

Association for Surgical Education

Effects of disruptive surgeon behavior in the operating room



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Abstract

BACKGROUND: Surgeons are the physician group most commonly identified as “disruptive physicians.” The aim of this study was to develop a conceptual model of the results of disruptive surgeon behavior and to identify the coping strategies used by perioperative staff.

METHODS: Perspectives of 19 individuals of diverse occupations in the perioperative setting were drawn together using a grounded theory methodology.

RESULTS: Effects of disruptive behavior described by participants included shift in attention from the patient to the surgeon, increased mistakes during procedures, deterrence from careers in surgery, and diminished respect for surgeons. Individual coping strategies employed in the face of intimidation include talking to colleagues, externalizing the behavior, avoidance of perpetrators, and warning others.

CONCLUSIONS: Using grounded theory analysis, we were able to elucidate the impact of disruptive surgeon behavior in the perioperative environment. This conceptual model may be used to understand and counter the negative effects of manipulation and intimidation of hospital staff and trainees and to build on current programmatic strengths to improve surgical environments and training.

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Although disruptive physician behavior is widely considered a source of concern in the patient care environment, surgeons have been the specialty most commonly identified as “disruptive physicians.”¹ This conduct distracts from patient care and negatively affects the morale of the team surrounding a disruptive physician.¹⁻³ In 2010, The Joint Commission released a sentinel event alert on disruptive physician behavior that elaborated on their 2009 Leadership standard addressing disruptive

and inappropriate behaviors; the report includes a lengthy delineation of proposed actions designed to combat these behaviors.⁴

Prior research has sought to define the environmental effects of disruptive surgeon behavior, with the preponderance of this work relying on survey data to draw relevant conclusions.^{1-3,5,6} Although this represents an important starting place, the potential means of coping are limited in a survey to options that were not defined by those experiencing disruptive episodes. Furthermore, no prior investigation has examined the coping strategies used by staff who are proximate to disruptive surgeon behavior events. The aim of this study was to develop a conceptual model of the impact of disruptive surgeon behavior in the perioperative environment. Specifically, we employed semistructured interviews and grounded theory analysis to delineate

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the effects of disruptive behavior and identify the coping strategies used by perioperative staff.

Methods

This project was designed according to qualitative methodology using a grounded theory approach.⁷⁻⁹ Through extensive use of interviews, the researchers gain insight into the meaning participants make of a phenomenon within its social context. The paradigms generated from the interview data come specifically from the information shared by the interviewees. Grounded theory analysis is not hypothesis driven but is used to develop a model based on iterative examination of interview data. Participants were not given a definition for a disruptive surgeon but instead were asked to provide descriptions of disruptive behavior in conjunction with their discussion of effects of and coping strategies in response to these behaviors.

Interviews

Interviews occurred over a 9-month period at a single academic medical center. Approval of the local institutional review board was obtained, and all participants provided informed consent for participation in the study. Each interview was digitally audiorecorded and transcribed verbatim. Interviews were semistructured and conducted in a confidential manner by a single interviewer who was unfamiliar with the perioperative environment. Participants were purposively selected to achieve maximum variation with respect to age, sex, and occupation and to increase the likelihood that the varying perspectives would accurately represent differences.¹⁰ New participants were sought until information gathered from interviews no longer expanded or refined the preliminary data.⁷

Interviews detailed participants' experiences of disruptive surgeon behavior in the operating room (OR), with a focus on the effects they ascribed to those disruptive behaviors and how they self-managed during these episodes. Each participant had the opportunity to review and approve her or his transcript for fidelity.^{11,12} Both authors had access to and reviewed the interview transcripts.

Data analyses

Data analyses followed a 3-step process involving open, axial, and selective coding.⁹ This iterative process concludes with an illustrative model to conceptualize and explain the effects of the disruptive behavior. Both authors met regularly to discuss all aspects of coding until consensus was reached at each step, establishing credibility and groundedness in the data.¹³ This also allowed for peer debriefing to triangulate the data. Data were further given credibility through documentation of an audit trail according to grounded theory design.^{9,14-16}

Results

Participants

Interviews included a total of 19 participants (scrub technicians, n = 2; nurses, n = 4; medical students, n = 5, surgical residents, n = 4; anesthesiologists, n = 4). All staff were employed in the perioperative environment of a single institution at the time of their interview, and medical students had completed their required surgical clerkship. Participants' ages ranged from 25 to 48, with a mean age of 36. Thirteen interviewees identified as white, 4 as Asian, 1 as black, and 1 as Hispanic. As highest level of educational attainment, 69% of participants had obtained an MD, 21% had a bachelor's degree, 5% had an associate's degree, and 5% had a high school diploma. Participants were evenly divided by sex (48% men and 52% women). All participants equally contributed to the emergent themes identified by the investigators.

Themes

Descriptions of disruptive surgeon behavior by the participants have been reported separately.¹⁷ Study participants described 2 broad themes regarding the effects of disruptive behavior. The first theme described the negative consequences of disruptive behavior, including how interviewees had been personally affected by it. The second theme centered on coping strategies of interviewees and depicted how participants navigated these difficult situations to fulfill their professional responsibilities. The most common effects and coping strategies are described in detail subsequently, with all described effects and strategies illustrated in Fig. 1.

Negative consequences of disruptive surgeon behavior. *Shifts focus from patient to surgeon.* The most commonly mentioned effect of surgeon outbursts was a shift in the focus of those in the room from care of the

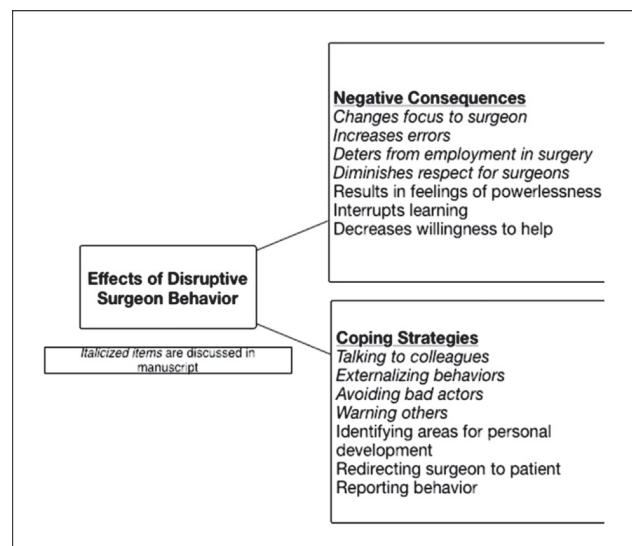


Figure 1 Effects of disruptive surgeon behavior.

patient to managing the surgeon's behavior. Twelve participants, including all surgical residents and 3 of the anesthesiologists, described this effect. One anesthesiologist stated:

It's a distraction from the patient. When I'm ... talking to the surgeon [and worrying] I'm going to get in trouble ... I wasn't paying attention to that critically ill patient. And in fact, I did miss a critical value lab on her.

Team members described having concern for the safety of patients when surgeons would react to a situation by behaving in a disruptive manner. Rather than productively attending to the procedure and the safety of the patient, the members of the perioperative team become engrossed in de-escalating and pacifying the surgeon to mitigate further explosive conduct.

Increases surgical errors. Participants perceived that disruptive behavior resulted in more frequent mistakes in procedures. Ten participants, 6 of whom were residents or anesthesiologists, identified that disruptive behavior led to a snowball effect of increasingly frequent errors that were attributable to impaired decision making by team members, decreased efficacy of communication, and heightened anxiety of team members. One anesthesiologist described the spiral of events in this manner:

Things become even less efficient because now you've instilled fear ... so they're tense and they're not thinking clearly and they miss things. They start making more errors. You become acutely aware that you're making errors and you start making more errors ... and people start scrambling ... it builds on itself.

Interviewees explained that the environment became increasingly inefficient as the inherently stressful surgical setting became exponentially more stressful while defending the patient and oneself against members of one's own team.

Deters employment in surgery. The stress of the environment created by disruptive surgeon behavior led 9 interviewees to report that they had either left positions in the past or regularly contemplated quitting their job, changing careers, or not pursuing training in surgery. All medical students interviewed explained that their observation of disruptive behavior by surgeons discouraged them from pursuing a career in surgery, although they all had pre-existing interest in surgical fields. They felt they would be unhappy in the surgical environment or that they would need to adopt certain dysfunctional personality characteristics (eg, "arrogance," "being quick to anger," "impatient") to be successful. One student stated that she and a classmate terminated their interest in surgery training after working with the same disruptive surgeon during a rotation:

Both of us dropped our applications to surgery after working with him. Neither one of us was willing to go into a field where you would have to work with someone like that, or if there is a possibility of that field turning you into that person. Neither one of us was willing to make that sacrifice.

Diminishes respect for surgeons. Eight interviewees reported that after witnessing ongoing disruptive behavior by a particular surgeon, they felt a loss of respect for that specific surgeon and a global loss of respect for surgeons. Interviewees mentioned this effect across professions, with at least 1 interviewee in each professional group describing this response. Although they may have initially perceived surgeons as completing their duties with a degree of care for patients, after negative experiences, interviewees began to uniformly view surgeons as individuals who were self-centered and preoccupied with power, status, and money. One scrub technician stated:

I used to idolize surgeons ... because they've had so much education, they're saving lives. But not as much anymore ... I feel like they've done it because they like the money and the status and the power.

They also developed the impression that surgeons as a group were unable to regulate their distress and had the potential to be emotionally manipulative.

Coping strategies. Talking to colleagues. The most common strategy used to dissipate the effects of working with disruptive surgeons was debriefing with colleagues. Fourteen interviewees said that after a difficult situation, they talked with coworkers to find support, humor, and relieve stress to better continue their work. This coping strategy was described by all residents and students and 3 nurses. Although these interviewees reported they did not have expectations that talking to peers would lead to meaningful changes in surgeon behavior, colleagues were viewed as nonjudgmental allies who could mitigate the shaming nature of many disruptive incidents. One surgery resident described the use of peer and colleague support in this way:

Afterwards, if they've been berated or yelled at, or had something thrown at them, we can talk ... Even though I can't control what happens in there, I can ... empathize ... so they're not internalizing that, 'I'm a terrible person.'

Interviewees who described this method of coping often said that they would have left their perioperative work or their training in surgery had it not been for supportive colleagues.

Externalizing the behavior. The next most frequently used coping strategy was to externalize the surgeon's behavior, seeking ways to consciously depersonalize the interactions. Thirteen participants described cognitively reinforcing that the surgeon's behavior was not actually reflective of their own work performance. Coping through externalization involved 3 distinct thought processes. First, interviewees recognized that the disruptive behavior originated from the surgeon's frustration with the case, with disappointment in his or her performance, or was characteristic of his or her personality or style of interpersonal interactions. One anesthesiologist explained, "Once I realized that they were angry at themselves most of the time and not angry at anyone else in the room, it became much, much easier to

just ignore it and talk to them in a normal way.” Second, participants focused on their supporting role in surgery, emphasizing that success or failure of the case was primarily the result of the surgeon’s performance rather than their own as a team member. One resident explained, “He puts too much pressure on the residents and it’s not fair ... if we’re in there operating with an attending and someone is bleeding to death, I’m not going to do the lifesaving maneuver, the attending is.”

Third, interviewees reinforced thoughts of self-worth. For example, participants described reminding themselves that they were skilled professionals who were well trained and whose work yielded positive outcome. Reinforcing these cognitions unlinked the disruptive behavior as a reflection of their true capacities, which allowed them to regulate the emotional distress induced by the behavior. An anesthesiologist stated:

You just develop some defense mechanisms. I look at it as, I’m excellent at what I do and they’re lucky to have me standing at the table. I don’t think they would get better care anywhere else. If you can’t develop that [way of thinking], you just can’t do it.

Avoiding bad actors. Because certain surgeons were known to consistently be disruptive, 8 participants described avoiding surgeons who were most likely to offend. Interviewees endorsed a common understanding of who the most disruptive surgeons were, and both nurses and scrub technicians explained it was common for staff to request to not work with known difficult surgeons. In the case that work with a surgeon was unavoidable, interviewees described behaving in a way that minimized their conspicuousness in the room, including not talking, evading eye contact, and keeping one’s head down. Interviewees said they would often get necessary information about the case from coworkers rather than the surgeon, such as the anesthesiologist, to avoid direct communication. All 4 nurses reported using this strategy, one of whom described her personal approach to the disruptive surgeon saying, “I’ll ignore him completely because I know he’s just going to yell ... Either I just won’t say anything or I won’t talk to him, I’ll talk to somebody else ... just making myself invisible.”

Warning others. Driven by a sense of responsibility to their coworkers, fellow students, and especially those whom they were training, 7 participants said they typically warned peers about certain surgeons’ behavior or situations that were likely to result in disruptive behavior. These 7 interviewees described feeling a particular sense of responsibility to protect new employees or trainees, whom they felt were not prepared to anticipate the episodes and were especially vulnerable to negative effects of the conduct. They encouraged trainees to read and reread training references, research particular topics, study the patient’s chart or refer to the doctor’s preference card. They also would offer advice regarding how to best prepare for outbursts or to avoid difficult situations. When asked how she prepares coworkers who will work with a difficult surgeon, 1 scrub technician

replied, “I prepare them by telling them, ‘This person has issues with such and such. Just keep quiet, follow my lead, don’t draw attention to yourself.’”

Comments

Disruptive physician behavior represents a specific form of communication failure with a known negative impact on patient safety.^{5,6,18,19} The substantiating data contained in the stories of our interviewees provide better insight into how patient safety is hindered as a result of disruptive incidents and the impact of intimidation on immediate job performance. Previous ethnographic work observed a “ripple effect,” in which high-tension events would affect other participants or events that were only peripherally related to the initial event.²⁰

One of the most provocative findings from this work relates to the impact of disruptive surgeon behavior on student interest in surgical careers and the degradation of respect for surgeons (both individually and globally) from those who witness disruptive episodes. Prior studies have consistently demonstrated the relevance of positive role models in attracting students to careers in surgery.^{21,22} Students may leave their surgical clerkship with a decreased perception of surgeons being respectful to other physicians²¹; when students identify role modeling as the single most important aspect of professionalism education, disrespect toward peers creates a cognitive conflict for them that they may perceive as threatening.^{23,24} As a consequence, trainees often feel compelled to act improperly to “fit in” with their team.^{25,26} Also, interviewees described a tendency to avoid interaction by minimizing their conspicuousness with known disruptive surgeons, a finding consistent with earlier observation of trainee withdrawal in high-tension situations.²⁰

We recognize that definitions of professionalism are complex, and traditional frameworks may not include all aspects that are meaningful to trainees.²⁷ Disruptive behavior implies an incongruity between a surgeon’s thoughts and behaviors with respect to patients, and reconciling the cognitive and the behavioral in this situation is imperative.²⁸ These lapses in professionalism as perceived by those working in the perioperative environment are events that the profession of surgery can ill-afford to propagate, particularly when it results in the loss of exceptionally talented and interested young physicians to other specialties.

Culture change and system change both provide future directions to address our findings and inform future research programs.²⁹ A key question can be raised regarding “trainability” of surgeons who exhibit disruptive behaviors—can we teach them to behave more appropriately under stressful conditions or do they simply need to be removed from the profession? A handful of physicians are responsible for most professionalism complaints, and these physicians are more likely to be found in surgical disciplines.^{30–32} The process underlying the highly successful

Center for Patient and Professional Advocacy program at Vanderbilt has included the identification, measurement, and treatment of unprofessional behaviors.^{31,32} Hickson asserts that appropriate and consistent address of professionalism issues is key and that accountability for change must ultimately lie with the practitioner.³¹ Perhaps, most importantly, remediation and reassessment of unprofessional behaviors must include actual execution of any threatened disciplinary action if change does not occur; this is critical at the level of the practicing physician and for trainees.^{31,33} Included among possible consequences for the most egregious offenders may be a termination.

In terms of system change, related work has demonstrated a need for conflict resolution training in the perioperative environment, and no work to date has demonstrated if or how this training mitigates the effects of disruptive surgeon behavior or alters the ability of trained staff to intervene early to avert disruptive behavior.^{34,35} We do know that team members in the perioperative environment often rate their own profession as having relatively less responsibility for tension in the OR, also consistent with discrepancies in perceptions of teamwork.^{36,37} Team training likely provides an important avenue for mitigating disruptive behavior through a variety of mechanisms. First and foremost, improved communication is a known benefit to the implementation of a crew resource management model of perioperative team training.³⁸ Study of the impact of a team training program showed that although team performance was improved that these improvements were not necessarily durable over time, frequent exposures to education about team dynamics may also be of benefit to team function.³⁹ Finally, more recent work has demonstrated that team training interventions with interprofessional teams of students result in improved team-based attitudes and behaviors.⁴⁰ The recognition that team training benefits team-based behaviors in both learners and practitioners and that repeated exposure to core concepts may benefit team function implies that the development of a vertically integrated interdisciplinary team training curriculum for the perioperative environment would provide a meaningful experiential contribution to the field of surgical education, particularly if developed as an evidence-based exercise. In addition, a systematic review of the literature on team training would represent an important contribution to the education literature.

Empowerment of all team members, including fostering an environment in which all team members are expected to raise issues that may affect patient safety, is aligned with the principles of Anaesthetists' Nontechnical Skills (ANTS), Nontechnical Skills for Surgeons (NOTSS), and Scrub Practitioners' List of Intraoperative Nontechnical Skills (SPLINTS) training; full implementation of ANTS, NOTSS, and SPLINTS in an interprofessional learning environment has the potential to substantially improve communication pathways and defuse critical incidents before they magnify into a more disruptive event.^{41–43} Early evidence indicates that the use of "stable" OR teams (ie, teams with consistent team members) reduce potential

for conflict episodes and may enhance the quality of surgical care that is delivered because of the presence of more "flat" hierarchies and ongoing working relationships that reduce conversion of task conflict to relationship conflict between team members.^{34,35,44} Future work from our group will examine the difference between stable and "unstable" teams in terms of interpersonal conflict, patient safety, and patient outcomes. Finally, the implementation of "zero-tolerance" policies for disruptive behavior, with supportive hospital bylaws and policies for management, provides an effective means for containing this behavior.³¹

Conclusions

This study adds to the body of literature on professionalism, conflict, and disruptive physician behavior, with our qualitative approach demonstrating how disruptive surgeon behavior has negative consequences for patient care and the future of the surgical profession. However, this study uniquely illustrates that the varied coping responses for those who experience disruptive surgeon behavior can be both functional (talking to colleagues) and dysfunctional (avoidance). The resultant picture from our grounded theory investigation details the impact of disruptive surgeon behavior in the perioperative environment. This theory may be used to understand and counter the negative effects of manipulation and intimidation of hospital staff members and trainees and to improve surgical care and surgical training.

References

1. Rosenstein AH, O'Daniel M. Impact and implications of disruptive behavior in the perioperative arena. *J Am Coll Surg* 2006;203:96–105.
2. Rosenstein AH. Original research: nurse-physician relationships: impact on nurse satisfaction and retention. *Am J Nurs* 2002;102:26–34.
3. Rosenstein AH, O'Daniel M. Invited article: managing disruptive physician behavior: impact on staff relationships and patient care. *Neurology* 2008;70:1564–70.
4. The Joint Commission. Sentinel Event Alert, Issue 40: Behaviors that Undermine a Culture of Safety; 2010. Available at: http://www.jointcommission.org/sentinel_event_alert_issue_40_behaviors_that_undermine_a_culture_of_safety/. Accessed May 5, 2014.
5. Rosenstein AH, O'Daniel M. Disruptive behavior and clinical outcomes: perceptions of nurses and physicians. *Am J Nurs* 2005;105:54–64. quiz 64–5.
6. Rosenstein AH, O'Daniel M. A survey of the impact of disruptive behaviors and communication defects on patient safety. *Jt Comm J Qual Patient Saf* 2008;34:464–71.
7. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine; 1967.
8. Strauss AL. *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press; 1987.
9. Strauss AL, Corbin J. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. 3rd ed. Los Angeles, CA: Sage Publications, Inc.; 2008.
10. Patton MQ. *Qualitative Evaluation and Research Methods*. 3rd ed. Los Angeles, CA: Sage Publications, Inc.; 2001.
11. Lincoln YS, Guba EG. *Naturalistic Inquiry*. Los Angeles, CA: Sage Publications, Inc.; 1985.

12. Williams E, Morrow S. Achieving trustworthiness in qualitative research: a pan-paradigmatic perspective. *Psychother Res* 2009;19:576–82.
13. Morrow S, Smith M. Qualitative research for counseling psychology. In: Brown S, Lent R, editors. *Handbook of Counseling Psychology*. 3rd ed. New York: Wiley; 2000. p. 199–230.
14. Charmaz K. *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. London: Sage; 2006.
15. Ponterotto J. Qualitative research in counseling psychology: a primer on research paradigms and philosophy of science. *J Couns Psychol* 2005;52:126–36.
16. Morrow S. Quality and trustworthiness in qualitative research in counseling psychology. *J Couns Psychol* 2005;52:250–60.
17. Lingard L, Espin S, Whyte S, et al. Communication failures in the operating room: an observational classification of recurrent types and effects. *Qual Saf Health Care* 2004;13:330–4.
18. Porto G, Lauve R. Disruptive clinician behavior: a persistent threat to patient safety. *Patient Saf Qual Healthc*. Available at: <http://www.psgh.com/julaug06/disruptive.html>; 2006. Accessed May 5, 2014.
19. Lingard L, Reznick R, Espin S, et al. Team communications in the operating room: talk patterns, sites of tension, and implications for novices. *Acad Med* 2002;77:232–7.
20. Cochran A, Paukert JL, Neumayer LA. Does a general surgery clerkship influence student perceptions of surgeons and surgical careers? *Surgery* 2003;134:153–7.
21. Berman L, Rosenthal MS, Curry LA, et al. Attracting surgical clerks to surgical careers: role models, mentoring, and engagement in the operating room. *J Am Coll Surg* 2008;207:793–800. 800.e1-2.
22. Brainard AH, Brislen HC. Viewpoint: learning professionalism: a view from the trenches. *Acad Med* 2007;82:1010–4.
23. Byszewski A, Hendelman W, McGuinty C, et al. Wanted: role models—medical students' perceptions of professionalism. *BMC Med Educ* 2012;12:115.
24. Feudtner C, Christakis DA, Christakis NA. Do clinical clerks suffer ethical erosion? Students' perceptions of their ethical environment and personal development. *Acad Med* 1994;69:670–9.
25. Nagler A, Andolsek K, Rudd M, et al. The professionalism disconnect: do entering residents identify yet participate in unprofessional behaviors? *BMC Med Educ* 2014;14:60.
26. Ginsburg S, Regehr G, Stern D, et al. The anatomy of the professional lapse: bridging the gap between traditional frameworks and students' perceptions. *Acad Med* 2002;77:516–22.
27. Beach MC, Duggan PS, Cassel CK, et al. What does “respect” mean? Exploring the moral obligation of health professionals to respect patients. *J Gen Intern Med* 2007;22:692–5.
28. Leape LL, Shore MF, Dienstag JL, et al. Perspective: a culture of respect, part 2: creating a culture of respect. *Acad Med* 2012;87:853–8.
29. Hickson GB. Patient complaints and malpractice risk. *JAMA* 2002;287:2951.
30. Hickson GB, Pichert JW, Webb LE, et al. A complementary approach to promoting professionalism: identifying, measuring, and addressing unprofessional behaviors. *Acad Med* 2007;82:1040–8.
31. Swiggart WH, Dewey CM, Hickson GB, et al. A plan for identification, treatment, and remediation of disruptive behaviors in physicians. *Front Health Serv Manage* 2009;25:3–11.
32. Rogers D, Lingard L, Boehler ML, et al. Teaching operating room conflict management to surgeons: clarifying the optimal approach. *Med Educ* 2011;45:939–45.
33. Rogers DA, Lingard L, Boehler ML, et al. Surgeons managing conflict in the operating room: defining the educational need and identifying effective behaviors. *Am J Surg* 2013;205:125–30.
34. Lingard L, Regehr G, Espin S, et al. Perceptions of operating room tension across professions: building generalizable evidence and educational resources. *Acad Med* 2005;80(10 Suppl):S75–9.
35. Makary MA, Sexton JB, Freischlag JA, et al. Operating room teamwork among physicians and nurses: teamwork in the eye of the beholder. *J Am Coll Surg* 2006;202:746–52.
36. Awad SS, Fagan SP, Bellows C, et al. Bridging the communication gap in the operating room with medical team training. *Am J Surg* 2005;190:770–4.
37. Armour Forse R, Bramble JD, McQuillan R. Team training can improve operating room performance. *Surgery* 2011;150:771–8.
38. Paige JT, Garbee DD, Kozmenko V, et al. Getting a head start: high-fidelity, simulation-based operating room team training of interprofessional students. *J Am Coll Surg* 2014;218:140–9.
39. ANTS: A Behavioural Marker System for Rating Anaesthetists' Non-Technical Skills. Available at: <http://www.abdn.ac.uk/iprc/ants/>. Accessed April 15, 2014.
40. NOTSS: Non-technical skills for Surgeons. Available at: <http://www.abdn.ac.uk/iprc/notss/>. Accessed April 15, 2014.
41. SPLINTS: Scrub Practitioners' List of Intraoperative Non-Technical Skills. Available at: <http://www.abdn.ac.uk/iprc/splints/>. Accessed April 15, 2014.
42. Rogers DA, Lingard L, Boehler ML, et al. Foundations for teaching surgeons to address the contributions of systems to operating room team conflict. *Am J Surg* 2013;206:428–32.
43. Piper LE. Addressing the phenomenon of disruptive physician behavior. *Health Care Manag (Frederick)* 2003;22:335–9.
44. Eberlein TJ. Shaping a modern academic department of surgery: honoring the past; focusing on the future. *Ann Surg* 2012;256:395–401.