Yes, teamwork can improve patient safety. In fact, patient safety depends on it. Every day, teams of medical professionals make important decisions and actions regarding diverse and complicated treatments that affect the lives and well-being of patients. These decisions are made in a complex environment that often involves:

- rapidly evolving, ambiguous situations;
- complex, multi-component decisions;
- information overload;
- severe time pressure;
- severe consequences for error; and
- performance/command pressure.\(^1\)

Medicine has responded to this complexity by becoming specialized. However, although each clinician has extensive skills in his or her own specialization, it is the coordination among those skills that make the quality of the patient’s treatment a seamless success. Communication across multiple units, physicians, nurses, and others becomes vital to ensuring that accurate and complete information is available, properly exchanged, and regularly updated.

Researchers and medical professionals agree that patient treatment and safety is improved through interdisciplinary teamwork.\(^2\) Policy makers and professional bodies have also been promoting teamwork as the preferred model of practice.\(^3\)\(^-\)\(^4\) The reality, however, is that teamwork occurs infrequently, is fraught with difficulties, and is misunderstood. For example, teamwork is often thought of as a program that administrators implement so everyone will like each other.\(^5\) That assumption is overly simplistic: teams operating in complex medical environments need to do more than simply “like each other.”

**What Teamwork Is**

Teamwork is a set of interrelated behaviors, cognitions, and attitudes that combine to facilitate coordinated, adaptive performance.\(^6\) Teamwork is distinct from task work (i.e., operational skills). Both are needed for team effectiveness in complex environments, but knowledge and skill at the task are not enough. Effective teams have members who anticipate each other’s needs; they can coordinate without the need to communicate overtly. Such implicit communications are vital in high stress, time-restrictive environments.

High-performing teams develop a sense of collective efficacy and “teamness.” The individual members recognize their interdependence and believe in the ability of the team to solve complex problems, in this case to provide superior health care for patients. Further, effective teams optimize their resources. They are self-correcting, compensate for each other (i.e., provide back-up behaviors), and reallocate functions as necessary.

Finally, effective teams recognize potential problems or dangerous circumstances and adjust their strategies under stress (any trauma team member can tell you that things don’t always go exactly as planned). When deviations in normal procedures occur, medical team members must be able to adapt to the dynamic nature of the situation. Teamwork is the mechanism by which this adaptation can be facilitated.

**What Teamwork Is Not**

Teamwork is not an automatic consequence of placing people together. Teamwork does not require that you like or “feel close” to your team members. Teamwork depends on a willingness to cooperate for a shared goal. In the health care field, that goal is maintaining the patient’s health status and avoiding errors. Teamwork also does not require that you work with team members on a permanent basis. Teamwork is sustained by a shared set of teamwork skills, rather than permanent assignments that carry over from day-to-day.\(^5\)

Although teamwork is often discussed in relation to medical professionals interacting in crisis situations, it is as imperative in daily routines as it is in emergencies. Teams that work well together in routine situations have already dealt with many of the interpersonal and organizational conflicts that often arise. These teams not only experience fewer crises, they manage these crises more effectively when they do occur.\(^7\)\(^-\)\(^8\) However, medical teams seldom maintain permanent, static membership. We need to understand the teamwork knowledge, skills, and attitudes (KSAs) that will transfer across teams and situations. Those that will benefit even newly formed teams include shared task models, adaptability, performance monitoring, and back-up behavior.
Can Teamwork Enhance Patient Safety?

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What Do Teams Think, Do, and Feel?

Teamwork requires the KSAs that allow interdependent coordinating action toward a shared goal. In the healthcare field, that goal is patient well-being through the maintenance of health status and averting health deterioration. By understanding the value of multidisciplinary contributions to teamwork, patient care, and safety—and the willingness to cross tradition-based role boundaries to improve patient care—teamwork can become embedded in the healthcare field. On the other hand, interdisciplinary differences in the value of teamwork and perceptions of what teamwork encompasses may be the largest impediment to the acceptance of working cooperatively.

Figure 1 suggests a model of team performance which interprets teamwork as what team members think, do, and feel. Team members need to know the strengths and weaknesses of each other’s abilities in order to anticipate and overcome difficulties. Team members must also know the team’s mission, objectives, resources, and norms. They must know the team’s tactical and strategic goals, what resources are available to achieve those goals, and what teammates expect of them in the process.

Further, team members must know how to sequence their tasks, how to develop cue-strategy associations, and possess shared task models. For instance, the facilitation of shared task models involves knowing the tasks, equipment, team member interactions, and problems encountered in performance environments in order to generate expectations and predictions about these systems. By understanding the unique roles and responsibilities of an interdependent healthcare team (e.g., anesthesiologist, nurse, attending physician), even newly formed team members can quickly realize shared team models in a dynamic environment.

Team members also need to do a number of things to facilitate effective teamwork; certain behaviors and actions are necessary for effective team performance. First, team members in healthcare settings must proactively and reactively adapt to changing circumstances. They have to use information collected from the task environment or situation to make adjustments in the treatment plan or procedures. Next, team members must demonstrate clear and concise closed-loop communication. For this, team members must verify that sent messages are both received by the intended party and interpreted by the receiver correctly. Additionally, teams in complex environments must monitor their teammates and provide back-up behavior, demonstrate strong leadership, manage conflicts appropriately, make informed decisions, and promote coordinated action by synchronizing the team’s task requirements, material resources, team member KSAs, strategies, and responsibilities.

Team performance also has an affective component; healthcare teams must feel motivated to achieve the team’s mission, objectives, and tasks. They must also have a strong collective orientation and belief that the team can come together to successfully meet challenges that are too great for any single individual to overcome. Further, team members need a shared vision of the goals and mission (improving patient safety should become a component of this vision). Finally, effective teams have cohesion and a sense of mutual trust. Team members must be committed and attracted to the team as a means for task accomplishment in the dynamic environment of healthcare settings.

Doing, Feeling, and Thinking in Medical Teams

The dynamic and complex environment in which medical teams reside speaks to the application of past research on what teams do, feel, and think. Several specific behaviors, cognitions, and affects that facilitate teamwork have been identified in research on teams. Within that larger framework is a subset of factors that are especially relevant to medical teams (see Figure 2).
Teamwork depends upon the ability of each team member to 1) anticipate the needs of others, 2) adjust to each other’s actions and to the changing environment, and 3) have a shared understanding of how a procedure should happen in order to identify when errors are occurring—and how to correct for those errors.

Adaptability refers to the ability to recognize deviations from expected action and readjust actions accordingly.10 Similarly, others have defined it as a team’s ability to “adapt their strategies according to the particular task demands at hand.”11 The overall benefit of adaptability in medical teams is that it makes use of all the available resources (e.g., expertise of each of the team members) rather than following bureaucratic lines of authority that may produce inefficiencies in time-pressed environments.12 The importance of this skill is driven by both the complexity and the interdependent nature of such teams. Medical teams meet both of these criteria. The work of interdisciplinary medical teams is complex, due not only to the idiosyncrasies the patients bring with them, but also due to staffing changes within a team that can bring a host of interpersonal variables, skills, and preferences that affect the team’s functioning.

Performance monitoring allows team members to act as a second or third pair of eyes and ears by monitoring each other in an effort to catch mistakes, slips, or lapses prior to, or shortly after, they have occurred. However, in order for performance monitoring to be accepted by individuals it must be made clear that the purpose is to improve performance and patient safety, rather than to keep a record of mistakes for negative intentions. The focus should be on continuous improvement and development, not administrative or punitive actions.

A preventable adverse outcome is often made up of many “trivial” errors. By reducing a subset of those trivial errors, the adverse outcome may be avoided altogether. Effective teams comprise members who monitor fellow members’ work to catch and correct the small errors that can lead to big problems. This shared awareness also allows team members to detect deficiencies or overloads and shift work responsibilities to others as it becomes necessary. If shared awareness is not created, errors may not be detected until they have resulted in adverse outcomes (e.g., a deterioration of the patient’s status).

**Back-up behavior** can either be verbal feedback or behavioral assistance. Shared awareness regarding the task and the team also form the foundation for this skill. When shared awareness is achieved, the determination of when to “step in,” as well as who should step in, is made clear. Shared awareness also assists in the delegation and reprioritization of certain tasks. Even small shifts in workloads, can minimize errors due to stress and overload.

**Figure 2**

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Performance Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills</td>
<td>Back-up Behavior</td>
</tr>
<tr>
<td>Attitude</td>
<td>Team / Collective Orientation</td>
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**References**


How To Turn a Team of Experts Into an Expert Team

Why does a highly trained set of individuals not always operate effectively as a coordinated team?

The answer is not simple, but research on teams operating in complex environments has provided some clues. For example, by focusing on the process by which decisions are made, implications from naturalistic decision-making theory have provided guidelines for improving the decision making of teams operating in real environments. Training must also be provided to actively detect errors, correct them, and then to proactively embed the lessons learned into organizational processes.1

Training for medical professionals needs to clarify what errors need to be reported, how and why errors should be reported, and encourage prompt reporting to assist in making needed changes.2 Respected members of the staff (e.g., physicians, head nurses, etc.) must model the expected behavior by admitting to errors and using their own experiences as opportunities for the team to learn. They should also seek out opportunities to promote teamwork and assist in effective teamwork behaviors. Eventually, once all employees witness that the culture provides a safe haven for admitting to, correcting, and learning from errors, they will begin to report their own errors.3 The goal is to make safety everyone’s responsibility.

Based on previous research,4 we would suggest that a team of experts can be turned into an expert team by:

- fostering shared (or compatible) mental models of the task and of team member roles;
- training team members on teamwork skills such as situation awareness, open communication, team leadership, adaptability, and compensatory behavior;
- training adaptability so that tasks are not defined by status, but rather the patients’ needs and the skills and abilities brought to the team;
- promoting closed-looped communication to prevent miscommunication and misunderstandings;
- providing team members with guided practice on skills needed to perform under naturalistic conditions;
- developing simulations that allow team members to experience different courses of action;
- linking cue patterns to response strategies not only with regard to tasks, but other team members;
- training (via demonstration, practice, and feedback) team members on each others’ roles and on building realistic expectations about the task requirements; and
- training team leaders to maintain shared situational awareness by providing periodic updates to team members.

Clearly, some of these strategies are more or less relevant to some teams, depending on the specific circumstances and deficiencies. Equally clear, however, is the fact that simply throwing together a group of experts will not result in optimal team performance. Teams operating in complex environments require training in teamwork skills in order to facilitate maximum performance and avoid unnecessary errors.

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Can Teamwork Enhance Safety?

The underpinning of back-up behavior is acceptance that no one is exempt from human performance limitations such as stress, sleep deprivation, or cognitive overload. Traditional medical training conditions physicians to feel that they should have all the answers and are immune to mistakes. Realistically, they are still human—susceptible to the stresses inherent in their jobs and personal lives. Through back-up behavior, errors made due to stressors can be quickly corrected.

Making Medical Teamwork a Reality

Although a great deal of literature has suggested that interdisciplinary teamwork increases conflict and is fraught with problems, this may be related to the fact that traditional medical training does not teach professionals to collaborate, rather than maintain a unidisciplinary perspective. The difficulties arising from this unidisciplinary perspective are due to differing values of who is ultimately responsible for patient care, and what teamwork is. Fortunately, only a minimum level of understanding of fundamental teamwork processes is necessary in order for basic cooperation to occur.14 Changes in how health care professionals are trained to view teamwork (i.e., valuing the input of others, focusing on the benefits attained by the patient) may reduce conflict and improve team performance. Optimal interdisciplinary training begins early in medical education.

The key to implementing interdisciplinary teamwork, and seeing the benefits through error reduction and cost savings (e.g., reduced length of stays and readmissions), is knowing when a single medical provider is adequate and when to implement team care. When the benefits of teamwork are greater, health care institutions have the responsibility to implement, support, and train their practitioners to collaborate and cooperate, thereby improving patient care. This belief must be ingrained in the organizational culture in order for practitioners to buy into the idea that teamwork delivers more effective patient-focused service. Otherwise, efforts to maintain unidisciplinary care structures will prevail, because they maintain the status quo and leadership interests of key persons.15
Improved teamwork—the seamless integration of multiple knowledge, skill, and affective competencies—is a mechanism to improve patient safety and avoid errors. Understanding the nature of teamwork and how its interrelated components manifest themselves in terms of cognitions, behaviors, and affects is critical to promoting coordinated, adaptive team performance in increasingly complex and dynamic medical environments. To answer the initial question again, yes, improved teamwork can improve patient safety.

Notes and References


4 Standing Committee on Postgraduate Medical and Dental Education. Multi-professional working and learning: Sharing the educational challenge. London, 1997.


