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WHAT FACILITATES OR HINDERS TEAM EFFECTIVENESS IN ORGANIZATIONS?

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INTRODUCTION

The delivery of demonstrable clinical value and consistently good outcomes requires reliable systems of care and effective teamwork across the continuum of patient care. Effective teams are inherently necessary to achieve these goals—abundant evidence indicates that expert individuals delivering care "their way" leads to highly variable and suboptimal care.[1] One of the current cultural challenges is that the majority of healthcare practitioners were taught that individual, clinical excellence is the primary determinant of an effective healthcare delivery system.[2] The traditional and deep-seated belief that a group of expert individuals can come together without clearly agreed-upon norms or effective team behaviors and still provide flawless clinical care sustains a cultural dynamic in which it is difficult for clinicians to discuss inevitable human errors and near misses. This mindset also makes it hard to implement in healthcare high reliability principles that have been extensively applied in other high-risk industries.[3] A telling example of the current medical culture regarding error comes from Whiting's recent article describing the aftermath of a wrong site surgical procedure[4]:

> We recently had a near miss in our institution regarding wrong-side surgery when a knife hit skin on the wrong extremity. In the aftermath of this incident, the shaken surgeon was contrite and wanted to shoulder all of the blame for the episode. This surgeon did not grasp that his true failure was that he had failed to lead and establish a culture of safety and openness in his operating room (OR). He had not empowered those in his OR to speak up, he had not mastered the communication skills necessary to be a team leader, and he had not engaged in the processes and systems that might have prevented the incident. To him, surgical ownership meant "shouldering the load alone."

Achieving effective teamwork as the norm in a healthcare organization will require addressing these cultural legacies through defining effective leadership, reinforcing a culture of safety, embedding effective team behaviors, aligning reliable processes of care,

and creating a culture of continual learning and improvement.[5]

Effective Leadership and Organizational Climate

Organizational climate profoundly impacts the quality of teamwork. Leadership is the essential variable in setting the tone or culture within an organization, both positively and negatively.[6,7] Creating an environment in which people both expect and support excellent teamwork is critically important. Organizational leadership that places a clear and consistent emphasis on safety is far more likely to promote effective teamwork and safe-care. An excellent example of an organization committed to safe care and continually messaging the importance thereof is the Mayo Clinic, which anchors the clinical activity in "what is in the best interest of the patient?"[8]

Transparency around the issues of safety and avoidable harm is a very powerful driver of improvement. An excellent example of this leadership surrounds the Dana-Farber's actions following the Betsy Lehman case—a terrible tragedy in which a 38-year-old woman accidentally received a lethal overdose of chemotherapy. Through full and open disclosure, and standing up for the clinicians involved when the state of Massachusetts tried to take punitive action, leadership sent a very powerful message to the organization that helped maintain a highly collaborative culture and environment of continual learning and improvement.[9]

Leadership at multiple levels of an organization is essential for effective teamwork.

Senior leaders must be able to clearly articulate organizational values, consistently model the values espoused, and create clear accountabilities regarding specific behaviors. Based on his extensive experience in multiple industries, Krause argues that the most effective leaders define very specific behaviors that create value, hold organizational members accountable for those behaviors regardless of their position or role, and continuously strive to positively improve organizational culture.[10] Knowing what behaviors are valued within the organization, and specifically what risky and negative behaviors will not be tolerated is critically important. There also needs to be "one set of rules" that applies to everyone from the chief of staff to the housekeepers. Nurses often complain bitterly that physicians are allowed to chronically exhibit disruptive behaviors without any consequences, whereas nurses would be rapidly punished and even fired for similar behavior. If nurses are held accountable and physicians are not, the recurrent message to the nurses is, "They don't care about us, so why should we really believe leadership is committed to good teamwork?" Not surprisingly, saying one thing and doing another undermines team effectiveness.

It is also important that leaders provide consistent feedback. Acknowledgment of positive behaviors is always good, but timely—within hours of an incident—face-to-face feedback concerning abusive, disrespectful behavior is absolutely necessary to demonstrate that leadership is committed to a respectful environment in which teamwork can flourish.[11] Failing to act consistently and quickly allows risky behaviors to increase; creating an environment in which it is impossible to build and sustain high performance teams.[12]

Reflecting on the Mayo Clinic experience, an organization that codified teamwork a century ago in the principles enunciated by Charles and William Mayo,[13] Swensen noted:

> Medicine cannot become highly reliable as long as autonomy, steep hierarchy, blame, independence, and opaqueness characterize an organization's culture. A basic tenet of a culture of safety is acceptance of a core of standard work based on best practice; this must be the rule and deviations from it are appropriate and expected only for patient-centered reasons, not ones that are physician-centered.[14]

One of the inherent strengths of organizations that are highly effective in creating an organizational climate that supports excellent teamwork is that there is clear and consistent messaging as to the common goal teams continually work toward. In healthcare, when it is "all about the needs of the patient," the mantra of the Mayo Clinic, teamwork flourishes.[15] When the convenience and autonomy of the physicians trumps the needs of the patient, it is very hard for effective teamwork to be an inherent part of the culture. A provider-centric culture also has much more clinical variation resulting from clinicians "doing it their way" and more clinical risk.[16,17] Highly reliable care and effective teamwork

go hand in hand. Consistent execution of standardized processes requires strong cultural norms regarding how people should behave in teams. Leadership has profound influence on these factors. A valuable question within an organization that relates to autonomy and undermining teamwork comes from David Morehead, "What are the most dangerous behaviors you allow your physicians to engage in?"[18]

The strategic goals of senior leadership need to be clearly and succinctly communicated to front-line care providers, so that teams can align their efforts with those of the organization. It is critically important that senior leaders are also connected to the care process, and engaged in ongoing dialogue with both front-line providers and patients and their families. This has been found to have an effect on safety culture, which is a powerful driver of teamwork.[19] Contrary to the literature that highlights the importance of feedback,[20] Edmondson et al. found that communication alone was not enough to show front-line workers that leadership was clearly committed to a collaborative environment and supported ongoing improvement. Leaders should identify and resolve a smaller number of problems and address ongoing concerns in a manner visible to front-line staff, rather than highlighting many issues and fixing relatively few.[21]

Senior Leadership Engagement: Walk Rounds

By spending time in clinical care units, leaders have the potential to effectively reinforce teamwork norms. Leaders who spend time dialoguing with front-line staff about safety reinforce the message that safety and effective teamwork are organizational priorities. Similarly, the high reliability literature recognizes that those individuals closest to the work possess more expertise than do senior leaders.[22] Thus, leaders can gain valuable insight about problems by interacting with front-line staff.[23] Such interactions can positively influence the organizational climate for improvement as leaders gain perspective about problems faced by front-line staff and how to resolve them, and staff feel supported in their efforts.

Clinical Leadership

Effective clinical leaders are an essential factor in enhancing and embedding excellent teamwork. Teaching clinicians to be effective clinical leaders is a fundamental need in healthcare. The current model of medical education almost exclusively focuses on the acquisition of knowledge and technical skills, with little or no emphasis on the leadership skills that allow clinicians to effectively lead teams. Effective clinical leaders are mindful that every time they walk into the room, whether a primary care office or the intensive care unit (ICU), they have a profound impact on what it feels like to be in the room for the other team members. Setting the tone in an active, positive fashion every time through sharing the plan, inviting the other team members into the conversation for both their expertise and concerns, using their names, and explicitly reinforcing that if anyone has a concern during the care process, he or she must speak up, is essential for effective teamwork.[24] Two things happen through this process: bidirectional sharing of information and inquiry and, importantly, the leader flattens hierarchy and makes himself or herself more approachable. The hallmark of an effective leader is that he or she is always approachable and continually seeks input from other team members. Part of this process or skill set is the creation of psychological safety, a team climate in which team members feel safe to speak up.

A wonderful example of effective teamwork implementation and supporting a culture of safety and learning is Paul Uhlig and his team's work in cardiac surgery. Uhlig and his team systematically implemented effective team behaviors, standardized clinical processes to enhance predictability, and multidisciplinary rounding in the ICU with the patients and their families. The result was an environment that facilitated continuous learning and improvement. Uhlig's leadership style enabled any team member to offer suggestions and voice concerns. He also broadly empowered team members to lead, because he did not want the "king of the hill cardiac surgeon" driving the process. The open dialogue and standardized processes made it much easier for team members to know what was supposed to happen, so they became effectively cross-trained and could support and provide cross-checks to insure tasks were performed, whether in the team members' domain or not. Not only did clinical outcomes improve markedly, but both patient and staff perceptions of the care process also improved substantially. This work very nicely integrated the components of leadership,

safety culture, psychological safety, reliable care processes, and excellent teamwork.[25]

The positive and negative impact of clinical leaders was well illustrated by Edmondson et al. studying the implementation of minimally invasive cardiac surgery in 16 Massachusetts hospitals. Effective, collaborative teamwork with routine debriefing of cases, and a systematic process of feedback and learning that incorporated the expertise of all team members was the hallmark of the highest performing team. Interestingly, this team was led by a relatively new and junior cardiac surgeon who engaged the collective expertise of the team by debriefing every surgical case. The overall challenge was the implementation of a complex process that inherently required effective team collaboration and task coordination. Successful teams reflected what Heifetz would call adaptive leadership,[26] how to manage uncertainty and lead effectively at the same time. In contrast, another of the cardiac surgery teams was headed by a very experienced, classically hierarchical, senior physician who applied technical leadership—"We all know how to do this; if you all perform as well as I do everything will be fine"—and their learning curve lagged the high-performing teams.[27]

DeFontes' work incorporating perioperative briefings found that clear success factors for successful implementation were: (1) public commitment of physician leaders to the process; (2) active participation of all team members; (3) an ongoing process of learning as evidenced by multiple iterations of the briefing card over time; and (4) willingness of physician leaders to quickly intervene and deal with periodic resistance from individual physicians to reinforce "this is how we do it here."[28] The psychology literature indicates that when individuals publicly commit to the work, there is a greatly enhanced chance they will successfully support and reinforce the desired changes.[29] This clearly has implications for the successful implementation of enhanced teamwork. Rather than letting individuals in leadership roles sit in the room and nod their heads and shrug their shoulders, requiring public commitment is a far better strategy.

In an observational study of almost 300 surgical procedures, Mazzocco et al. found that within seconds the surgeon profoundly set the tone for teamwork on entering the operating room. Surgeons who engaged other team members, shared information, and invited them into the conversation set an active, positive tone that enhanced teamwork and made it easy for people to speak up. Conversely, surgeons who did not engage the team and pressured them to "hurry up, because I'm running late" or even criticized the team "for not being able to start a case on time" set a set a negative tone in which it was clearly harder to speak up. People tended to "keep their heads down," and poorer teamwork ensued. The study concluded that patients whose surgical teams exhibited less teamwork behaviors were at a higher risk for death or complications, even after adjusting for clinical risk.[30]

SAFETY CULTURE AND ACCOUNTABILITY

Leaders enable safety culture by focusing on the importance of safety and communicating that they believe it is a priority. A safety culture is also supported when leaders create an environment in which employees are empowered to speak up and act to resolve threats to patient safety. Psychological safety is reinforced through the behavior of senior and clinical leaders.[31,32] When leaders acknowledge and show appreciation for the contributions of other team members,[33] and make it safe for individuals to share their unintentional errors, the environment facilitates better teamwork.[34]

In a study of trauma teams, Klein et al. found the best leaders used "dynamic delegation," in which they afforded junior team members the opportunity to assume leadership roles based on the acuity of the clinical event and a combination of the leader's and junior team member's expertise and experience. Dynamic delegation provided protected "stretch opportunities" for junior leaders, in which learning was supported, but high-quality patient care remained paramount.[35,36]

Given that the majority of medical errors are derived from system flaws, and that the error chains that allow the multiple factors to progress and hurt patients are usually not obvious to the skilled clinicians (i.e., is transparent), why is there such hesitation to discuss these issues openly? Much of the resistance and fear stems from a culture that says highly trained practitioners trying hard will not make mistakes, and because the overwhelming majority of the time team

members do not know what the rules are when they do make a mistake. Having a clear algorithm or definition of how unsafe individuals are differentiated from skilled practitioners working in unsafe systems is quite important. A model derived from James Reason's Unsafe Act Algorithm[37] and David Marx's Just Culture model[38] results in being able to ask a short list of questions: Was the harm intentional? Was the individual knowingly impaired? Did the individual consciously decide to engage in an unsafe act—knowingly take on unacceptable risk? Did the caregiver make a mistake that individuals of similar and training would be likely to make under the same circumstances (substitution test)? Does the individual have a history of unsafe acts? This short list of questions provides a clear model of accountability and also tells providers what the rules are, so they feel safe to speak up so we can learn and continually improve.[39] This is essential for effective teamwork.

Culture has a profound impact on behavior and the ability to consistently deliver safe care. Safety culture lives at a clinical unit level and has to be measured as such. With more than five times more variation at the clinical unit level than at the hospital level, hospital level measurement will dilute out the profound insights that can be gleaned from the perceptions of the various caregivers in that particular unit. Accurately reflecting the various perceptions of different caregivers working together is essential.[40] Often physicians, higher in the hierarchy, perceive that "we have great teamwork, nursing input is well received, and everyone is comfortable speaking up and voicing a concern about a patient." What is critically important is whether other caregivers—the nurses, technicians, and other personnel—share the same perception. When caregivers have very positive, concordant views of their care area, the culture is much healthier, being part of the team is a more positive experience, and the teams are able to consistently deliver better and safer care.[41–43] Patients and their families pay close attention to the social dynamics among the care team and themselves, and they are quick to pick up on the level of teamwork and respect among the caregivers.

One of the early pieces of literature that examined the impact of safety culture is Knaus' multicenter study of critical care outcomes. In the higher collaboration units with enhanced teamwork, patients were far more likely to survive the same risk adjusted diagnosis than in units with poor safety culture.[44] Further evidence that highly collaborative cultures deliver better care comes from the work done to reduce central line infections across the state of Michigan. Before the Keystone project and the implementation of a central line insertion bundle and checklist, the aggregate measure of safety culture in 103 intensive care units was measured. As noted by Sexton, there was a wide range of perceptions of teamwork across these units, ranging from very poor to quite positive. Interestingly, 44% of the units in the upper one-third of teamwork scores were able to achieve the goal of no central line infections for 5 or more months, whereas only 21% of the units in the lower third of scores were able to achieve that goal. The most predictive question correlated with clinical outcomes was that caregivers felt comfortable speaking up when they were concerned about a patient.[45]

High-quality, unit level safety culture data allows the team to identify specific areas of cultural strength they can build on, and focus on specific areas of weakness or opportunities for improvement. Perceptions of leadership, comfort voicing a concern about a patient, conflict resolution, how positively nursing input is received, perceptions of teamwork, and how openly errors can be safely discussed are important aspects of safety culture. There is tremendous power in having individuals debrief their safety culture data and identify opportunities for measurable improvement.[46]

A critical care collaborative in Rhode Island found significant increases in safety culture scores and clinical outcomes after adopting a structured debriefing process, an essential behavior for high-performance teams (Table 2.1).[47,48]

A fundamental cultural norm with profoundly negative impact on teamwork is whether abusive disrespectful behavior is tolerated. If so, there is inherent risk that someone will be hesitant to speak up about a concern. Sadly, this behavior is all too common, and has been identified as a major source of avoidable harm and a primary factor in impeding good teamwork.[49] Rosenstein et al. found that significant numbers of operating room personnel had experienced overtly disrespectful behavior.[50] The American Association of Critical Care Nurses in their publication, *Silence Kills,* noted the extent of the problem and the impact on the care of critically ill patients.[51]

Table 2.1 Factors Enhancing Teamwork and Factors Inhibiting Teamwork

Effective Leadership—model the appropriate behaviors, set a positive tone, respectful	Poor Leadership—say one thing, do another, lack of respect
Clear organizational commitment to safety for patients and providers	Not clear a safe environment for patients and caregivers is the priority
Effective team behaviors—structured communication, critical language, psychological safety	Behaviors are variable, lack of consistency in how the team works together
Reliable clinical processes providing standard work and predictability	High degrees of clinical variation—"everyone does it their way"
Continual learning and improvement—items identified during debrief are captured, acted upon, and resolved	No consistent mechanism for learning and feedback—"we tell them and never hear back"

Sadly, there are all too many examples of where lack of psychological safety undermines teamwork and places patients at unacceptable risk. Blatt found that medical house staff spoke up only 14% of the time they observed an error and only 39% of the time in the presence of a known, specific opportunity to prevent patient harm.[52] The impact of poor safety culture and lack of psychological safety was explored in a pediatric cardiac surgical service line: "Many respondents felt unable to express disagreement and had difficulty raising safety concerns. Respondents admitted that errors occurred repeatedly, and that guidelines and policies were often disregarded."[53] A survey by the Institute for Safe Medication Practices examined intimidation in the workplace and its association with medication error: 49% of all respondents said intimidation had altered the way they handle order clarifications or questions about medication orders, 31% of respondents suggested or allowed a physician to give a medication the respondent felt was inappropriate, and 49% felt pressured to accept the order, dispense a product, or administer a medication despite their concerns. The result was that 7% of respondents reported that they had been involved in a medication error during the past year in which intimidation clearly played a role.[54]

A medical example reflecting the fragility of a culture and effective teamwork that is dependent on specific leaders is Robert's study of a pediatric ICU (PICU), in which two physician leaders promoted a high reliability environment by defining specific behaviors that enhanced teamwork and led to better clinical outcomes as measured by mortality, returns to the PICU, length of stay, and numbers of patients accepted in transport. They promoted effective teamwork by engaging and educating other team members with regard to assessment of clinical risk and appropriate responses, involving them in decision making, maintaining situational awareness, and enhancing predictability through standard work. They created a safety culture in which problem solving was the focus, not blaming individuals in the aftermath of errors or adverse events. Unfortunately, after the two physician leaders left, the PICU reverted to a traditional, hierarchical model and both the quality of care and the culture of the unit degraded measurably.[55]

EFFECTIVE TEAM BEHAVIORS

In the absence of effective teamwork, it is difficult if not impossible to consistently deliver safe, high-quality care. Helmreich, in observations in the operating room, noted that the absence of structured, effective teamwork led to numerous communication failures and "surprises" among members of the surgical team.[56] Having predictability and clear agreed-on practical tools and behaviors is essential for effective teamwork.[57] Communication and teamwork failures are a central factor in the large majority of medical errors. One study in emergency medicine found an average of 8.8 teamwork failures occur per case and judged more than half of the deaths and permanent disabilities that occurred avoidable.[58] In the world of cardiac surgery, one major and six minor errors are observed per case during complex cardiac surgery.[59] It is the ability of the team to detect these threats

early and mitigate them that profoundly affects clinical outcomes and team performance.

We see the ramifications of poor teamwork in medical surgical units, where lack of teamwork (i.e., the ability to articulate a common set of goals for the patient), leads to nurses trying to complete about 100 tasks lasting about 3 minutes each per 8-hour shift, with continual interruption and distraction.[60] Evanoff found on a large medical service that when asked what three things the patient needed to get better and go home; nurses, physicians, and patients could only articulate the same three goals about 30% of the time. In this study, the nurses and doctors had spoken to each other about 50% of the time each day by late afternoon.[61] Effective teamwork is not possible without a structured approach that gets all the team members on the same page as the goals of care for the patient. Briefings and standard guidelines greatly enhance teamwork and the care process. The amount of time nurses are taken away from the bedside for documentation and nonclinical work is a major factor in the quality of teamwork and care delivered. Hendrich et al. found that nurses spent more than one-third of their time on documentation, and less than one-third in direct patient care.[62] Arguably, effective teamwork can be seen as a very effective countermeasure for identifying and mitigating error during clinical care.

Effective Teamwork Tools and Behaviors

There are basic components of effective teamwork and communication: structured communication, effective assertion/critical language, psychological safety, situational awareness, and effective leadership behaviors. Structured communication relates to tools such as briefings, multidisciplinary rounds, huddles, using checklists, situational briefing models like Situation-Background-Assessment-Recommendation (SBAR) and debriefings. High-risk industries routinely use briefings to share the plan and "get everyone on the same page." Briefings are applicable in every care setting, from high-acuity interventional areas to a primary care office. In a procedural setting such as cardiology or surgery, the team can spend 1 minute briefing to both look broadly at the schedule for the day, anticipating needs, equipment, information, and specific skills. Now they have the "big picture" and can be proactive rather than reacting to events as they unfold. Additionally, the team can quickly and efficiently brief each procedure to insure everyone knows the plan, and has the necessary equipment, skills, medication, and resources to work effectively and deliver optimal care. Studies show that briefing can reduce avoidable delays, which are both frustrating and a waste of valuable resources.[63,64]

Building structure around briefings with checklists provides additional value. Examples include daily goals in intensive care and enhancing teamwork through a comprehensive safety program.[65] Use of a checklist in the Michigan Keystone initiative to eradicate catheter-related bloodstream infections provided clear structure that enhanced team behaviors. In every ICU there was a physician–nurse leadership dyad. This was a critical factor, because nurses were instructed to stop physicians who were not following the checklist during central line insertion. Knowing the correct steps in the procedure was important, but probably more important was the nurses' knowledge that if they asked someone to stop or conform to the checklist they would be backed up by a clinical leader immediately and the correct behaviors would be reinforced.[66,67]

Recent experience with the World Health Organization Surgical Checklist has shown clear clinical benefit and fewer surgical complications.[68] Devries and his colleagues, in a Dutch multicenter study, examined the impact of the SURgical PAtient Safety System (SURPASS) that incorporated 11 checklists across the patient's continuum of surgical care. The benefit was striking, as shown by a 30% reduction in surgical complications and almost a 50% reduction in mortality across a broad population.[69]

Debriefing is an essential tool for effective teamwork and an environment of continuous learning and improvement. Get the team together for 1 to 2 minutes and ask three questions: what did we do well, what did we learn, and what would we like to do differently the next time? This can be done at the end of a procedure, the end of a shift on a medical-surgical unit, or the end of the day in a medical office practice. It is critical to create a safe place to have the conversation. Effective debriefings are never judgmental or critical. If the leaders have concerns with someone's behavior or technical performance, that is a separate, individual conversation; it is never done publicly. The process of debriefing requires building trust

and psychological safety for learning. The role of the leader is to always keep the dialogue framed to the positive and geared toward learning. If the debriefing process does not feel safe, team members will very quickly become quiet, which not only leads to lost valuable opportunities to learn, but can also degrade teamwork more broadly. Two things are critical to the success of a debriefing process: (1) an environment rich with psychological safety, and (2) a systematic process to capture the information from the debriefing, take action, and provide feedback to the front-line staff who provided insights for the debrief. This is an area of fundamental need and opportunity within healthcare. Rarely are there effective mechanisms in place to capture information from front-line providers as a source of consistent learning and improvement. Building in effective debriefing can be done in any care environment. If done well, debriefing provides valuable insight into the opportunities and care failures that exist within an organization. This helps to guide leaders as to where to provide resources and engage clinicians not only to enhance the care process, but also where waste can be cut out of the system. The more that leadership understands the context in which front-line providers are providing care and the basic system failures they are working around, the greater the opportunity for improvement. High-performance healthcare organizations constantly work to learn about opportunities to not only provide better care, but also make the care process more efficient and reliable.

Effective assertion/critical language refers to a single phrase or word that when spoken everyone knows means "please stop and talk to me, and let's take a minute to insure we're doing the right thing for this patient." Often providers see things that are concerning or do not make sense but are hesitant to speak up for fear of looking dumb or offending another team member. Having one clear term that everyone has agreed to makes it much easier to speak up. A very effective term that came out of Allina Hospitals in Minnesota is, "I need a little clarity." Also in a culture in which people keep score by knowing the answers and being competent, asking for "clarity" is a very neutral request and is not perceived as questioning anyone's judgment or skills.[70]

Effective leaders always set a positive, active tone within seconds of the team coming together. They also share the plan of care and continuously invite the other team members into the conversation both for their expertise and to voice concerns. This results not only in a bidirectional sharing of information, but actively reduces the inherent power distance between the leader and the other team members. Large power distances are dangerous, making it harder for people to speak up. Effective leaders are always approachable because they have actively worked to reduce power distance.

The Role of Teamwork Training in Building and Sustaining Effective Teams

Effective teamwork training must be multidisciplinary and interactive, with physicians playing an active role. As team members must interact and use agreed upon tools and behaviors, the only way to ensure they have procedural knowledge and social agreement is to have them learn and practice together. Procedural knowledge means, "I know how to do a briefing because we have done one" and social agreement speaks to the fact that "I know how to use these tools because you and I have agreed how we're going to use them." Multidisciplinary learning and practicing together addresses both of these important elements. Because effective patient care is a team function, it is very hard to learn without structured team interaction. Kaiser Permanente, in their systematic work in perinatal safety, used three levels of training: (1) multidisciplinary effective communication and teamwork training, (2) the teaching of reliable clinical processes in an interactive, multidisciplinary environment—how to interpret, communicate, and act in response to specific fetal heart rate tracings, a systematic approach to obstetrical emergencies such as shoulder dystocia, and responding to emergencies such as fetal bradycardia; and (3) simulation training in which teams could practice scenarios on their clinical units. The learning was that the simulation experience cemented the other components together and sustained these behaviors in clinical practice.[71]

Lockwood's experience with perinatal team training and standard processes demonstrated a 60% reduction in adverse events and claims.[72] Within the Veterans Healthcare system, which has a very robust and systematic approach to team training including clear leadership designation, safety culture measurement, clinicians teaching multidisciplinary groups

and metrics. Neilly et al. demonstrated an 18% reduction in mortality post surgical team training.[73] Both of these studies speak to the importance of having a formalized process and infrastructure of team training and support within organizations to be successful and sustain the gains. Paull examined the factors that predicted successful implementation of surgical team behaviors, and not surprisingly found that assigning a nurse leader to own and manage the process was a critical success factor.[74]

An Environment of Continuous Learning: Reliable Processes

Having reliable clinical processes enhances team performance by increasing predictability. Knowing what the team is seeking to achieve and being able to compare against a clear process or goal is very helpful. Having predictable processes allows the team to have earlier recognition that they are going the wrong direction or making errors. It also allows teams to improve performance, as they have metrics to benchmark against. Having predictability within the care process allows team members to proactively work to solve problems and save their mental energy for managing uncertainty in the care process. Therefore, reliability and predictability not only make the work easier and the teamwork better, but also support collaboration and process improvement.

A surgical observation study highlights the negative impact on teamwork when there is not an effective way to coordinate workflow and enhance predictability. During 10 general surgical cases, there were 19 intraoperative delays, 30 instances of uncertainty among the care team, the circulating nurses left the operating room an average of 33 times per case, and the observers felt every surgical case was affected with regard to teamwork, safety, and operational performance.[75] By contrast, Makary et al. demonstrated that the use of perioperative briefings reduced intraoperative delays in surgery 31%, and the surgeon's perception of avoidable delays 82%.[76] Greenberg et al. studied the entire spectrum of surgical care, not just intraoperative care, and identified communication breakdowns during surgeon communication with other caregivers. They recommended defined triggers that mandate communication with an attending surgeon, structured handoffs and transfer protocols, and standard use of read backs.[77]

Clear indications or triggers were recently implemented in the major Harvard hospitals in response to surgical complications. When postoperative patients experienced the significant complications of unanticipated ICU admission, hemodynamic instability, intubation with ventilatory support, unanticipated transfusion, or required an unplanned procedure, the resident physicians were required to call the attending surgeon. A forcing function that requires the communication to occur day or night drives the team to work toward the best interest of the patient, and creates the psychological safety so the call is made. Instead of possibly being perceived as an indication that the resident physician is incapable of dealing with the problem, now the conversation is, "I am required to call you. How can we best take care of this patient's problem?"[78]

In obstetrics, having clear guidelines and systematic approaches to common, high-risk problems such as postpartum hemorrhage and shoulder dystocia have been shown to significantly reduce harm.[79,80] In the units that practice intrapartum drills, when faced with an emergency they will describe "we just go into drill mode. We all know what to do and what's going to happen. We can work interchangeably because we know what's supposed to happen."[81]

SUMMARY

We have described the factors within organizations that either support and enhance effective teamwork or make it very difficult. High-quality leadership at both a senior and clinical level, a culture of safety in which individuals are comfortable speaking up and voicing concerns, an organizational climate that acts on the concerns of front-line providers, and structured, agreed-on norms of team behavior are all essential factors.

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