Teamwork and Communication in Interventional Radiology

Raja S. Ramaswamy, MD [a,*], Tatulya Tiwari, MD [b],
Hillary F. Ramaswamy, RN, CPNP/CFNP [c], Olaguoke Akinwande, MD [a]

[a] Department of Radiology, Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO, USA
[b] Department of Radiology, Lexington Veterans Affairs (VA) Medical Center, Lexington, KY, USA
[c] St. Louis Children's Hospital, St. Louis, MO, USA

A B S T R A C T

Teamwork and communication in the modern era are essential to the delivery of safe reliable patient care. As the complexity of the patient's disease entity increases and potential interventional procedures are warranted, consolidation of vast amounts of information from multiple teams is required. Thus, exceptional teamwork and communication are necessary for coordinated patient care. Breakdowns in teamwork and communication can lead to mistakes and breaches in patient safety. The purpose of this article is to review the fundamental principles and better understand the underlying reasons for dysfunctional teams and poor communication in the interventional radiology suite.

Copyright © 2017 by the Association for Radiologic & Imaging Nursing.

Keywords:
Nursing
Teamwork
Communication
Interventional radiology

Introduction

Teamwork and communication are an essential part of a continually evolving health care system. Individualized patient care in the hospital requires knowledge and input from several health care team members. As health care in the United States increases in complexity and specialization, it becomes increasingly vital to have effective teamwork and communication. Although these properties are highly interdependent, they rely on the health care system to actively promote and educate on these principles. Breakdowns in teamwork and communication can lead to mistakes, breaches in patient safety, quality of patient care, and repetition of work. Interventional radiology (IR) requires coordination from numerous groups, including schedulers, receptionists, nurses, technologists, and physicians. The purpose of this article is to better understand the theory behind teamwork and communication and identify factors that promote dysfunctional teams and poor communication.

Teamwork

The Patient Care Team

On arrival to the hospital, the patient's health care team includes *every* person who is encountered along the way. This includes but is not limited to receptionists, nurses, technologists, physicians, laboratory technicians, administrators, and hospital parking lot attendants. When a patient comes through the door into the IR suite, whether it be via an inpatient ward or on an outpatient basis, there is the expectation that team members seamlessly integrate and coordinate into one functional unit. Specifically in IR, once on the procedural table, there are three members in the team: the technologist, physician, and nurse. Each of these team members operates in their own microsystem, which has specific needs (Whitt, Harvey, McLeod, & Child 2007). These three microsystems have to coordinate together to provide an optimal patient experience (Nelson et al., 2002) (Table 1).

Teamwork requires planning and execution, which necessitates a coordination of shared plans. Execution of a plan requires that each teammate share his or her individual plan or mental model (Reason, 1990; Schmidt & Lee, 2005). In other words, if each person on the team knows what the other teammates thought processes are then they will have a shared mental model. However, this takes work and does not happen passively. Once teams have worked together for a period and taken the necessary steps toward improvement, they may observe each other's actions and know how to appropriately respond. Having a shared mental model leads

Table 1
Definitions of terms

Definitions
Microsystem: A small interdependent group of people who work together regularly to provide care for specific groups of patients
Mental model: An explanation of someone's thought process about how something works
Constructive conflict: Conflict in which benefit exceeds the costs and generates productive mutually beneficial shared decisions
Authority gradient: The established or perceived command and decision-making power hierarchy in a team or group situation. A steep authority gradient implies that errors in quality and safety are rarely reported to senior leadership because of fear of punishment
High-performance team: A group of goal-focused individuals who are able to achieve superior results, despite a complex health care environment
Collective mindfulness: Mental orientation that continually evaluates the environment as opposed to mindlessness where a simple assessment leads to choosing a plan that is continued until the plan runs its course

to a high-performing team (Gleick, 1987; Surowiecki, 2004; Tapscott & Williams, 2006).

In most critical clinical situations, high-performance teams perform better than individuals. The way teams coordinate is by aggregating knowledge spread across multiple individuals, particularly in cases where there is no single good answer. A great example of aggregating knowledge in the health care system is through multidisciplinary conferences. Complex problems are best addressed by multidisciplinary teams that draw from individual experiences to come up with solutions. For example, many institutions have a multidisciplinary liver tumor conference, which includes transplant surgery, hepatology, radiation oncology, and IR. These groups come together out of their individual silos, draw on experiences, and as a group come up with the best treatment plan for the patient (Lencioni, 2002; Senge, 2006).

Characteristics of Effective Teams

Teams usually start out as a small group assigned to a particular task. In IR, this classically centers on a procedure for the patient. Typically, newer teams are assigned to less complex cases and more experienced teams to complex cases. During the early stages of team development, performance declines are expected. Performance declines during the early stages of team development are entirely predictable and can lead to teammate distrust. Therefore, during those early stages, it is critical that there is sound communication and active attempts at improving teamwork. Early performance declines can lead to dysfunctional individual behavior,

Clinical vignette 1—Teamwork

A 59-year-old patient was in the IR suite for placement of a percutaneous abscess drain. The physician asked the IR nurse to administer 1 g of Cefazolin intravenous (IV), which was not heard. The physician repeated the statement in an aggressive tone for which the nurse retorted that there is "no need to speak with me in that tone." Within the next 5 min, the nurse asked the technologist to get more IV tubing. The technologist for the case rolled eyes and made an audible sound in disagreement with the request. These aforementioned actions are characteristics of dysfunctional teams that often lead to suboptimal patient outcomes.

which may lead to a dysfunctional team (Covey & Merrill, 2006; Lencioni, 2002).

The stages of team development were first described by Tuckman (1965). Teams start off as a working group and will have predictable growing pains, which is the dysfunctional phase. As time and resources are devoted to team development, performance increases at an exponential level. The next phases of development once the dysfunctional phase is traversed are potential team, real team, and finally a high-performance team. High-performance teams are achieved through an active effort by individuals and the institution to implement effective teamwork and communication (Lencioni, 2002; Tuckman, 1965).

High-performance teams are built on trust. Trust also includes under its attributes confidence, integrity, and predictability. Small amounts of trust accompany each newly formed team. This trust must be reinforced via the aforementioned attributes. As we have all experienced in different facets of life, trust is lost more quickly than it is gained, and the same holds true in the hospital setting. During periods of high organizational turnover, performance declines because it takes time to build trust (Argote, 2005; Argote & Epple, 1990).

Key performance drivers include constructive conflict and eliminating destructive conflict. Constructive conflict requires team members to revise their mental models used to solve tasks and continuously improve. Too little conflict creates artificial harmony, and too much conflict is destructive. There is an ideal conflict point that allows for improvement in shared mental models. Successful teams are committed to the concept of buy-in. The concept of buy-in means that despite an individual not agreeing completely with a plan they are sold on, that it will improve team chemistry and results. However, this does not mean that disagreements should not happen. Teams should have the ability to disagree but then commit to clarifying goals. High-performance teams hold each other accountable by performance standards. Performance standards if possible should be set by team members to empower and create buy-in (Lencioni, 2002).

Successful teams are results driven. Success is measured on the team level as opposed to the individual level. Teams may choose their own way of measuring success; however, carefully chosen metrics allow the team to measure results. This in turn allows for revision of methodologies and goals. In summary, high-performance teams are built on trust, constructive conflict,

Clinical vignette 2—Teamwork

A 23-year-old patient was referred to IR for an urgent angiogram and embolization for a gunshot wound to the right lower extremity. The patient was sedated using moderate sedation, which includes midazolam and fentanyl. The patient's vital signs at the beginning of the case were stable; however, after administration of 1 mg of midazolam, the patients O_2 saturation levels dropped to 72%. The IR nurse *audibly* voiced to everyone in the room "The patients O_2 sats have dropped to 72%." The technologist and physician immediately stopped what they were doing and focused on the IR nurses statement. All members of the team focused in on managing the airway. After unsuccessfully attempting maneuvers to open the patient's airway, a CODE was called. Although, this clinical vignette may seem to be an obvious reaction, all members of the team exhibited attributes, which are characteristic of a high-performing team.