Notable Grand Rounds
of the
Michael & Marian Ilitch
Department of Surgery

Wayne State University
School of Medicine

Detroit, Michigan, USA

Alex Lynch, DO

THE NONTECHNICAL SKILLS OF SURGERY: THE ROLE OF LEADERSHIP AND COMMUNICATION IN SURGICAL PERFORMANCE

April 16, 2025

About Notable Grand Rounds

These assembled papers are edited transcripts of didactic lectures given by mainly senior residents, but also some distinguished attending and guests, at the Grand Rounds of the Michael and Marian Ilitch Department of Surgery at the Wayne State University School of Medicine.

Every week, approximately 50 faculty attending surgeons and surgical residents meet to conduct postmortems on cases that did not go well. That "Mortality and Morbidity" conference is followed immediately by Grand Rounds.

This collection is not intended as a scholarly journal, but in a significant way it is a peer reviewed publication by virtue of the fact that every presentation is examined in great detail by those 50 or so surgeons.

It serves to honor the presenters for their effort, to potentially serve as first draft for an article for submission to a medical journal, to let residents and potential residents see the high standard achieved by their peers and expected of them, and by no means least, to contribute to better patient care.

David Edelman, MD
Program Director
The Detroit Medical Center

and

Professor of Surgery
Wayne State University School of Medicine

The Nontechnical Skills of Surgery: The Role of Leadership and Communication in Surgical Performance

Alex Lynch, DO

Chief Resident
The Detroit Medical Center

Grand Rounds presentation

Michael & Marion Ilitch Department of Surgery
Wayne State University School of Medicine

April 16, 2025

Introduction

This paper aims to explore the role of leadership and communication in surgery, examining how these nontechnical skills impact patient outcomes, team dynamics, and overall performance in the operating room. While technical expertise remains the cornerstone of surgical practice, the capacity to lead effectively, communicate clearly, and build cohesive teams is increasingly recognized as essential for the modern surgeon.

The Divergence Between Medicine and Business in Leadership Training

During my undergraduate studies, I pursued a minor in Leadership Studies—a decision initially motivated by the desire to strengthen my medical school application. Surprisingly, I have found this background more practically useful in daily clinical practice than my degree in molecular and cellular biology. This realization underscores a broader observation: leadership development is approached very differently in business compared to medicine.

In business, leadership training begins early, often during onboarding, and is treated as a core competency. It is essential for promotion and supported by structured programs such as MBAs, executive coaching, and team-building retreats. Development is continuous and proactive, with an emphasis on emotional intelligence, communication, delegation, and 360-degree evaluations (input from supervisors, colleagues, and clients).

In contrast, medical training relies heavily on ad hoc, on-the-job learning. Transitions in responsibility—such as from junior to chief resident—occur without formal preparation. Leadership is typically viewed as secondary to clinical skills, and structured curricula in medical school or residency are rare. Education often occurs retroactively, triggered by problems rather than preventive intent. Surgical culture tends to emphasize hierarchy, autonomy, and individual decision-making. Feedback mechanisms are informal and rarely focus on leadership behavior or team impact.

Yet surgery is inherently collaborative. Even though a surgeon may perform the technical work, the procedure always involves a team: anesthesiologists, nurses, scrub techs, residents, first assists, and sometimes device representatives.

Leadership in such settings is indispensable—not only for efficient teamwork but also for navigating high-stress scenarios that inevitably arise in the OR.

Core Attributes of Surgical Leadership

Effective surgical leadership requires several key traits, particularly in high-stakes environments. These include:

- **Confidence** – Exemplified by mentors such as Dr. Mansour, whose arm tattoo reads, "Sometimes right, sometimes wrong, but never doubtful."
- **Decisiveness** – The ability to make timely decisions under pressure.
- **Clear communication** – Essential for avoiding errors and maintaining team coordination.
- **Emotional intelligence** – Awareness and management of one's own emotions and those of others.
- **Humility** – The capacity to recognize limitations and listen to others.
- **Mentorship** – Supporting the development of junior colleagues and staff.

The cultivation of these attributes transforms surgeons into more than just technicians; it allows them to elevate the teams they lead and the outcomes they achieve.

Leadership Styles in Surgery

Understanding different leadership styles is essential for surgeons who must adapt to diverse clinical scenarios and team dynamics. Several distinct leadership models are observable in surgical settings, each with its own strengths and limitations.

Autocratic Leadership

Autocratic leaders make decisions unilaterally and expect compliance without input. This style may be effective in high-pressure or time-sensitive situations where decisiveness is critical but can stifle creativity and collaboration during routine or elective procedures.

Surgeons such as Dr. Michael DeBakey exemplified this style. Renowned for his technical brilliance, DeBakey demanded perfection and exerted tight control over his surgical team, to the point of dismissing assistants for minor infractions, such as cutting a suture to the wrong length. Similarly, Dr. Denton Cooley—who performed the first artificial heart implantation—acted independently without consulting his colleagues, including utilizing a pump developed in Dr. DeBakey's lab without prior approval. This led to both innovation and controversy. The patient ultimately died of complications, and the episode caused a rift between the two pioneers that lasted four decades.

Autocratic leadership also thrives in trauma and military surgery, where rapid decision-making and firm direction are paramount.

Democratic (Participatory) Leadership

Democratic leaders solicit input from team members, promoting collaboration and inclusivity. While this approach may slow decision-making during emergencies, it is ideal for complex cases requiring multidisciplinary expertise.

Tumor boards represent a model of democratic leadership, incorporating perspectives from oncologists, radiologists, pathologists, and surgeons. Dr. Atul Gawande is a noted advocate for this style. His introduction of surgical safety checklists—adapted from aviation—revolutionized surgical protocol by encouraging open dialogue and empowering all team members to speak up when concerned. This model fosters a culture of shared responsibility and safety.

Another example is Dr. Paul Farmer, co-founder of Partners in Health, who worked to ensure that every voice—from physicians to community health workers—was valued. His leadership emphasized equality and patient advocacy, grounded in his belief that "the idea that some lives matter less is the root of all that is wrong with the world."

Transformational Leadership

Transformational leaders inspire and empower their teams to exceed expectations. They foster innovation, mentorship, and long-term development, though this style may be less effective during immediate crises that demand rapid action.

Dr. Devi Shetty, founder of Narayana Health in India, exemplifies this approach. A distinguished cardiac surgeon—who once operated on Mother Teresa—Dr. Shetty aimed to address the unmet cardiac needs of millions in India. By streamlining systems and reducing the cost of bypass surgery from $50,000 to $1,500, he not only expanded access but also transformed the landscape of healthcare delivery in the region.

Closer to home, transformational leadership is embodied by surgeons like Dr. Heather Dolman. Her style encourages residents to step into decision-making roles. For example, she routinely refers to her chief residents as "junior attendings," challenging them to think and act like independent surgeons. In the OR, she will often allow a senior resident to lead a case while offering minimal intervention, creating an environment of empowerment and growth.

Dr. Donald Weaver also demonstrates transformational leadership through a more subtle approach. Described almost as a "surgical Jedi," Dr. Weaver sits quietly in the OR as residents work through complex procedures. Only when they reach an impasse does he intervene, guiding them just past the barrier and then stepping back. This minimal intervention allows maximal learning while preserving patient safety.

Laissez-Faire Leadership

Laissez-faire leaders take a hands-off approach, allowing team members to make decisions independently. This style can foster autonomy and confidence in experienced teams but may result in poor oversight, especially in high-risk or unfamiliar cases.

Laissez-faire leadership is most effective when working with highly skilled and well-coordinated surgical teams. It is commonly observed among senior surgeons in private practice or academic settings who trust their established OR teams or experienced physician assistants. These teams often operate efficiently with minimal guidance, allowing surgeons to delegate more freely.

Historically, Dr. William Halsted, known as the father of modern surgical training, embodied this style. While he revolutionized the structure of surgical education, Halsted rarely engaged in hands-on teaching, believing instead in creating an environment where trainees could develop within a structured system. The strength of this model lies in its capacity to encourage independent growth, though it risks inconsistency and error when applied to less experienced teams.

A contemporary illustration of this model is seen in cases where senior residents or fellows are allowed to run operations independently. For example, Dr. Edelman and Dr. Weber at our institution have demonstrated this approach, confidently supervising procedures performed by trusted trainees. These relationships are grounded in mutual respect, experience, and the assurance of patient safety.

Servant Leadership

Servant leadership centers on prioritizing the needs of the team and patients, emphasizing mentorship, emotional support, and collaborative growth over authority. This style is highly effective for fostering long-term development and sustaining a compassionate, team-oriented culture—but it demands considerable emotional energy and time.

Many of our own faculty exemplify servant leadership. Dr. Diebel is a striking example. After operating on a hernia patient at Detroit Receiving Hospital, he was contacted by the PACU at Sinai-Grace later that day. The patient had not urinated and lacked transportation home. Rather than admit the patient, Dr. Diebel picked him up himself—still in a hospital gown and clutching a urinal jug—and drove him home on his way to trauma call. The anecdote ends humorously with the patient urinating on his front lawn, but it speaks volumes about a surgeon who places patient welfare above convenience.

Dr. Isaacson offers another lens on servant leadership. After a resuscitative thoracotomy in the trauma bay ended in the patient's death, he gathered the team—medical students, residents, and staff—to debrief. For some, it was their first time witnessing a death. He made time to check in emotionally, and then individually addressed each resident's performance, identifying both strengths and areas for growth. By attending to both the emotional and educational needs of his team, Dr.

Isaacson modeled a kind of leadership that strengthens resilience and cohesion.

Finally, Dr. Edelman—our program director—serves as the archetypal servant leader. Fielding the daily concerns and questions of scores of residents, he provides structure, support, and advocacy for trainees while modeling professionalism and empathy. His leadership is both patient- and learner-centered.

Why Leadership Style Matters in Surgery

Nontechnical skills, particularly leadership and communication, have a profound impact on the surgical environment. Effective leadership fosters trust, coordination, and resilience among OR teams, improving both patient safety and surgical efficiency.

Impact on Team Performance and Morale

Surgical leadership is a cornerstone of team performance. A well-led operating room functions as a cohesive unit, even under stress. Leaders who cultivate a supportive atmosphere—marked by trust, mutual respect, and open communication—tend to experience better team dynamics, higher job satisfaction, and lower stress levels across the team.

Supportive leadership also increases psychological safety: the assurance that individuals can speak up, admit uncertainty, or express concern without fear of reprimand. In such environments, team members are more likely to report potential errors, share feedback, and contribute to decision-making. This open culture reduces preventable complications and fosters a more fulfilling professional experience for all participants.

Impact on Patient Safety

Patient safety improves when surgeons lead with clarity, confidence, and responsiveness. High-stakes, high-acuity procedures demand quick thinking and calm authority. A leader's tone and behavior often set the emotional and operational tempo of the room.

For example, consider a trauma case at 2 a.m. A resident believes there is still a surgical sponge unaccounted for, despite the scrub tech affirming that the count is correct. If the resident hesitates to raise the concern due to fear of retribution or being dismissed, the environment is failing. A retained sponge is a "never event"—something that should never occur. If even one team member does not feel empowered to speak up, the consequences can be catastrophic.

Transformational and democratic leadership styles can reduce this risk by fostering a culture in which every voice matters. When team members believe that their contributions are valued, they are far more likely to express critical concerns in the moment, even to those above them in hierarchy.

Impact on Surgical Education and Mentorship

Leadership also plays a crucial role in the development of junior surgeons. Effective mentors do not merely instruct; they create space for learners to struggle, decide, and grow. This can be seen in the way a senior surgeon adapts their leadership style based on the complexity of the case or the experience level of their team.

For instance, Dr. Tobon modulates his leadership between autocratic and transformational styles. In complex cases—such as a recent Roux-en-Y hepaticojejunostomy for bile duct injury—he takes the reins and provides direct, decisive leadership. But during routine robotic inguinal hernia repairs, he steps back, offering subtle guidance and efficiency cues while allowing residents to lead the case. This adaptability creates a tailored learning environment that builds both skill and confidence.

The key takeaway is this: leadership is not a fixed trait tied to personality. It is a set of skills that can be developed and flexibly applied to meet the needs of the moment. Surgeons are leaders not only because of their titles but because others look to them—especially in moments of uncertainty. Developing the awareness and ability to meet these moments with skill and composure enhances every dimension of surgical practice.

Communication and Conflict in the Operating Room

While technical skills have long been the focus of surgical training, recent studies underscore the

importance of communication as a key nontechnical competency—especially in high-stress, high-stakes environments like the OR. Tension and disruptive behavior during surgery are often attributed to difficult personalities or authoritarian leadership. However, a deeper look reveals that situational factors may be the primary culprits.

Study on Tension and Communication

A notable observational study1 conducted at two university hospitals aimed to explore the causes and effects of "tense communication" in the operating room. The researchers observed 137 surgeries involving 30 surgeons, coding interactions that included any communication delivered in a negative tone—ranging from subtle dismissiveness to overt aggression.

Tension was categorized based on its origin:

- **Task-related tensions**: arising from the demands of the procedure itself, such as difficult anatomy, unexpected complications, workflow interruptions, or environmental distractions like noise.
- **Coordination-related tensions**: stemming from breakdowns in teamwork, such as poor collaboration, delays, miscommunication, or perceived incompetence among residents or staff.

The study found that:

- 97% of the time, the source of negative communication was the main surgeon.
- The most frequent targets were residents and scrub techs—those physically closest to the surgeon and most directly involved in the procedure.
- Over 70% of the tension incidents were triggered by coordination issues (e.g., instruments not ready, repeated instructions not followed).
- Less than 20% were related to the technical complexity of the task.
- There was almost no correlation with personal dislike or interpersonal conflict.

Interestingly, there were no major disagreements about surgical technique or decision-making—just frustration with the flow of operations and teamwork hiccups.

The Fundamental Attribution Error

These findings highlight a common misjudgment known as the "fundamental attribution error": the tendency to attribute another person's actions to their character rather than their circumstances. In the OR, this means assuming that tension or harsh communication results from a surgeon's personality, rather than from the stressors of a complex environment where time is critical and precision is paramount.

This bias is amplified by professional silos. In one related experiment, surgeons, anesthesiologists, and nurses watched the same video clips of a simulated OR scenario. Each group consistently judged members of the other professions as more responsible for any breakdowns in teamwork. The takeaway: our perception of tension is often distorted by role-based biases.

The original study concluded that 76% of the communication breakdowns were attributable to situational stressors—only 24% to individual traits. These findings challenge the stereotype of the "difficult" surgeon by reframing incivility as a symptom of a strained system rather than flawed character.

Implications for Training and Team Culture

If we accept that most OR tensions stem from situational triggers, then improving teamwork and communication must become a shared responsibility. Rather than tolerating repeated conflict as a necessary evil of surgery, programs should actively integrate communication training into surgical education.

For example, consider a common friction point: during skin closure, a resident requests a needle

---

[1] Keller S, Tschan F, Semmer NK, Timm-Holzer E, Zimmermann J, Candinas D, Demartines N, Hübner M, Beldi G. "Disruptive behavior" in the operating room: A prospective observational study of triggers and effects of tense communication episodes in surgical teams. PLoS One. 2019 Dec 12;14(12):e0226437. doi: 10.1371/journal.pone.0226437. PMID: 31830122; PMCID: PMC6907803.

driver but forgets to ask for forceps. If this omission frustrates the attending every time, it should be addressed proactively in training—perhaps by teaching scrub techs to anticipate that both tools are needed together, or by coaching residents on standard closure routines.

Likewise, residents should resist the impulse to write off a faculty member as "mean" or "abrasive." If the attending becomes irritable when a task is delayed, it may signal that surgical flow has been disrupted—something within the resident's control to improve through preparation and rehearsal.

Recognizing these tensions as environmental rather than personal opens the door to constructive interventions, targeted coaching, and a more supportive OR culture.

Barriers to Leadership Training in Surgical Education

Despite mounting evidence that leadership and communication skills significantly affect surgical outcomes, formal training in these areas remains rare in most residency programs. Several cultural, structural, and psychological barriers help explain this gap.

Cultural Barriers: Hierarchy and Identity

Surgical culture has long been rooted in hierarchy. Seniority is assumed to confer leadership competence, even in the absence of formal training. As a result, junior surgeons often believe that leadership is something they will "just learn" on the job, rather than a distinct skill set that requires intentional development.

The traditional "surgical personality"—confident, decisive, and often authoritative—also clashes with the qualities emphasized in leadership training, such as emotional intelligence, active listening, and humility. Traits like vulnerability and openness to feedback are frequently perceived as soft or secondary, reinforcing the idea that technical prowess is the only metric of surgical excellence.

This mindset discourages surgeons from seeking out leadership development and creates stigma around the very concept of needing such training. In high-stakes, high-performance environments, showing any perceived weakness can be professionally risky.

Structural Barriers: Time, Priorities, and Institutional Support

Surgical training is time-intensive. Residents and attendings alike are inundated with responsibilities ranging from clinical care and operative volume to academic research, teaching, and administrative duties. In this environment, leadership development is rarely prioritized. Without protected time, dedicated resources, or institutional incentives, most surgeons view it as a luxury they cannot afford.

Moreover, leadership training is often perceived to offer a low return on investment. In contrast to technical courses, which provide immediate, tangible gains (e.g., proficiency in a new surgical device), the benefits of leadership training—better team cohesion, improved communication, long-term cultural change—are harder to quantify. As a result, they are frequently deprioritized.

The problem is compounded by the lack of visible role models. When senior surgeons dismiss or ignore leadership training, it signals to junior staff that these skills are unnecessary. Without champions who visibly embody and advocate for leadership development, the culture remains static.

Psychological Barriers: Vulnerability and Feedback Aversion

Leadership training often involves self-reflection, peer evaluation, and real-time feedback—all of which require vulnerability. In a high-stakes, high-performance environment like surgery, admitting uncertainty or emotional fatigue may be seen as weakness. This makes surgeons, particularly those early in their careers, reluctant to engage deeply with programs that expose their blind spots or challenge their confidence.

Even when formal feedback mechanisms are in place, they often avoid commenting on leadership behaviors. Traditional evaluations tend to focus on technical competence, case numbers, and medical knowledge. Rarely are residents or attendings given structured, meaningful feedback on how they communicate, lead a team, or handle conflict in the OR.

Strategies for Integration: Bringing Leadership Into Surgical Training

While these barriers are significant, they are not insurmountable. Several strategies can help normalize and institutionalize leadership development in surgery:

1. Align Leadership With Surgical Values

Programs can increase buy-in by framing leadership training in terms that surgeons already value: performance, safety, and efficiency. Rather than pitching leadership as a "soft" skill, it should be positioned as a force multiplier—something that makes good surgeons great by optimizing team function and reducing preventable errors.

2. Institutional Support and Incentivization

Hospitals and academic centers must prioritize leadership development. This includes allocating protected time, offering CME credit, and incorporating leadership milestones into promotion criteria. Institutional backing legitimizes the value of these skills and signals their importance to both residents and faculty.

3. Evidence-Based Justification

Surgeons are scientists at heart. Expanding the evidence base for leadership development—by linking it to patient outcomes, surgical efficiency, and staff satisfaction—can make a compelling case for its inclusion in training. Peer-reviewed data is one of the most effective tools for driving change in surgical education.

4. Integration Into Existing Frameworks

Leadership concepts can be embedded into current educational structures. For instance, Grand Rounds can include leadership modules; simulation sessions can involve crisis communication scenarios; and mock oral board exams can be expanded to test team orchestration during intraoperative emergencies.

An example scenario: a resident places a Veress needle and suddenly encounters massive hemorrhage. The technical aspect is obvious—but how does the resident communicate with anesthesia? What should the circulating nurse prepare for an open conversion? How do they keep the assistant focused under pressure? These are leadership moments that deserve structured attention.

A Call to Action: Leadership as Legacy

The best surgeons are not merely technical masters; they are leaders who elevate their teams, their patients, and the profession. As I prepare to leave Detroit for fellowship at Tulane in New Orleans, I reflect not only on what kind of surgeon I want to be, but on the legacy I hope to leave behind.

My goal is to master minimally invasive and robotic surgery. I plan to push myself until I reach the highest level of technical proficiency. But even if I become one of the best robotic surgeons in the country, that mastery alone will vanish the day I retire unless I have done something more.

If I focus only on perfecting technique, all my work ends with me. But if I develop myself as a leader—if I empower others, shape culture, and build stronger teams—then my influence can extend far beyond the individual cases I perform. I can help cultivate a new generation of surgeons who are not only excellent operators but also excellent mentors, communicators, and collaborators. That is the only kind of legacy that endures.

This is why leadership matters. It is not a nice-to-have. It is not optional. It is the foundation upon which everything else in surgery is built—safety, education, innovation, and sustainability. We owe it to ourselves, to our teams, and to our patients to take leadership as seriously as we take the scalpel.

To conclude, I want to thank the Wayne State surgery department for the training, mentorship, and opportunities I have received over the past five years. I am proud of what we've built and hopeful for what comes next. As I move forward, I carry with me not only the technical skills I've acquired, but also a deep conviction: that good surgeons save lives—but great surgeons build teams that save lives for generations to come.

* * *