TeamSTEPPS® 2.0

Evidence Base: Introduction

Teamwork has been studied extensively over the past 30 years. Research suggests teamwork is defined by a set of interrelated knowledge, skills, and attitudes (KSAs) that facilitate coordinated, adaptive performance, supporting one's teammates, objectives, and mission.[1-4] Although teamwork differs from taskwork (i.e., operational skills), both are required for teams to be effective in complex environments.[5] However, knowledge and skill at the task level are not enough. Teamwork depends upon team members' ability to:

- Anticipate needs of others;
- Adjust to each other's actions and the changing environment; and
- Have a shared understanding of how a procedure or plan of care should happen.

In health care, there has been significant progress in defining team requirements since the release of the Institute of Medicine (IOM) report in 1999[6] and the early research that led to TeamSTEPPS®.[7] This body of research has yielded a significant evidence base for a set of core KSA competencies that Salas and colleagues contend apply to almost all teams.[8] Further, Salas, et al.'s (2008) meta-analysis on the science of team training illustrated that positive relationships exist between team training interventions like TeamSTEPPS and their associated outcomes. Importantly, such training has been found to account for 20 percent of the variance in team performance.[9]

The critical aspects of teamwork that must be targeted in training include: team leadership, mutual performance monitoring (i.e., situation monitoring), backup behavior (i.e., mutual support), and communication. These core skills lead to important team outcomes, such as enabling the team to adapt to changing situations, achieve compatible shared mental models among team members, and maintain a stronger orientation toward teamwork (refer to Exhibit 1).

Exhibit 1. TeamSTEPPS Skills

Teamwork Skill	Definition	Behavioral Examples	Selected Citation
Team Leadership	The ability to direct and coordinate the activities of other team members, assess team performance, assign tasks, develop team knowledge, skills, and attitudes (KSAs), motivate team members, plan and organize, and establish a positive atmosphere.	- Facilitate team problem solving - Provide performance expectations and acceptable interaction patterns - Synchronize and combine individual team member contributions - Seek and evaluate information that impacts team functioning - Clarify team member roles - Engage in preparatory meetings and feedback sessions with the team	Cannon-Bowers, et al., 1995[2]; Salas, et al., 2004[10]; Barach & Weingart, 2004[11]; Sharma, et al., 2011[12]; Woodhead, 2011[13]; Collins & Holton, 2004[14]; DeRue, et al., 2011[15]

Mutual Performance Monitoring (aka Situation Monitoring)	The ability to develop a common understanding of the team environment and apply appropriate task strategies in order to accurately monitor teammate performance.	• Identify mistakes and lapses in other team member actions • Provide feedback regarding team member actions in order to facilitate self-correction	McIntyre & Salas, 1995[16]; Porter, et al., 2003[17]; Carney, et al., 2010[18]; Hobgood, et al., 2010[19]
Backup Behavior (aka Mutual Support)	The ability to anticipate other team members' needs through accurate knowledge about their responsibilities. The ability to shift workload among members to achieve balance during periods of high workload or pressure.	• Recognition by potential backup providers that there is a workload distribution problem involving their team • Shifting of work responsibilities to underused team members • Completion of the whole task or parts of tasks by other team members	Robertson, et al., 2010[20]; McIntyre & Salas, 1995[16]; Porter, et al., 2003[17]
Communication	The exchange of information between a sender and a receiver, irrespective of the medium.	• Follow up with team members to ensure message was received • Acknowledge that a message was received • Clarify with the sender of the message that the message received is the same as the intended message sent	Capella, et al., 2010[21]; Halbesleben, et al., 2011[22]; Haskard, et al., 2009[23]; Mayer, et al., 2011[24]; Mesmer-Magnus & DeChurch, 2009[25]; Robinson, et al., 2010[26]; Shea-Lewis, 2009[27]; McIntyre & Salas, 1995[16]; Salas, Wilson, et al., 2008[28]
Overall Teamwork Improvement	The demonstrated improvement in teamwork across multiple teamwork skills.		Carney, et al., 2010[18]; Capella, et al., 2010[21]; Mayer, et al., 2011[24]; Neily, et al., 2010[29]; Salas, et al., 2008[9]; Salas, et al., 2006[30]

In addition to studies of how teams perform, there has been a burgeoning interest in the effectiveness of team training interventions in health care. In a recent review, more than 40 peer-reviewed articles detailing health care team training evaluations were identified.[31] It is evident from these recent examinations that team training is being implemented across a wide spectrum of providers and is targeting important competencies such as communication, leadership, role clarity, and situational awareness.[31] In addition to improving team performance, team training has been found to improve the use of appropriate medical technical skills in health care professionals.[32]

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There has also been a growing body of research focused directly on the effectiveness of TeamSTEPPS. Research has shown that TeamSTEPPS leads to increases in desirable teamwork and safety attitudes, as well as increased communication, teamwork behaviors, clinical process compliance, efficiency, and overall performance in a variety of medical settings.[31, 33-39]

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