Building team briefing cycles in healthcare: A full-spectrum approach

Michael A. Rosen, Eduardo Salas
Department of Psychology, and
Institute for Simulation and Training
University of Central Florida
Orlando, FL
mrosen@ist.ucf.edu; esalas@ist.ucf.edu

Shad Deering
Andersen Simulation Center
Madigan Army Medical Center
Ft. Lewis, WA
Shad.deering@us.army.mil

Heidi B. King
Office of the Assistant Secretary of Defense
(Health Affairs)
TRICARE Management Activity
Arlington, VA
Heidi.King@tma.osd.mil

ABSTRACT

Across domains, high performing teams are characterized by a cycle of pre-brief, performance, and debrief. This cycle helps to maximize performance outcomes in the performance episode at hand by preparing team members for what is to come and facilitating a shared understanding of roles, goals, and the situation. This cycle also enables teams to continuously learn from experience and consistently improve over time from one performance episode to the next. However, systematically building this routine in teams which do not already engage in it can prove challenging especially in complex domains such as healthcare. To address this challenge, this paper provides an overarching framework, process, and recommendations for building a discipline of team briefing. Specifically, in this paper, we discuss a four component approach to creating and maintaining this capacity in teams. At the core of this approach is training interventions using information, demonstration, and practice (i.e., simulation) based delivery methods to build the core knowledge, skill, and attitude competencies underlying effective prebriefs and debriefs. These methods are used to build the fundamental knowledge, skills and attitudes underlying effective team briefing. However, transitioning this behavior from the relatively well-structured training environment to a less-structured work environment requires additional strategies. Consequently, structured tools such as checklists and protocols can help to scaffold or support team briefs. Additionally, systematic evaluation of team briefings and coaching are necessary to ensure that team interaction during the structured briefs is effective. In sum, this paper presents a framework for the major categories of interventions necessary to systematically build a cycle of pre-brief, performance, debrief in healthcare teams. Examples from military and civilian healthcare will be provided along with practice-based recommendations and lessons learned for implementing each strategy.

ABOUT THE AUTHORS

Michael A. Rosen, M.A., is a doctoral candidate in the Applied Experimental and Human Factors Psychology program at the University of Central Florida and has been a senior graduate research associate at the Institute for Simulation and Training since the fall of 2004 where he won the student researcher of the year in 2006. His research interests include individual and team decision-making and problem solving, human-computer interaction, performance measurement, and simulation-based training in high-stress high-stakes domains such as healthcare and the military. He is the 2009 co-recipient of the M. Scott Myers Aware for Applied Research in the Workplace from the Society for Industrial and Organizational Psychology awarded for the development of team decision making training for Explosive Ordinance Disposal teams.

Eduardo Salas, Ph.D., is Trustee Chair and Professor of Psychology at the University of Central Florida where he also holds an appointment as Program Director for the Human Systems Integration Research Department at the

Institute for Simulation and Training. Previously, he was the Director of UCF's Applied Experimental & Human Factors Ph.D. Program. Before joining IST, he was a senior research psychologist and Head of the Training Technology Development Branch of NAWC-TSD for 15 years. During this period, Dr. Salas served as a principal investigator for numerous R&D programs, including TADMUS, that focused on teamwork, team training, decision-making under stress and performance assessment. Dr. Salas has co-authored over 300 journal articles & book chapters and has co-edited 19 books. His expertise includes assisting organizations in how to foster teamwork, design and implement team training strategies, facilitate training effectiveness, manage decision making under stress, and develop performance measurement tools. Dr. Salas is a Fellow of the American Psychological Association, the Human Factors and Ergonomics Society, and a recipient of the Meritorious Civil Service Award from the Department of the Navy.

Shad Deering, M.D., is a board certified Maternal Fetal Medicine Staff Physician at Madigan Army Medical Center in Tacoma, Washington. He is also the Medical Director for the Andersen Simulation Center and the Chairman of the Army Central Simulation Committee. He is a Fellow of the American College of Obstetricians and Gynecologists and Society of Maternal Fetal Medicine. He has written numerous articles on the use of simulation training in obstetrics and has worked to implement teamwork training at multiple institutions and in a deployed combat support hospital.

Ms. Heidi King, MS, FACHE is the Acting Director for the Department of Defense (DoD) Patient Safety Program and serves as Director of the Healthcare Team Coordination Program in the Office of the Chief Medical Officer for Health Affairs of TRICARE Management Activity, which serves 9.2 million beneficiaries. Ms. King is collaborating with the Agency for Healthcare Research and Quality (AHRQ) on the development of specifications for medical team training, effective coaching and implementation strategies, and ongoing measurement and evaluation. She was the lead architect in the development of award-winning TeamSTEPPS(tm) (Team Strategies and Tools to Enhance Performance and Patient Safety), an evidence-based system aimed at optimizing patient outcomes and promoting a culture of team-driven care. On behalf of the DoD, Ms. King co-directs the inter-agency expansion of TeamSTEPPS in the civilian sector through a collaborative National Implementation project with the Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ). As well, Ms. King established 6 Team Resource Centers (TRCs)--all DoD Centers of Excellence for the validation, proliferation, ongoing research and development of medical team simulation to prevent harm. TeamSTEPPS resources have been adopted by both military and non-military organizations internationally, with translations in several different languages. Ms. King is a recipient of the distinguished Office of the Secretary of Defense Medal for Exceptional Civilian Service and the 2009 National Patient Safety Foundation Chairman's Medal in recognition of emerging leadership in the patient safety field for inspiring and leading change thru improvement interventions, while creating a culture of respect, openness, learning, and team dynamic.

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INTRODUCTION

In recent years, Military and Civilian Healthcare Systems have begun a long term journey of cultural change. This change involves a shift from highly variable processes that allow for the emergence of latent errors to a system characterized by highly reliable processes that greatly reduce the likelihood of errors, adverse events, and patient harm. This journey began in earnest with the release of the seminal 'To Err is Human' report from the Institute of Medicine (IOM; 1999) which brought widespread attention to the scale of the patient safety problem in healthcare. Among other things, this report identified improving the quality of teamwork as a major strategy for moving healthcare systems towards a new and acceptable level of safety and reliability. While much progress has been made in the development and implementation of team training interventions for healthcare in the past decade, a recent follow on to the IOM report suggests that not much has changed in terms of overall levels of patient safety across the healthcare system as a whole (Consumers Union, 2009). If this general lack of progress over the past ten years is accurate, efforts must be redoubled and new approaches developed, implemented, and evaluated to improve the effectiveness of patient safety initiatives.

In the case of team training for healthcare, much is known about the what constitutes an effective training program in terms of the content (i.e., the teamwork competencies to be trained) and methods of delivery (i.e., the use of multiple strategies including simulation). However, the primary challenge is not creating team members with the requisite knowledge and skill, but ensuring that what is learned in training transfers to and is sustained in the actual clinical environment. Transfer and sustainment are general concerns in training, but, as described later, there are unique challenges for training teamwork in healthcare. These challenges must be addressed if healthcare is to reach the goals set out for it of becoming a high-reliability and safety conscious system.

In order to address this need, this paper outlines four categories of strategies that can be combined to ultimately increase the transfer and sustainment of teamwork behaviors in the healthcare system. This includes team training interventions such as the use of simulation-based training (SBT), structured tools that scaffold teamwork behavior (i.e., checklists), systematic evaluation of teamwork behaviors, as well as coaching interventions. These techniques are not novel in many senses, but careful and deliberate application of these four approaches in a concerted manner can address many of the difficulties involved in transfer and sustainment of teamwork behaviors in healthcare that each individually does not. To describe this potential, this paper has three specific goals. First, we clearly describe why teamwork is critical to healthcare and why team training is a necessary yet insufficient method for reaching increased team performance. We also describe the importance of the brief → performance → debrief cycle to team performance, why it offers a large opportunity for improving teamwork in healthcare, and the rationale for why it is the focus of this paper. Second, we describe each component of the four strategies involved in the 'full-spectrum' approach proposed here as well as supporting literature for each. Third, we present a set of practical tips for

implementing these strategies developed over several experiences implementing these strategies in military and civilian systems.

WHY TRAIN TEAMWORK IN HEALTHCARE?

Teamwork matters in healthcare. Approximately 70% of root cause analyses of sentinel events conducted by the Joint Commission reveal breakdowns in communication as a primary contributing factor (Joint Commission, 2006). Other retrospective reviews of patient safety data from a variety of other sources provide converging evidence that problems with communication and teamwork are frequently involved in patient safety events (e.g., Suresh, Horbar, Plsek, Gray, Edwards, Shiono, Ursprung, Nickerson, Lucey, & Goldman, 2004; El-Dawlatly, Takrouri, Thalaj, Khalaf, Hussein, & El-Bakry, 2004; Provonost, Thompson, Holzmueller, Lubomski, Dorman, Dickman, Fahey, Steinwachs, Engineer, Sexton, Wu, & Morlock, 2006). These findings are not surprising given the strong scientific research indicating that teamwork plays a large role in the effectiveness of performance outcomes across a wide range of domains (Lepine, Piccolo, Jackson, Mathieu, & Saul, 2008; Kozlowski & Ilgen, 2006), particularly those involving high levels of time pressure, stress, and complexity as is frequently present in healthcare. Additionally, there is a growing body of scientific literature linking teamwork to important safety issues and other outcomes in healthcare (for a review, see Manser, 2009). Just as there is strong evidence that teamwork improves outcomes, there is compelling science indicating that team training (in a variety of forms) is effective at improving teamwork behaviors and consequently team performance outcomes (Salas, DiazGranados, Weaver, & King, 2008). A recent meta-analysis estimates that approximately 20% of performance outcomes can be accounted for by team training interventions (Salas, DiazGranados, Klein, Burke, Stagl, Goodwin, & Halpern, 2008). This has the potential to drastically impact patient outcomes (e.g., a 20% drop in adverse event rates would be major progress towards a safer system).

Challenges to Building a Teamwork in Healthcare

Team training programs in healthcare face all of the normal barriers to success for any training program in an organization. This includes the criticality of leadership or management support, opportunities to perform and practice their learned skills, and motivation levels of staff to mention just a few. However, in addition to this general list of barriers that effect all training programs, team training in healthcare faces another large issue. Specifically, in many senses, a team training intervention is training people to engage in behavior that is contrary to the existing organizational culture. Teamwork is not just a new skill set; it is a skill set that requires behaviors in direct opposition to many existing organizational norms (norms which are contributing factors to the poor safety record documented). For example, a hallmark of a high-reliability organization is deference to expertise and NOT deference to authority (LaPorte & Consolini, 1991). In many areas of healthcare (e.g., surgery and the military), there is a strongly ingrained deference to authority and a tight, authoritative hierarchy. This makes it extremely difficult to encourage (or empower) people to be assertive, speak up, and engage in good teamwork. In many senses the transfer environment (i.e., the clinical context) can be a hostile environment for staff members attempting to be assertive, question potential errors, and communicate effectively.

Given this situation, team training interventions can not be viewed solely as an isolated training session. Long-term organizational change is required, and consequently, a team training intervention must go beyond the classroom. Team training is a necessary, but when used in isolation, insufficient component of this change process. In following sections, we outline several other strategies that can be used concurrently to increase the effectiveness of the team training intervention as well as a specific aspect of teamwork that may be a particularly effective starting point for the building teamwork in healthcare.

Why a Cycle of Brief → Performance → Debrief?

The focus of this paper is on briefing and debriefings in healthcare teams. This represents only a small part of what teamwork entails; however, it is a highly important component of effective teamwork and for several reasons it may provide a good starting point for creating teamwork in healthcare.

First, team briefs are a critical component of high-reliability teams; that is, teams that continuously exhibit high levels of performance (Wilson, Burke, Priest, & Salas, 2005). As illustrated in Figure 1, pre-briefs and debriefs are where teams prepare for and subsequently reflect on performance. They are where teams develop the shared mental models necessary for efficient and effective performance (Orasanu & Salas, 1993), and where they learn from experience and engage in continuous learning and improvement (Smith-Jentsch et al., 1998). In essence, this training cycle creates 'self-learning' teams, and by doing so, a capacity for improvement that goes well beyond the time spent in

training activities. This cycle allows teams to extract valuable lessons from their own experience in a systematic way, a capacity that affords adaptability in rapidly changing environments (Burke, Stagl, Salas, Pierce, & Kendall, 2006) such as healthcare. This cycle of pre-brief → performance → debrief has been linked to highly effective (or expert) teams across a wide range of domains (Salas, Rosen, Burke, Goodwin, & Fiore, 2006). Team training programs designed to build this cycle have been developed, implemented, evaluated, and shown to be a very effective means of improving performance (Smith-Jentsch, Zeisig, Acton, & McPherson, 1998; Smith-Jentsch, Cannon-Bowers, Tannenbaum, & Salas, 2008).

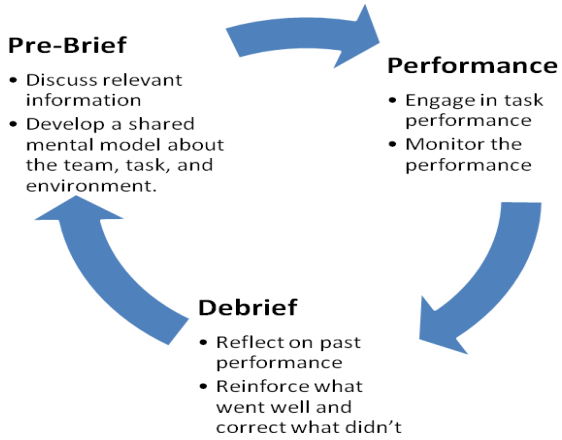

Figure 1. Continuous team learning cycle of pre-brief → performance → debrief.

Second, briefs and debriefs are 'low hanging fruit' in some ways for team training interventions. They occur (or can be scheduled) at predictable times. Other aspects of teamwork are more dynamic and therefore may be more difficult to train, structure using external tools, observe, and coach. For example, many aspects of teamwork (e.g., back-up behavior) are dependent upon the situation and the needs of fellow team members (e.g., you can't provide back-up behavior until the situation arises that calls for back-up behavior). These situations are not generally predictable and therefore make them 'moving targets' both for the person newly trained in teamwork skills attempting to identify an opportunity and practice the behavior on the job as well as the observer or coach trying to assess and diagnose the team's performance. As having opportunities to perform learned behavior on the job is one of the most significant predictors of transfer of training (Burke & Hutchins, 2007), having a more structured and predictable opportunity for trainees can be beneficial. Consequently, the ability to make briefs and debriefs structured, both in timing and content, provides an important opportunity in building teamwork skills in healthcare systems.

A FULL SPECTRUM APPROACH

In the previous section the potential contribution of teamwork to a safer healthcare system was outlined and some of the core challenges to training teamwork in healthcare were discussed. In this section, we describe the four strategies in the 'full spectrum' approach As illustrated in Figure 2. These four strategies include 1) team training, 2) structured tools, 3) evaluation, and 4) coaching. Each of these strategies are important and can be effective in their own right; however, by carefully combining these methods the gulf between training and transfer can better be managed.

Team training is a powerful tool for improving the effectiveness of teamwork, but it is only one component of a larger system. The knowledge and skills learned in training can be supported by structured tools on the job. Performance on the job should be systematically evaluated so as to inform coaching and continuous improvement processes. In the following sections, each of these strategies is described along with examples from Civilian and Military Healthcare systems.

1. Team Training

Training is the systematic acquisition of knowledge, skills, and attitudes underlying effective performance for a given task or set of tasks (Goldstein & Ford, 2004). Team training then is "a set of tools and methods designed to build teamwork competencies in a systematic manner" (Salas & Rosen, 2008, p. 6). A variety of team training programs have been developed for healthcare (Baker, Gustafson, Beaubien, Salas, & Barach, 2005). All of these programs can be described in terms of content (i.e., the competencies being trained) and delivery methods. Each of these are briefly discussed below.

Content

The science of teams has identified a wide range of knowledge, skills, and attitudes that contribute to team effectiveness in different contexts (Salas, Rosen, Burke, & Goodwin, 2009). The Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS©) is an evidence-based curriculum developed jointly by the Department of Defense and the Agency for Healthcare Research and Quality (AHRQ; http://teamstepps.ahrq.gov). As described in Table 1, the TeamSTEPPS© program comprises five categories of teamwork competencies: team structure,

leadership, mutual support, situation monitoring, and communication.

Team competency	Description
Team structure	Fundamental knowledge about team size, membership, composition, and leadership necessary to manage obstetric emergencies
Leadership	Coordination of the activities of team members by ensuring team actions are understood, change in information are shared, and that team members have the necessary resources
Mutual Support	Anticipation and support of other team members' needs through accurate knowledge about their responsibilities and workload
Situation Monitoring	Actively scanning and assessing situational elements to gain information, understanding, or maintain awareness to support functioning of the team
Communication	Clearly and accurately exchanging information among team members

Table 1. Summary of the TeamSTEPPS© competencies.

Delivery Methods

As described in Table 2, team training delivery strategies include information, demonstration, and practice-based methods. Simulation-based team training has been identified as a critical aspect of building teamwork skills (Salas, Rosen, Burke, Nicholson, & Howse, 2007). However, the delivery method should be chosen with consideration of the trainee's skill level and ultimately a range of methods is preferable. For example, the Mobile Obstetric Emergencies Simulator (MOES) System (Deering, Rosen, Salas, & King, in press) is an example of a team training program that leverages all three delivery methods. TeamSTEPPS© behaviors learned in a largely information and demonstration-based training session involving lectures and video-based vignettes demonstrating good and poor team behaviors. This general TeamSTEPPS© training is augmented with the use of in-situ simulation in the MOES system. With this system, teams are provided opportunities to perform teamwork behaviors on the actual unit under controlled conditions where constructive feedback can be given in a timely manner.

Delivery Method	Example
Information-based	Didactics and lectures promoting awareness of the importance of teamwork as well as the knowledge of teamwork competencies.
Demonstration-based	Live or video-based role modeling of positive and negative examples of teamwork behaviors and the consequences of each.
Practice-based	Simulation-based training in simulation centers or in situ where trainees are able to engage in the teamwork behaviors and receive corrective feedback.

Table 2. Overview of major training delivery methods.

2. Structured tools

The use of structured tools to guide, scaffold, or formalize critical aspects of interaction are common place in a number of domains. For example, handoffs of responsibility are structured using checklists and protocols in nuclear power generation and railroad transportation among others (Patterson, Roth, Woods, Chow, & Gomes, 2004). The use of Crew Resource Management (CRM) checklists in aviation during flight preparation is another example of how critical aspects of team interaction can be structured and performed in a systematic manner to avoid the variability in process that allows errors to go unchecked.

Use of checklists and other formal protocols for interaction and communication is on the rise in healthcare and many examples are now available (e.g., Joint Commission, 2007). Most notably perhaps is the World Health Organization's (WHO) surgical safety checklist. This checklist used pre and post surgical case and has been shown to significantly reduce mortality rates (from an average of 1.5% to 0.8%) as well as the rates of inpatient surgical complications (from an average of 11.0% to 7.0%) across a global sample of eight hospitals (Haynes et al., 2009). The intervention in this study involved only the use of a checklist and did not include teamwork training. Merely structuring critical aspects of interaction to ensure that all team members were working under a shared understanding of the case was enough to reach these marked increases in safety.

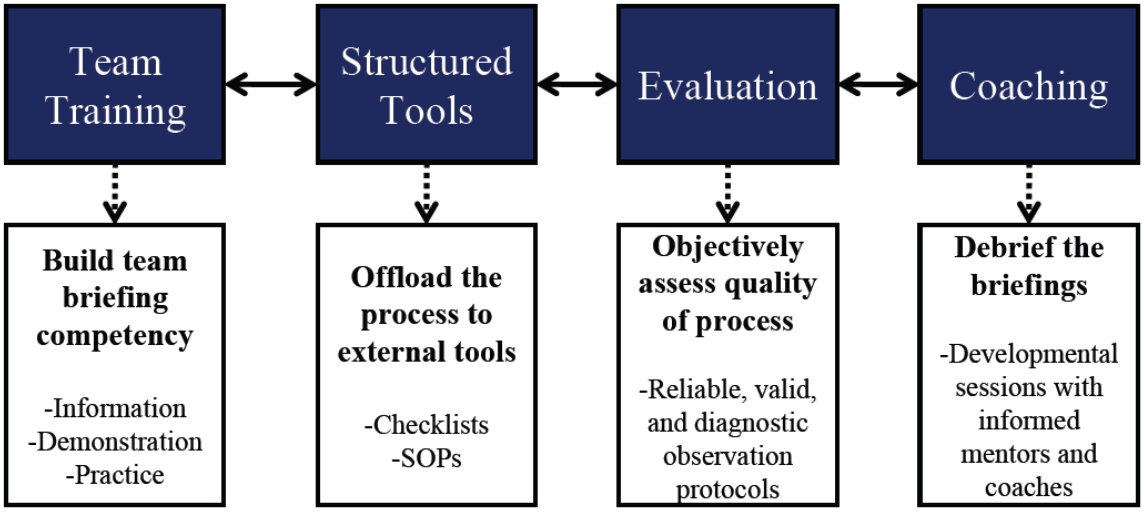

Figure 2. Components of the 'Full-spectrum' approach to building a cycle of pre-brief→performance→debrief.

3. Evaluation

The third strategy in the framework outlined here is systematic evaluation of the quality of teamwork, in this case of the briefing cycle. A formal approach to evaluating the briefing cycle is critical. Without a robust evaluation, the true impact and success (or lack thereof) of an intervention cannot be known. Additionally, an evaluation must not only answer the question of whether or not the intervention was successful, but more importantly *why* that intervention was or was not effective.

The quality of the briefing can be assessed in terms of both compliance to the structured portion of the brief and debrief protocol (i.e., does the team actually perform the briefings in the way they were designed) as well as more subtle issues of how they accomplish this (i.e., what is the team dynamic like when they perform the briefings; e.g., do all team members participate, how effective/accurate are they with their analysis of the situation). All briefs are not created equal. Simply performing a brief or debrief is not the same as performing one well (although it is a start in many cases). An evaluation must focus on ensuring that complying with a briefing checklist does not turn into 'check the box and move on' exercise. This is a real danger with the use of checklists as team members may go through the motions, but not truly attend to the task. For example, in observations of surgical briefings where some team members are busy preparing the patient and others organizing equipment, a brief may look like one individual member reading the checklist while the others are engaged in other tasks (or not in the room at all). This type of briefing is unfortunately all too common.

4. Coaching

Much of what is learned in modern organizations (including healthcare) is learned on the job (Mosher & Nguyen, 2008). Coaching is a strategy designed to provide a systematic method of on-the-job learning. Coaches are experienced staff members who can help less-experienced staff evaluate their performance, identify areas in need of improvement, and develop a course of action for improving that performance in the future. Medical education has been criticized for persisting with an apprenticeship model of technical skill development in lieu of more structured methods; however, the coaching strategy is effective for teamwork skill acquisition because it is only one part of a larger program. Our educational focus must shift to coaching teamwork behaviors targeted for acquisition in teamwork training programs.

PRACTICAL TIPS FOR IMPLEMENTATION

In the preceding section, each of the four strategies was briefly described. In this section, practical tips are provided based on experiences implementing these strategies in different healthcare systems.

Team Training

There is a large scientific and practice-based literature on implementing team training programs and the space here is not large enough for a full review. Consequently, in this section, some tips uniquely relevant for healthcare will be covered.

'Dose' teamwork training

The potential set of teamwork competencies to include in a training program is large. If a training program attempts to 'do it all at once' it is likely to overload the

trainees, possibly resulting in confusion and difficulty understanding, retaining, and applying what was to be learned. A solution to this involves targeting a limited set of behaviors for training. Once those behaviors have been learned, transferred, and sustainment has been achieved, a second set of behaviors is targeted. The following tips offer suggestions for how to decide which behaviors to focus on.

Use a problem-focused approach

If a team training program is introduced as a general or blanket solution to a vaguely defined patient safety problem, commitment and motivation from the staff is not likely to be high. Engaging and motivating leadership and front-line staff is a major success factor in implementing team training in healthcare (Salas, Almeida, Salisbury, King, Lazzara, Lyons, Wilson, Almeida, & McQuillan, 2009). By engaging the clinical workers to self-identify an important problem they are having on the unit, teamwork behaviors that can solve this problem can be identified (if it is a teamwork issue) and targeted for training. This promotes a sense of ownership in the team members (i.e., it is their problem and their solution), as well as defining a clear metric of success (i.e., are there reductions in the targeted error rates for example). Both of these can improve motivation and accountability (Pritchard, Harrell, DiazGranados, & Guzman, 2008). For example, if a surgical unit identifies that it has a problem with mislabeled specimens, and closed-loop communication is identified as an appropriate teamwork behavior to help remedy this problem, 1) team members know they are working to address a real and serious problem on their unit and will be more likely to work to achieve this clear goal (vs. an ambiguous goal), and 2) the rate of specimen labeling problems can be tracked and used to provide feedback to the staff.

Use multiple training delivery methods

Team training programs frequently use information and demonstration-based methods; however, practice-based methods are an essential component. The MOES System described above is an example of the use of multiple delivery methods. The general TeamSTEPPS curriculum is most commonly delivered via information and demonstration-based methods. The use of in situ simulation allows team members to practice skills on the actual unit.

Structured tools

There is no 'one-size fits all' structured tool. Differences in clinical domains, regulatory requirements, and organizational contexts will necessitate differences in content and organization for the tool as well as how it is administered (Arora & Johnson, 2006).

Involve front-line staff in the development process

Clinical workers should have a voice in developing the structured tools in order to create a sense of ownership and to ensure a good fit for the specific unit. In many senses, this follows the rationale for the problem based approach described above. Different teams will be addressing different problems with their checklists and consequently, the content and form of the tool will vary. For example, specific and unique technical issues may be associated with different surgical specialties and therefore different information will need to be shared by team members. For the same reasons that the clinical staff should be involved in identifying the teamwork skills to be trained, team members should be involved in the selection of content. However, this should be balanced with an evidenced-based review of the key issues of the context in general.

Streamline the tool

As with any tool, usability is an ultimate concern. No unnecessary content and no undue administrative burden should be placed on the clinical workers. This may seem at odds with the previous tip, but the key is balance. If clinical workers understand that they are going to be using the tool and will be held accountable for doing so, they will be less likely to propose that superfluous content be added.

Focus on *technical/systems* issues AND *teamwork* issues

Many checklist's like the WHO's Surgical Safety Checklist focus primarily on technical information; that is, specific pieces of patient, equipment, or environmental information. These tools still facilitate teamwork because discussing this information in a group setting helps team members to build a shared mental model of the patient, equipment, and procedures. However, these structured tools can go beyond organizing this technical information in briefs to drawing attention to teamwork behaviors/processes as well. For example, adding items to the debrief prompting team members to self-assess on the teamwork behaviors they've been trained on (e.g., leadership or communication behaviors) can help to reinforce good teamwork and correct poor teamwork.

Provide an opportunity to go beyond the checklist content

The formal structure of a checklist is good, but it cannot cover every circumstance. A concern with implementing

checklists is that the interaction will become too rigid and ineffective. There should always be an explicit opportunity for team members to raise any issues they feel have not been addressed to avoid this problem.

Build 'buy in' with evidence

The drive for evidence-based practice is strong, as are the practical concerns of efficiency in the provision of care. Emphasizing that there is hard data indicating that briefs and debriefs work and they improve patient outcomes and consequently can save patients from adverse events can be very helpful in getting buy-in (Haynes et al., 2009).

Maintain 'buy in' with a 'pipeline for change'

One of the main purposes of debriefs is to generate solutions to problems encountered during previous performance. These problems can involve individual technical performance, teamwork behaviors, as well as systems and equipment problems. The problems uncovered in debriefs need to be fixed, or the process becomes invalid and people's motivation to engage in team briefs will be greatly diminished. For example, in an operating room, team members identified an issue affecting their procedure that was rooted in the supply department. This issue was not under the direct control of the team, and was not addressed by the administration in a timely manner. As a result, this team ultimately stopped participating in debriefs. Consequently, a formal system of tracking the issues generated in debriefs should be put in place and the team should receive feedback on the issues that need to be addressed by members outside of the core team (e.g., issues that need administrative work).

Evaluation

Team training evaluation is important not only for understanding *if* the intervention is working, but *why* it is or is not working. It is also a powerful source of feedback for staff members and can provide information to assist in coaching. Much is known about effective training evaluation. Some key issues are discussed below.

Assess effectiveness at multiple levels

As discussed previously, compliance with using pre- and debrief tools is an important aspect of performance to capture, but teamwork goes beyond this. Measurement tools used in evaluation should capture the dynamic aspects of teamwork that are trained as well as the quality of interaction during briefs. Additionally, tools used in evaluations should be able to distinguish differences between individual performance and team performance (Cannon-Bowers & Salas, 1997).

Use structured and robust observational tools

Observation is an inescapable necessity for conducting team training evaluations. It is the only sure way of understanding the level of real team behaviors being exhibited on the unit or the degree of compliance with structured briefs. Self-reports of whether or not briefs are being conducted are inherently unreliable. For example, most OR's are required to conduct a 'pause for the cause' (i.e., a brief time-out immediately before first incision) by the Joint Commission. Self-reported compliance with this mandate is near 100%; however, observations have repeatedly revealed this is not the case. Observation protocols linked to the content of team training and structured briefing tools will help to improve the reliability, validity, and ease of data collection for observers.

Make sure you can trust your data

Important decisions will be made based on the data collected in an evaluation. Therefore, great care must be taken to ensure the data gathered is of the highest quality possible. This involves choosing, adapting, or developing measurement tools that suit the needs of the situation and which have been or will be evaluated psychometrically. Additionally, observers should be trained on the use of the tool and the inter-rater reliability of observers must be assessed. This will tell you how much confidence you can have in the data you are collecting.

Focus on team performance diagnosis

Evaluation tools should provide insight into the causes of performance. Just like a patient's underlying condition is inferred from the symptoms he or she is presenting with, evaluation tools should help determine underlying problems with teams based upon their behavior.

Coaching

It has been said that medicine is a team sport; however, teams in medicine don't have coaches (Gawande, 2006). Just as a sports team requires an outside perspective to observe and direct its development, healthcare teams too can benefit from a quality coaching program. However, as healthcare teams are not familiar with this role, it can be difficult to implement. While there is less research on coaching interventions than the previous topics discussed, the following tips offer suggestions from experience.

Choose coaches wisely—pick experienced, respected, interpersonally competent, and engaging staff members

The effectiveness of a coaching program is constrained by the abilities and personality of the coaches as well as the perceptions the staff have of the coaches. If coaches are not well respected by the staff, their feedback and guidance will not be valued or heeded.

Train coaches well—they must know the technical content and be skilled observers and communicators

Having coaches that are accepted by staff is critical, but even if coaches are accepted by staff, they must still be effective in their role and clinically competent. This means they must be skilled at understanding situations, diagnosing the underlying problems or successes, and relaying feedback to staff members in an effective manner. To help ensure this happens, coaches should be trained in some of the fundamental skills involved.

Make sure the role of the coaches is clear to staff

Formal coaching is not common practice in healthcare. Consequently, there are many opportunities for staff members to misunderstand the purpose and misconstrue the motives of the feedback given during these sessions. If staff members do not understand the process or its purpose, there is a great potential for adverse reactions. Therefore, the coaches and their role should be made clear to trainees, preferably at the time of training and by a member of the facilities leadership.

INTEGRATING THE APPROACHES

Each of the approaches described above is a powerful tool for change. However, by attending to issues of continuity and timing across these interventions, they can work to support one another. Each strategy should complement the others. A key to success in managing this is to *maintain consistency across strategies.* That is, the teamwork competencies trained in teamwork should be incorporated into the structured tools for critical interactions. For example, if closed-loop communication is a teamwork behavior targeted for acquisition in training, it can be used as a prompt for team-members to self-assess their performance in closed-loop communication. An explicit item for closed-loop communication on a debrief-checklist can provide an opportunity for the team to reinforce good examples of this behavior and correct deficient performance. Additionally, these same teamwork competencies should drive the evaluation process; that is, the behaviors trained should be the behaviors rated in the clinical setting. The information gained from evaluation can then drive coaching programs which should focus on these same teamwork competencies.

Before any specifics are determined for the four strategies outlined here, a more general question about the goals and expectations for teamwork on the unit must be addressed. A unit's leadership and staff should decide what they want from teamwork, articulate that clearly, and form the four strategies to meet these goals. This goal needs to be more specific and more operational than the vague goals of better patient safety, or fulfilling a training mandate. Goals such as these are not substantive enough to rally and maintain the needed staff efforts to make the changes happen and then sustain them.

CONCLUDING REMARKS

Improved teamwork can be a powerful tool for reaching the goals of a safe and reliable healthcare system. Reaching these goals, however, will require a persistent effort at cultural change. Team training can be a foundational component of this journey, but bridging the gap between the training environment and the clinical environment will require a systematic and 'full spectrum' approach to building teamwork behaviors in healthcare.

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