and understand how to improve working relationships. Suggestions are given for what an ideal relationship might be and actions that surgeons and anesthesiologists can take to improve how they work together. The goal is safer care for patients, and more joy and meaning in work for surgeons and anesthesiologists. **(Anesthesiology 2018; 129:402-5)**

TEAMWORK among the members of the operating room team is one of the most critical elements in perioperative patient safety. Yet, it may be that the greatest portion of the variance for the effect of team performance on outcomes and safety is associated with one dyad in the team: the relationship between the surgeon and the anesthesiologist. My hypothesis derives from personal observation, informed by the work of Diana McLain-Smith, who has identified the relationship between dyads in teams as essential to their success or failure.[1] If it is true that leadership dyads are *a* or *the* key element in safety, quality and/or effective function of operating room teams, then the dyad of the surgeon and the anesthesiologist is the dyad we should seek to understand and optimize.

I can find little research about this relationship in the literature. How do anesthesiologists and surgeons view each other? What do they expect of each other? Do their values differ and if so, in what ways and how might that affect their ability to make the best decisions for a patient? How does their effectiveness as a dyad in the larger team impact the function of that team? When the going gets tough, what is it about that relationship that will contribute to success or failure? And, if the relationship is critical to safety (patient and caregiver) and it is sometimes or often dysfunctional, what can be done to improve its performance?

I believe that greater understanding of the dynamics of the surgeon–anesthesiologist relationship will lead to interventions that will improve it and have the effect of increasing patient safety and the quality of perioperative care. To that end, I address the questions previously noted and suggest actions to work toward making the relationship optimally effective whenever this dyad is at work. The triad relationship of surgeon–nurse–anesthesiologist and others are also critical to ensure safety, effectiveness, and quality. Yet, the dynamic between the two physicians who sometimes share, yield, or compete for leadership has a power to enable or thwart success that may transcend that of the other dyads or multiple, simultaneous interactions.

What Do We Know about the Surgeon–Anesthesiologist Relationship?

In this context, "relationship" is about how well two people get along, how much they respect and trust each other and each other's opinion, how much they rely on each other for advice, how likely they are to keep each other informed of actions impacting their dyadic partner. There is literature that speaks to some empirical aspects of the surgeon–anesthesiologist relationship.[2–6] Communication and conflict have been examined and suggestions given for addressing both.

Conflict in the operating room between individuals—mostly between the anesthesiologist and surgeon—is a significant concern and has been experienced or witnessed by almost everyone who works in an operating room. While conflict related to professional decisions is to be expected and healthy if managed well, personal conflict is not healthy and never in the best interest of the patient. Due to the vagaries of work and of human beings, conflicts can arise even when there is a generally healthy relationship between

This article is being simultaneously published in the September 2018 issues of the *Journal of the American College of Surgeons* and Anesthesiology.

Submitted for publication March 14, 2018. Accepted for publication May 22, 2018. From the Department of Anesthesia, Critical Care and Pain Medicine, Massachusetts General Hospital, Boston, Massachusetts.

<zdoi;10.1097/ALN.0000000000002324>

the parties. Often it may be a visible and potentially destructive manifestation of a suboptimal or toxic relationship. Whether the conflict is problematic depends on how it arises and then how the individuals manage it. Too often, that is not done well.

The duration of the surgeon–anesthesiologist relationships is variable—sometimes the individuals have only just met; other times they have worked together for a long time. Familiarity sometimes provides shared trust that helps to defuse conflict; other times it forms an entrenched dysfunctional relationship and distrust.

Some aspects of communication, perceptions of roles, differing mental models, the tone set for enabling speaking up, and related issues have been addressed in numerous studies, most notably by Lingard *et al.*,[2,3] and also by others.[6–9] In none of these articles is there an emphasis on understanding of the roots of the surgeon–anesthesiologist dyad functionality and dysfunctionality or how to improve it.

Unfortunately, little is written about effective relationships in health care, especially exemplars of good working relationships, which are more likely to be common in some settings than in others. There is reason to believe that these contribute greatly to quality, safety, and efficiency.

Personal Observations

I was drawn to this topic by personal observations and conversations with anesthesiologists and surgeons over my many years in patient safety and quality. Since I'm not a physician and have not directly experienced the behaviors from one "tribe" as a member of the other, perhaps my perspectives are flawed in some ways. (The term "tribe" can be used to describe the different professions in the operating room, *e.g.*, surgeon, nurse, anesthesiologist, surgical technician. For insight about how tribal instincts and behaviors can be destructive between tribes, and for society, see Junger[10]). Yet, by being an observer of both without that inherent bias, perhaps I have a perspective that the members of either tribe generally do not. Admittedly, most of my experiences have been with anesthesiologists, yet I've had enough similar conversations with surgeons to notice patterns, concerns, and hypotheses.

Observation 1: When the dyad is highly functional, it greatly serves the interest of the patient; each can help and "rescue" the other. And, a good working relationship creates a much more pleasant working environment (for all).

Observation 2: When the dyad is dysfunctional, it can—and does—sometimes lead to harm and often creates an unpleasant, and sometime toxic, working environment.

Observation 3: Each side of the dyad has some perceptions of the other that are derogatory. If I were to ask each what they think about the other specialty in general, the first response would include some statements that are complimentary. (Corollary: when acting together, both may share common stereotypes of other physician tribes.)

Observation 4: Each side of the dyad sometimes attributes motivations to the other that are not solely in the best interests of patients.

While I am not aware of empirical data to support the following characterizations, I offer some examples of attitudes I've gleaned about how each side of the dyad sometimes perceives that the actions of the other may not be in the best interest of the patient.

Anesthesiologists' Negative Perceptions of Surgeons

Some negative perceptions of surgeons by anesthesiologists include: failure to be knowledgeable about "medical" or "anesthesia-related" (as opposed to surgical) issues; failure to perceive or acknowledge the extent of blood loss; consistent underestimation of surgical time; failure to be forthcoming to patients and families about the likelihood of success and magnitude of difficulty in recovery after surgery; failure to adequately consider patient health conditions and patient desires; and discouraging speaking up by others about safety concerns.

Surgeons' Negative Perceptions of Anesthesiologists

Some negative perceptions of anesthesiologists by surgeons include: more concerned with finishing their day on time than serving their patients' needs; unreasonable eagerness to cancel a procedure based on unjustified concerns; unappreciative of the need to maintain schedule; unreasonably long turnover times; distraction and inattention during surgery; failure to communicate important changes in vital signs to the entire team; failure to keep the team informed of the need for vasopressor support; lack of understanding of the patient–surgeon relationship; and unwillingness to change anesthetic approach for the surgeon's need to optimize surgical technical considerations.

Differing Values

Surgeons and anesthesiologists have different jobs that can lead to different values and motivations for what they see as best for the patient. The tribe in which each was trained has evolved a set of values and beliefs that are consistent with what generally has optimized its success over the years. Haidt deeply explores how values in our societies are developed and how they affect the way we perceive the "other."[11] Like all tribes, the overall success of the group can lead to negative perceptions of other groups. Thus, some dysfunction between two individuals from differing tribes is to be expected. Hope for improving dyad functionality for the interests of the patient comes from recognition and acknowledgment of the differences and efforts to resolve or accommodate them.

What Might an Ideal Relationship Look Like?

When I am the patient, I want my surgeon and anesthesiologist to work in complete harmony, putting aside their personal needs for the sake of my safety and welfare. Surgeons

and anesthesiologists should gain deeper understanding of the demands and constraints on each other's professional goals for patients in general as well as for any specific patient. This would happen far enough in advance to respect the time needed for addressing those concerns. (Ideally a day or more in advance, or perhaps a serious "huddle" before bringing the patient into the operating room. The immediate presurgery time out may be sufficient for some prosaic needs.) Each would be open to and encouraging of hearing the perceptions and opinions of the other, even when it seems to encroach on their own area of expertise. That can happen merely from the encouragement of asking questions. Each would always start with an extension of the "basic assumption" (from simulation-based debriefing) about the other: "I believe that you are intelligent, competent, trying your hardest to do your best and seeking to improve, and acting in the best interest of this patient and the organization."[12] Where there is legitimate disagreement about what option to pursue, the debate would center on what's right for the patient, not who is right.

Examples of missing elements that might contribute to optimal relationships is interdisciplinary morbidity and mortality or case review, and an effectively conducted huddle. I have been involved with both unidisciplinary and interdisciplinary quality assurance committees at two hospitals over the years. Both have advantages and disadvantages. Overall, discussing/debriefing challenging cases or adverse outcomes as a team seems highly preferable. There are barriers to doing that, *e.g.*, differing work schedules, or the need to feel comfortable outside one's own tribe to say things that may be critical. Fortunately, such interprofessional debriefings seem to be increasing so we can hope this will be a positive influence on the overall working relationship.

What Kinds of Research Can Lead to Better Understanding?

The investigations about relationships between perioperative team members have not addressed most of the questions I posed at the outset. Surveys, focus groups, observational studies, the critical incident method, or deep ethnography all could be used to shed light on what are the issues that make the surgeon–anesthesiologist dyad highly functional or highly dysfunctional. As did the critical incident studies our own team conducted in the 1970s, these would be first steps to defining the issues more clearly, and perhaps quantifying how much of a contribution dysfunction and high function impact care.[13,14] Case reports of examples of both functional and dysfunctional relationships, and especially more nuanced aspects of the relationships that can contribute to suboptimal care, also would raise awareness of how behaviors and attitudes can lead to the best of care or the worst of care and anything in between. Lingard's work is most notable; such research can be extended to other research teams and venues. Bosk's seminal book, *Forgive and Remember*, is an excellent example of embedded ethnography in the surgical tribe.[15] Replicating that with an emphasis on the surgeon–anesthesiologist relationship, from both sides, could be illuminating on the questions I've posed. Another area for exploration and awareness that might be fruitful is that of emotional intelligence. Emotional intelligence is increasingly understood to be important for effective leadership and relationship management.[16]

Discussion

What Can Be Done in the Meantime, before We Have More Evidence?

If you are an anesthesiologist or surgeon and you think that what I am proposing is worth addressing to improve the experience of your patients and your joy and meaning in your professional work, what can you do given the absence of empirical evidence? I haven't tested these suggestions except in situations where I have recognized relational dysfunction in my own life so I can't say for sure they work for the surgeon–anesthesiologist dyad. A certain amount of common sense and experience from my many years as a manager and leader of individuals and teams suggests to me that the following ideas make sense:

1. Ask a colleague in the other tribe what are his or her perceptions of the members of your tribe. Have a dialogue about the source of those perceptions. It's likely best to do this over a casual meal or beverage rather than during a case over the "ether screen."
2. Read some of the articles referenced here to learn more about dyad conflict and intertribal attitudes.[1–3,10]
3. Organize a focus or discussion group including a few members from each tribe. A professional facilitator can aid the success of such efforts.
4. One topic for a focus group could be explicit designation of how leadership should be shared or designated in different situations.
5. Next time a situation arises that makes you feel that a colleague from the other tribe is doing something that seems more in their own best interest rather than in the patient's interest, be curious and metacognitive. Consider what other explanations there might be. If you can do it in a nonthreatening, nonaccusatory way, you can ask the person; however, being able to pull that off with true curiosity and nuance isn't easy. It's a skill that requires training and practice.[17]
6. If you are fortunate enough to work in a hospital that has a simulation program with training of the full operating team, avail yourself of or create an opportunity to participate.[18]

If the issues identified here resonate with sufficient strength to enough surgeons and anesthesiologists, certainly there is a role that the American College of Surgeons and the American Society of Anesthesiologists can play in exploring the issues and working to achieve a more optimal state.

Given space limitations, I have not covered all aspects of this topic that are relevant in understanding and optimizing the surgeon–anesthesiologist dyad performance, *e.g.*, working in fixed *versus* changing teams; interactions among other members of the team; production pressure; employment arrangements (independent or employees); academic *versus* private practice. This can be part of an expanded dialogue and exploration.

You may be a surgeon or anesthesiologist for whom none of this is relevant and who is fortunate to only have strong surgeon–anesthesiologist relationships. Nonetheless, I have enough evidence to believe that the shoe fits for many; and, even the best people and the best relationships have some rocky times. Certainly, I know of enough situations where problems in the surgeon–anesthesiologist relationship have been harmful to patients. Ultimately, no matter our own interpersonal issues, surely, we can all agree that keeping patients safe should be the overriding concern.

Acknowledgments

The author would like to thank the following people who reviewed the manuscript and provided some suggestions: Aalok V. Agarwala, M.D., M.B.A., Division Chief, General Surgery Anesthesia, Associate Director, Quality and Safety, Assistant Professor, Harvard Medical School, Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital, Boston, Massachusetts; William R. Berry, M.D., M.P.A., M.P.H., Associate Director, Ariadne Labs, Chief Implementation Officer and Interim Director of Implementation Platform, Brigham and Women's Hospital, Harvard T. H. Chan School of Public Health, Boston, Massachusetts; David M. Gaba, M.D., Associate Dean for Immersive and Simulation-Based Learning and Professor of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine, Staff Anesthesiologist and Founder and Co-Director, Patient Simulation Center at Veterans Affairs Palo Alto Health Care System, Palo Alta, California; Charlotte L. Guglielmi, M.A., B.S.N., R.N., C.N.O.R., Clinical Manager, Perioperative Education, Beth Israel Deaconess Medical Center, Boston, Massachusetts; Alexander A. Hannenberg, M.D., Chief Quality Officer, American Society of Anesthesiologists, Senior Research Scientist, Ariadne Labs, Boston, Massachusetts and Peter M. Waters, M.D., Orthopedic Surgeon-in-Chief, Boston Children's Hospital, John E. Hall Professor, Harvard Medical School, Boston, Massachusetts.

Research Support

Support was provided solely from institutional and/or departmental sources.

Competing Interests

The author declares no competing interests.

Correspondence

Address correspondence to Dr. Cooper: 290 Tappan St., Brookline, Massachusetts 02445. jcooper@mgh.harvard.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.

References

1. McLain-Smith D: Divide or Conquer: How Great Teams Turn Conflict into Strength. New York, Penguin Group, 2008
2. Lingard L, Reznick R, DeVito I, Espin S: Forming professional identities on the health care team: Discursive constructions of the 'other' in the operating room. Med Educ 2002; 36:728–34
3. Lingard L, Regehr G, Espin S, Devito I, Whyte S, Buller D, Sadovy B, Rogers D, Reznick R: Perceptions of operating room tension across professions: Building generalizable evidence and educational resources. Acad Med 2005; 80(10 Suppl):S75–9
4. Lingard L, Vanstone M, Durrant M, Fleming-Carroll B, Lowe M, Rashotte J, Sinclair L, Tallett S: Conflicting messages: Examining the dynamics of leadership on interprofessional teams. Acad Med 2012; 87:1762–7
5. Katz JD: Conflict and its resolution in the operating room. J Clin Anesth 2007; 19:152–8
6. Brown EKH, Harder KA, Apostolidou I, Wahr JA, Shook DC, Farivar RS, Perry TE, Konia MR: Identifying variability in mental models within and between disciplines caring for the cardiac surgical patient. Anesth Analg 2017; 125:29–37
7. Raemer DB, Kolbe M, Minehart RD, Rudolph JW, Pian-Smith MC: Improving anesthesiologists' ability to speak up in the operating room: A randomized controlled experiment of a simulation-based intervention and a qualitative analysis of hurdles and enablers. Acad Med 2016; 91:530–9
8. Edmondson AS: Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. Journal of Management Studies 2003; 40(6):1419–52
9. Glance LG, Osler TM, Neuman MD: Redesigning surgical decision making for high-risk patients. N Engl J Med 2014; 370:1379–81
10. Junger S: Tribe: On Homecoming and Belonging. New York, Hachette Book Group, Inc.; 2016
11. Haidt J: The Righteous Mind: Why Good People Are Divided by Politics and Religion. New York, Pantheon Books, 2012
12. Rudolph JW, Simon R, Raemer DB, Eppich WJ: Debriefing as formative assessment: Closing performance gaps in medical education. Acad Emerg Med 2008; 15:1010–6
13. Cooper JB, Newbower RS, Long CD, McPeek B: Preventable anesthesia mishaps: A study of human factors. ANESTHESIOLOGY 1978; 49:399–406
14. Cooper JB, Newbower RS, Kitz RJ: An analysis of major errors and equipment failures in anesthesia management: Considerations for prevention and detection. ANESTHESIOLOGY 1984; 60:34–42
15. Bosk CL: Forgive and Remember, Managing Medical Failure. 2nd. ed. Chicago: The University of Chicago Press; 1979
16. Mintz LJ, Stoller JK: A systematic review of physician leadership and emotional intelligence. J Grad Med Educ 2014; 6:21–31
17. Rudolph JW, Simon R, Rivard P, Dufresne RL, Raemer DB: Debriefing with good judgment: Combining rigorous feedback with genuine inquiry. Anesthesiol Clin 2007; 25:361–76
18. Arriaga AF, Gawande AA, Raemer DB, Jones DB, Smink DS, Weinstock P, Dwyer K, Lipsitz SR, Peyre S, Pawlowski JB, Muret-Wagstaff S, Gee D, Gordon JA, Cooper JB, Berry WR; Harvard Surgical Safety Collaborative: Pilot testing of a model for insurer-driven, large-scale multicenter simulation training for operating room teams. Ann Surg 2014; 259:403–10