



## Journal of Health Organization and Management

Organizing for teamwork in healthcare: an alternative to team training?

Christofer Rydenfält, Per Odenrick, Per Anders Larsson,

### Article information:

To cite this document:

Christofer Rydenfält, Per Odenrick, Per Anders Larsson, (2017) "Organizing for teamwork in healthcare: an alternative to team training?", Journal of Health Organization and Management , Vol. 31 Issue: 3, <https://doi.org/10.1108/JHOM-12-2016-0233>

Permanent link to this document:

<https://doi.org/10.1108/JHOM-12-2016-0233>

Downloaded on: 16 June 2017, At: 05:12 (PT)

References: this document contains references to 0 other documents.

To copy this document: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

The fulltext of this document has been downloaded 16 times since 2017\*

### Users who downloaded this article also downloaded:

(2017), "Rethinking compassion fatigue", Journal of Health Organization and Management, Vol. 31 Iss 3 pp. - <https://doi.org/10.1108/JHOM-02-2017-0037>

Access to this document was granted through an Emerald subscription provided by emerald-srm:374558 []

### For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit [www.emeraldinsight.com/authors](http://www.emeraldinsight.com/authors) for more information.

### About Emerald [www.emeraldinsight.com](http://www.emeraldinsight.com)

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

\*Related content and download information correct at time of download.

# Organizing for teamwork in healthcare: An alternative to team training?

## Abstract

### Purpose

This conceptual paper aims to explore how organizational design could support teamwork and to identify organizational design principles that promote successful teamwork.

### Approach

Since traditional team training sessions take resources away from production, the alternative approach pursued here explores the promotion of teamwork by means of organizational design. A wide and pragmatic definition of teamwork is applied: a team is considered to be *a group of people that are set to work together on a task*, and teamwork is then *what they do in relation to their task*. The input – process – output model (IPO) of teamwork provides structure to the investigation.

### Findings

Six teamwork enablers from the healthcare team literature – *cohesion, collaboration, communication, conflict resolution, coordination and leadership* – are discussed, and the organizational design measures required to implement them are identified. Three organizational principles are argued to facilitate the teamwork enablers: 1) team stability, 2) occasions for communication, and 3) a participative and adaptive approach to leadership.

### Research implications

The findings could be used as a foundation for intervention studies to improve team performance or as a framework for evaluation of existing organizations.

## **Practical implications**

By implementing these organizational principles, it is possible to achieve many of the organizational traits associated with good teamwork. Thus, thoughtful organization for teamwork can be used as an alternative or complement to the traditional team training approach.

## **Originality**

With regards to the vast literature on team training, this paper offers an alternative perspective on how to improve team performance in healthcare.

**Keywords:** Organizational design, Teamwork, Interprofessional healthcare, Team training

## **Conceptual paper**

## **Introduction**

Interest in healthcare teamwork has increased in the last decade. Consequently, healthcare professionals have often found themselves the subjects of organizational interventions to improve or implement teamwork, and are expected to work efficiently over the boundaries of traditional professions. An underlying assumption is that teamwork can make healthcare more efficient (Reeves *et al.*, 2010). Previous research shows that teamwork improves patient care, patient safety, and organizational effectiveness, and increases job satisfaction (Welp & Manser, 2016; Kalisch *et al.*, 2010; Manser, 2009; Lemieux-Charles & McGuire, 2006). It has also been shown that the lack of adequate team behaviors can increase the likelihood of patients experiencing major complications after surgery (Mazzocco *et al.*, 2009).

The traditional approach to improve teamwork in healthcare has been through team training and simulation. For instance in Buljac-Samardzic *et al.*'s (2010) review of interventions to

improve team effectiveness, only 8 of the 48 interventions identified were considered organizational, while 32 were considered training interventions. This conceptual paper pursues an alternative route by investigating theoretically how good teamwork can be achieved through organizational design measures. Three organizational design principles are proposed to improve teamwork. This approach can become an important complement to traditional team training in healthcare settings. This is especially relevant in advanced interprofessional settings, where personnel already have to spend a significant amount of time on professional training to maintain and update their technical skills.

## **Background**

### *The state of teamwork in healthcare*

In order to assure effective teamwork, and to improve this teamwork further, researchers concerned with safety and efficiency have been particularly interested in assessing team performance (Forse *et al.*, 2011; Pfrimmer, 2009; Undre *et al.*, 2006; Gafà *et al.*, 2005; Lingard *et al.*, 2004). The results make it clear that there is room for improvement. Lingard *et al.* (2004) show that communication failures often occur in the operating room. Undre *et al.* (2006) report that different members of the surgical team view the structure of their team differently, and that surgical teams are not always as cohesive as might be assumed. Much of the research on teamwork in healthcare is concerned with enabling and assessing it, but some has also been conducted to explain why teamwork does not always function. Rydenfält *et al.* (2012) show how poor team functionality can be explained to some degree by the differences in activity orientation between different professions. Kvarnström (2008) reports on difficulties in the inter-professional healthcare team dynamics due to professionals taking too much of an individual profession identity approach, acting as representatives of their professions in the

team. It has also been pointed out that differences in cultures between different professions can hinder interprofessional teamwork (Hall, 2005).

### *Initiatives to improve teamwork*

Previous research shows that qualities associated with the teamwork process significantly affect the outcomes of teamwork (i.e. patient safety, effectiveness) (Schmutz & Manser, 2013). The solution often suggested by research to problems related to teamwork and team performance in healthcare is *team training* (Maynard *et al.*, 2012; Buljac-Samardzic *et al.*, 2010). In practice this means training of what are commonly called *non-technical skills*, in contrast to the technical and medical skills associated with medical practice (Flin *et al.*, 2008). Other research, however, indicates that organizational measures can be a viable strategy to improve teamwork (Heale *et al.*, 2014). For instance, Oandasan *et al.* (2009) show that space and time have an impact on the quality of communication and collaboration in the team, and Kurmann *et al.* (2014) show that familiarity with the other members of the team reduces morbidity among patients receiving abdominal surgery.

The results from research on team training have been promising, though there has been some critique of their validity (McCulloch *et al.*, 2011) and of the usefulness of adapting team training techniques from other areas, such as crew resource management from aviation (Reeves *et al.*, 2013). Awad *et al.* (2005) show that communication improved after a medical team training intervention. Forse *et al.* (2011) report that while team training initially decreased mortality and improved efficiency in terms of the percentage of operating room first cases that started on time, performance dropped once the team training intervention ended. Neily *et al.*'s (2010) large scale study of the association between team training and mortality indicates that team training is associated with decreased surgical mortality.

However, because mortality decreased even further as the program continued, their results also suggest that it is important to ensure that the procedures and tools associated with team

training are fully integrated into practice. This was achieved in their study through quarterly coaching interviews. Thomas and Galla (2013) also acknowledge the importance of refresher training to maintain knowledge and practice. Thus, the lesson learned from the team training literature is that team training can have positive effects on performance. To achieve a lasting effect, though, the training has to be maintained and reinforced (Maynard *et al.*, 2012).

Given that healthcare personnel – such as physicians and specialized nurses – have gone through a long training period to begin with, and that they regularly have to spend time away from work to ensure that their medical and technical skills are kept up to date, team training of non-technical skills becomes another activity that demands their attention and keeps them away from production. With this in mind, it would be of interest to investigate other ways to achieve the effects that team training is intended to produce, with less consumption of resources.

### *Aim*

This paper explores how teamwork can be improved by organizational means, with the aim of showing how organizational design could support teamwork; specifically, the intention is to identify organizational design principles that promote characteristics or factors of the actual teamwork process that enables successful teamwork.

### **Method**

The healthcare literature contains a myriad of team definitions, and there is currently no real consensus about what a team really is (Bleakley, 2013). As the intent in this conceptual paper is to show how teamwork could be promoted or established by organizational means, a wide and pragmatic definition is applied. A team is considered to be *a group of people who are set to work together on a task*, where the task could be, for example, attending to a specific patient or a group of patients. What this group does in relation to their task is here considered

teamwork, with a specific focus on *how* the work is done rather than on what constitutes the task itself (Marks *et al.*, 2001). Many teamwork definitions specify qualities that should be present in order for it to be *real* teamwork, for example *clear roles, interdependence, shared identity, shared decision making, effective methods to accomplish shared goals*, and so on (Reeves *et al.*, 2010; Xyrichis & Ream, 2008; Wheelan, 2005). However, there is room for discussion of whether these factors in reality refer to *qualities of teamwork* or to *qualities of the team* that conducts the teamwork. These kind of qualities are useful if the goal is to investigate the quality of teamwork or teams; however, the present aim is rather to investigate how teamwork could be improved. Thus, it is important to apply a team definition that includes not only already-successful teams, but prospective teams as well. As the definition above highlights that team members should work *together* on the task, it also implies that their work is to some degree interdependent.

The input – process – output model (IPO) of teamwork provides structure to this investigation (Hackman, 1987; Hackman & Morris, 1975; McGrath, 1964). According to the IPO model, *inputs* (i.e. individual-level factors, group-level factors and environment-level factors) provide input to the *teamwork process* that transforms the inputs into work *outputs*. The focus in this paper is on 1) what process characteristics are associated with the desired outputs; that is, teamwork that is safe and effective, and 2) how these process characteristics could be promoted with organizational means. Here, organizational means should be considered as inputs in the IPO model (on the group and environmental level).

The literature on teamwork within the healthcare context was reviewed by the authors in order to find previous studies that identified factors related to the *teamwork process* associated with successful teamwork. This search consisted of, on one hand, systematic searching in Scopus™ for articles and reviews with “*team\**” in the title that could be considered related to patient safety or effective teamwork, and on the other hand, examination of the authors’

previously collected literature on the subject. The selection was focused on review articles and conceptual papers that synthesized previous work on the subject. A group of factors was selected from the literature, using the inclusion criterion was that the factors should be related to the actual teamwork process and to either how teamwork could become more effective or how patient safety could be improved. In other words, they should be associated with the desired outputs. A couple of factors were discarded as they were considered preconditions of the others (see Table 1). Other factors were discarded as they were considered to be trivial and of such a character that they could be considered to be established for most healthcare teams. As the purpose of this paper is to explore how teamwork could be supported and to show how organizational design principles can be used to improve teamwork, rather than to commence a through exhaustive review of everything that is considered to promote teamwork, the only factors investigated were those deemed most salient in the healthcare team literature. The selected factors were described and discussed from an organizational design perspective in relation to the literature associated with each factor, in order to identify organizational characteristics that support them. From this discussion, several organizational design principles deemed to support teamwork were identified.

### **Factors that enable teamwork**

There is already some previous research concerned with organizational characteristics considered beneficial for teamwork in healthcare, in the form of reviews and conceptual papers (Weller *et al.*, 2014; Wahr *et al.*, 2013; Lakhani *et al.*, 2012; Ezziane *et al.*, 2012; Manser, 2009; Xyrichis & Ream, 2008; Lemieux-Charles & McGuire, 2006; Mickan & Rodger, 2000). However, the combination of a holistic perspective on teamwork and a pragmatic, actionable approach is largely missing. The present paper therefore focuses on organizational design principles that are directly actionable; that is, possible to change by management. This does not mean that organizational characteristics such as an *appropriate*

*culture* are unimportant (Mickan & Rodger, 2000), only that they are difficult to improve. Other issues with the organizational characteristics identified in previous research are that they are either too general or too trivial. Overly-general characteristics are those that are too vague; for instance, Lemieux-Charles and McGuire (2006, p. 289) state that “organizational context influences team effectiveness”, but in order to be actionable there is also a need to conclude what a desirable context consists of and identify those aspects of it that are possible to change. Overly-trivial characteristics are those that are already present for most healthcare teams, such as the need for *a clear purpose, a specified task, relevant team members, and distinct roles* (Mickan & Rodger, 2000). Most operating, intensive care or emergency teams have a clear purpose, a specified task, relevant team members and distinct roles, to list a couple of examples from interprofessional care contexts. Thus, a discussion of these factors would add very little. These factors also have in common that they are not really process characteristics but rather *inputs* in the IPO model.

This conceptual paper investigates how a number of teamwork process characteristics (factors) associated with effective teamwork in the healthcare literature on teams could be improved through organizational design. The focus is specifically on the factors *cohesion* (Lakhani et al., 2012; Lemieux-Charles & McGuire, 2006; Mickan & Rodger, 2000), *collaboration* (Manser, 2009; Xyrichis & Ream, 2008; Lemieux-Charles & McGuire, 2006), *communication* (Weller et al., 2014; Wahr et al., 2013; Ezziane et al., 2012; Lakhani et al., 2012; Manser, 2009; Xyrichis & Ream, 2008; Mickan & Rodger, 2000), *conflict resolution* (Wahr et al., 2013; Ezziane et al., 2012; Lemieux-Charles & McGuire, 2006; Mickan & Rodger, 2000), *coordination* (Wahr et al., 2013; Manser, 2009; Mickan & Rodger, 2000), and *leadership* (Ezziane et al., 2012; Lakhani et al., 2012; Manser, 2009; Xyrichis & Ream, 2008; Mickan & Rodger, 2000), which are labeled here as *teamwork enablers*. A complete list of all factors considered is given in Table 1.

→ INSERT TABLE 1 ABOUT HERE

**Table 1. A list of all factors related to the teamwork process considered for inclusion.**

<b>Factors included</b>	<p><i>Cohesion</i> (Lakhani <i>et al.</i>, 2012; Lemiux-Charles &amp; McGuire, 2006; Mickan &amp; Rodger, 2000)</p> <p><i>Collaboration</i> (Manser, 2009; Xyrichis &amp; Ream, 2008; Lemiux-Charles &amp; McGuire, 2006)</p> <p><i>Communication</i> (Weller <i>et al.</i>, 2014; Wahr <i>et al.</i>, 2013; Ezziane <i>et al.</i>, 2012; Lakhani <i>et al.</i>, 2012; Manser, 2009; Xyrichis &amp; Ream, 2008; Mickan &amp; Rodger, 2000)</p> <p><i>Conflict resolution</i> (Wahr <i>et al.</i>, 2013; Ezziane <i>et al.</i>, 2012; Lemiux-Charles &amp; McGuire, 2006; Mickan &amp; Rodger, 2000)</p> <p><i>Coordination</i> (Wahr <i>et al.</i>, 2013; Manser, 2009; Mickan &amp; Rodger, 2000)</p> <p><i>Leadership (and decision making)</i> (Ezziane <i>et al.</i>, 2012; Lakhani <i>et al.</i>, 2012; Manser, 2009; Xyrichis &amp; Ream, 2008; Mickan &amp; Rodger, 2000)</p>
<b>Factors excluded</b>	<p><i>Coaching</i> (Wahr <i>et al.</i>, 2013)</p> <p><i>Cooperation</i> (Wahr <i>et al.</i>, 2013)</p> <p><i>Mutual respect</i> (Weller <i>et al.</i>, 2014; Lakhani <i>et al.</i>, 2012)</p> <p><i>Participation</i> (Lemiux-Charles &amp; McGuire, 2006)</p> <p><i>Purpose goals</i> (Lakhani <i>et al.</i>, 2012)</p> <p><i>Reflection</i> (Lakhani <i>et al.</i>, 2012)</p> <p><i>Shared mental models</i> (Weller <i>et al.</i>, 2014; Wahr <i>et al.</i>, 2013; Manser, 2009)</p> <p><i>Social relationships</i> (Mickan &amp; Rodger, 2000)</p> <p><i>Trust</i> (Weller <i>et al.</i>, 2014)</p>

As can be seen in Table 1, decision making was considered to be part of *leadership*. Mutual respect, social relationships, purpose goals, cooperation, coaching and reflection are not considered salient enough in the literature to be included, but it should be acknowledged that some aspects of them are represented in the other enablers. Trust and shared mental models were considered important preconditions for several of the enablers included, and so they are indirectly included.

Even though the definition of teamwork in healthcare is somewhat pluralistic (Bleakley, 2013; Xyrichis & Ream, 2008), the six teamwork enablers identified above provide an indication of what is desirable to put in place for successful teamwork to occur in a healthcare context. All

of the factors have in common that they exist on the group level and are concerned with qualities that can be identified as part of the actual teamwork process, while still not pointing out specific desirable behaviors, as the latter are too context-specific and normative. They all appear on several occasions in the literature about desirable process characteristics of healthcare teams (Weller *et al.*, 2014; Wahr *et al.*, 2013; Ezziane *et al.*, 2012; Lakhani *et al.*, 2012; Manser, 2009; Xyrichis & Ream, 2008; Lemieux-Charles & McGuire, 2006; Mickan & Rodger, 2000).

Although the intention here is not to enter into a deeper discussion about exactly how teamwork should be conceptualized and exactly which factors have earned their place in a definitive taxonomy of teamwork, two of the factors included in this investigation, namely *cohesion* and *collaboration*, need some further elaboration at this point.

Firstly, in line with Mickan and Rodger (2000), cohesion is considered to be associated with the process aspect of teamwork. However, it should be noted that according to some taxonomies of teamwork, cohesion should rather be labeled as an *emergent state* or a *psychosocial trait* (Marks *et al.*, 2001; Cohen & Bailey, 1997), where an emergent state refers to “constructs that characterize *properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes and outcomes*” (Marks *et al.*, 2001, p. 357). According to Marks *et al.*, (2001) teamwork processes refer solely to interaction between different team members and team members and their task environment. From their perspective, cohesion is both an input and an output, but is still not considered as a characteristic of the teamwork process itself (Marks *et al.*, 2001). Given that the present aim is to pragmatically identify organizational design principles that promote teamwork in relation to factors associated with effective teamwork, this will not be investigated any further here, but it should still be acknowledged that there are different opinions in the research literature on whether or not cohesion should be considered to be associated with the teamwork process.

Even if not seen as part of the teamwork process, it could be concluded that, as cohesion is both an input and an output of the process according to the taxonomy of Marks *et al.*, (2001), it is more tightly coupled to the teamwork process than most other inputs or outputs of the teamwork process.

Secondly, while collaboration is frequently associated with better teamwork in the literature, it is also used as a synonym for teamwork (Xyrichis & Ream, 2008; Thomas *et al.*, 2003).

Thus, it could be argued that collaboration is a much broader factor than the other five teamwork enablers, and perhaps even encompasses several of the other factors to some degree. However, as pointed out by Xyrichis & Ream (2008), there is more to teamwork than just interdependent collaboration. It should be noted that there could be some overlap between the different factors, and so it is important to remember that the teamwork enablers presented here should not be considered orthogonal dimensions in a model, as there are quite substantial dependencies and connections between some of them. However, this should not pose a problem, as the purpose of this paper is to show, from a pragmatic standpoint, how teamwork enablers identified in the literature can be facilitated and improved through organizational design, and not to develop a new teamwork model that includes all possible aspects of teamwork. From the perspective applied here, the important part is that collaboration is associated with successful teamwork, and not how it fits into the overall definition of teamwork as such.

The following subsections define the six teamwork enablers and discuss how they can be facilitated by organizational means. Although there are other factors associated with successful teamwork in the vast literature on the subject, the discussion here is limited to the abovementioned six teamwork enablers (see Table 1).

### *Cohesion*

Group cohesion commonly refers to the sum of interpersonal attractions between members of a group, or to that which binds the group together (Brown, 2000). In practice, this means that group cohesion is what makes people like being in the group. From this definition, interpersonal interaction is a necessary requirement for group cohesion to occur: without it, there can be no interpersonal attraction. Group cohesion is generally associated with mature, effective groups (Wheelan, 2005; Tuckman, 1965), and also with group performance. The connection between cohesion and performance appears to be stronger in more interdependent groups (Beal *et al.*, 2003; Gully *et al.*, 1995). Mician and Rodger (2000) point out that cohesion is fostered through a small team size and physical proximity.

From an organization design perspective, this means that to achieve group cohesion, the team must spend time working together for the group to mature and for interpersonal attraction to occur. This implies that a certain amount of *team stability* is a desirable organizational trait.

### *Collaboration*

As with teamwork, “no ‘true’ definition of collaboration actually exists” (Thomson *et al.*, 2009, p. 53) in the literature. This investigation uses a broad definition of collaboration. Here, collaboration refers to *two or more collaborators working together to achieve the same thing*. According to Lawson (2004), collaboration requires interdependent stakeholders; that is, the collaborators need each another to achieve their (common) goal. In the same vein, Thomson *et al.* (2009) assert that collaboration requires mutuality, meaning that the collaborators experience “mutually beneficial interdependences” (Thomson *et al.*, 2009, p. 27).

Furthermore, Woodland & Hutton (2012) state that (organizational) collaboration is formed around a shared purpose. In the operating room setting, this can refer to different professions

working together to provide safe surgery to the patient in as efficient a manner as possible. As mentioned above, collaboration is closely related to the concept of teamwork but it is not exactly the same thing. For instance, according to Xyrichis & Ream (2008), teamwork also implies *shared decision making* and *concerted effort*. From the perspective applied here, it is enough that collaboration is frequently associated with successful teamwork in the literature, but as mentioned above, the reader should be aware that collaboration and teamwork are closely related and in some cases are treated as synonyms.

From an organization design perspective, a crucial aspect of to facilitate collaboration is the development of a common goal (D'Amour *et al.*, 2005). Otherwise, there will not be a truly joint project, but rather interdependent projects going on in parallel, with obvious risks for sub optimization. To avoid sub optimization, the group participants need to agree on and understand the common goal, and be aware of the ways in which their different practices are interdependent. This requires communication, which will be further discussed in the next section.

Manser (2009) points out trust and mutual respect as contributors to good collaboration, and Wheelan *et al.* (2003) show that high-performing teams at intensive care units have a higher level of perceived trust between team members than lower-performing units. The importance of trust is also highlighted by Sims *et al.* (2015).

Newell and Swan (2000) introduce three types of trust: *companion*, *competence* and *commitment trust*. Companion trust has a moral dimension in that the parties involved expect honesty and a genuine will to do their respective parts. It is based on friendship and a belief in goodwill between parties. Competence trust is based on the perception of the trusted parties' competence. This can be established through concrete experience or through contextual cues such as reputation or belonging to a certain group. Holding a license to practice medicine

would be an example of the latter. While companion trust and competence trust can be said to some extent to be based on a belief in the individual, commitment trust is based on formal agreements between parties. In this case, delivery and performance are guaranteed through contractual obligations (Bergh *et al.*, 2011), such as when someone agrees to do a job or take responsibility for a patient. According to Newell and Swan (2000), competence trust is dependent on the trustee's capability to demonstrate the expected competences, and hence can easily break down if the trustee is unable to deliver. On the other hand, companion trust, though it takes time to develop, is more resilient and robust.

The conclusion from this is that trust is important to achieve good collaboration, and that it is a good strategy to encourage companion trust (Bergh *et al.*, 2011). If competence trust breaks down, the team will still have the more resilient companion trust to fall back on. As it takes time to develop companion trust, a certain amount of *team stability* is necessary, since establishing companionship requires opportunities to work together and to socialize within the team. As pointed out by Jones and Jones (2011), trust appears when people have the chance to meet on a frequent basis and to see one another work, and thus realize that the other parties are really going to do what they say. Sims *et al.* (2015) also highlight the importance of physical proximity in order to enable collaboration.

### *Communication*

Manser (2009) states that: 1) openness of communication, 2) quality of communication, and 3) specific communication practices are important communication aspects of teamwork.

Openness of communication requires an organizational climate that encourages the personnel to communicate. It also requires trust; one must feel that speaking up and communicating is something that will not be punished or repressed by colleagues. Edmondson (2003) shows that leadership plays an important role in creating an organizational climate that encourages

people to speak up in the operating room. Edmondson suggests that this can be done by clarifying for team members the value of speaking up and by making them feel safe to do so. The latter can be achieved through a team leadership that downplays power differences in the team. Thus, the organizational principles mentioned in the previous section as supporting trust should be applied, together with a leadership that downplays power differences and is inclusive or *participative* in order to create openness of communication.

Quality of communication requires some sort of *shared frame of reference* or *understanding* (Manser, 2009). In the literature this goes by different names depending on scholarly tradition and perspective, and can be discussed in terms of “framing”, “shared mental models”, “a common language made up of shared significant symbols”, or “intersubjectivity” (Billett, 2014; Edmondson, 2012; Mathieu *et al.*, 2000; Mead, 1934). It is important to note that these terms, while all referring to qualities associated with a shared frame of reference that makes meaningful communication possible, do not refer to exactly the same thing. While the theories of framing and shared mental models come from the domain of cognitive psychology (which is often used to inform team training initiatives), the others are often used in the domains of social psychology and sociology.

According to Mead (1934), significant symbols are developed and given meaning in interaction. Billett (2014) states that intersubjectivity can arise through collaborative work such as joint problem solving. Schegloff (1992) shows how intersubjectivity can be built and repaired through interaction. The emphasis here is on these process aspects of the creation of a shared frame of reference. A shared frame of reference cannot be taken for granted, but must be maintained through interaction; this means that reoccurring interaction in the team improves its grounds for successful communication. Thus, to facilitate communication between team members requires that the team establish a shared frame of reference that itself develops through communication: to become better at communication, one must

communicate. Of course, some of the team's shared frame of reference is provided beforehand by similarities in their educational and cultural backgrounds.

Specific communication practices are pointed out by Manser (2009) as important for communication. This can refer to the provision of dedicated *explicit occasions for communication* such as preoperative team briefings and team morning meetings, formalized checklists (e.g., the WHO Surgical Safety Checklist), structured interprofessional rounds or formalized protocols for communication (e.g., the SBAR [Situation, Background, Assessment, Recommendation]) (Rydenfält *et al.*, 2013; O'Leary *et al.*, 2010; Haig *et al.*, 2006; Lingard *et al.*, 2006; Aston *et al.*, 2005). Team morning meetings have a positive effect on the predictability of work by making it feel more structured, and also offer a way to get to know the other team members (Aston *et al.*, 2005). It is important to note that the role of meetings, as Weick (1995) points out, goes beyond the mere presentation of arguments; in reality, meetings are important occasions for sensemaking in the organization. The establishing of specific communication practices is primarily a question of an explicit organizational structure. It is up to management to decide if the unit should use tools such as SBAR or the WHO Surgical Safety Checklist. However, it should be remembered that just as the openness and quality of communication are primarily dependent on preconditions of a social or psychological nature, one can expect that *the quality of specific communication practices* is affected by these types of preconditions as well.

From an organizational perspective this means that to achieve good communication, the organization should provide *explicit occasions for communication* when appropriate.

However, while that part is easy, the organization also needs to ensure that the team members develop *trust* for each other as well as a *shared frame of reference*. As mentioned, developing trust relationships in a team requires time working together and thus *team stability* (Newell & Swan, 2000). If the team is reasonably stable, then reoccurring *occasions for communication*,

for instance at team meetings or during work, can help develop and improve communication in the team. As shown by Edmondson (2003), it is also important to have a leadership that downplays power differences in the team and hence encourages *participation*.

### *Conflict resolution*

Conflicts occur at all workplaces. Even though the word *conflict* is usually associated with an undesired state concerned with a dispute between two or more parties on a specific topic, conflicts are also associated with positive traits such as learning and development. It is all a matter of how they are resolved. According to Deutsch (1994), conflicts can be both *constructive* and *destructive*. The former is associated with a *cooperative approach* to conflict resolution on behalf of the involved parties, and the latter with an *individualistic* or *competitive approach*. A cooperative approach implies that “The party has a positive interest in the welfare of the other as well as its own” (Deutsch, 1994, p. 14). This is typically something that is facilitated by establishing a common goal. If different team members have different goals, they may instead take on an individualistic or even competitive approach towards conflict resolution. As Jones and Jones (2011) point out, shared objectives (i.e., goals) and trust within the team have positive effects on conflict resolution. West (2012) mentions unclear roles or goals as organizational factors that could cause interpersonal conflicts in teams. Thus, the organizational principles that facilitate trust and a shared frame of reference (which in turn are achieved through communication) also apply to conflict resolution. Team stability has previously been pointed out as a trait associated with a lower level of conflict in surgical teams (Rogers *et al.*, 2013). This implies that *team stability* and *occasions for communication* are important organizational principles for facilitating conflict resolution within the team.

## *Coordination*

*Coordination* refers to the effective interaction of actions. Manser (2009) highlights that routine tasks involves more implicit coordination, for example, nonverbal clues such as body postures, or placement of tools or the patient. Critical situations, though, require more explicit coordination; that is, more direct leadership. Investigating coordination in a joint activity, Klein *et al.* (2005, p. 145) state that “Coordination depends on the ability to predict the actions of other parties with a reasonable degree of accuracy”. Hence, interpredictability is a crucial precondition for coordination, and according to Klein *et al.* (2005), interpredictability requires a common ground. Common ground, in turn, is defined as “the *pertinent* mutual knowledge, mutual beliefs and mutual assumptions that support interdependent actions” (Klein *et al.*, 2005, p. 146). Klein *et al.* point out that common ground is not the same as having the same knowledge — that is, the same mental model — but a process of communicating, testing and updating mutual understandings. As such, common ground has much in common with the concept of intersubjectivity (Billett, 2014; Schegloff, 1992); more specifically, with the process through which intersubjectivity is achieved, updated and repaired.

Standardization and more routines can be a way to enhance predictability. Examples of such routines are the SBAR and the WHO Surgical Safety Checklist (Haynes *et al.*, 2009; Haig *et al.*, 2006). However, failure to comply with routines can actually introduce a false sense of predictability or safety (Rydenfält *et al.*, 2014). Another way to enhance predictability would be to ensure that a good common ground is established. From this perspective, coordination can benefit from enabling communication, testing and updating of mutual understandings (i.e., *continuously updating and developing a shared frame of reference*) and stability, this it would also make it possible to take advantage of an existing common ground. As Weick and Sutcliffe (2007, p. 28) point out, “It takes time to develop smooth coordination.” In addition

to a certain amount of *team stability*, this process requires *communication*; thus, the demands that are valid for facilitating communication also apply to coordination. For example, *occasions for communication*, like regular morning meetings, can increase predictability (Aston *et al.*, 2005).

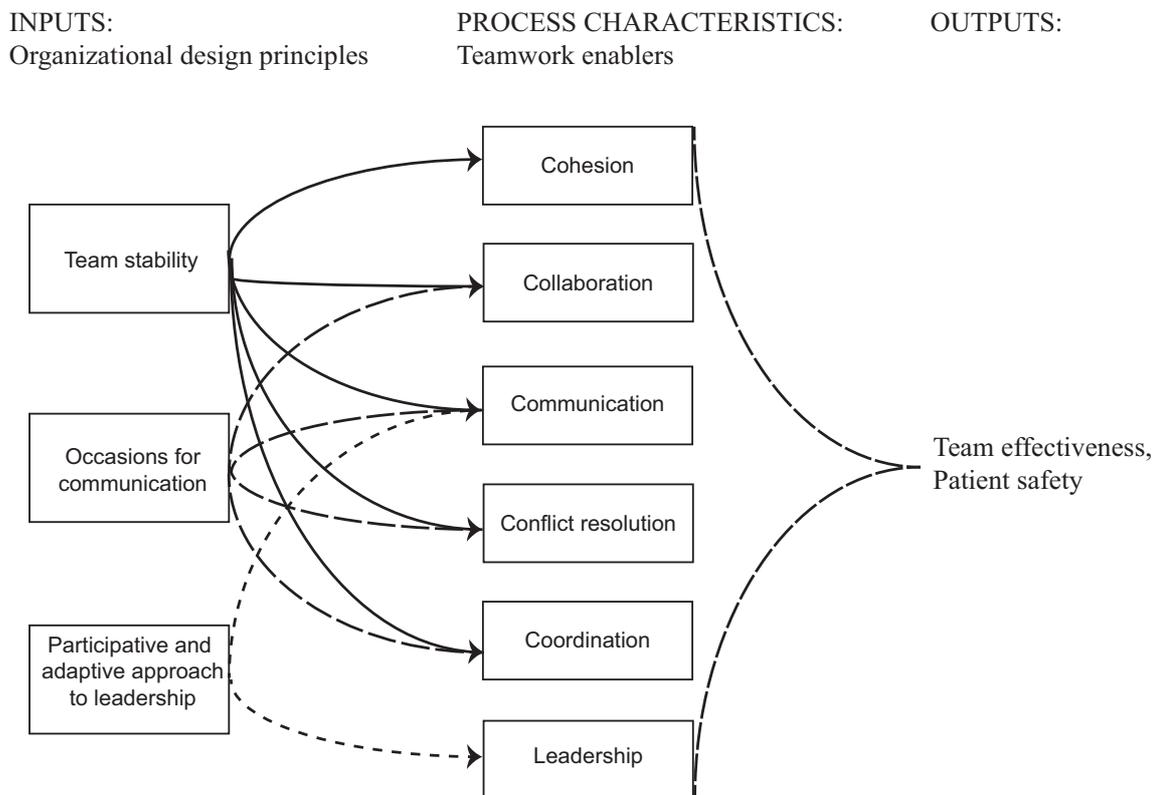
### **Leadership**

One commonly referred to definition of leadership is that of Yukl: “Leadership is the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives” (2013, p. 23). From this definition it can be concluded that leadership is about influencing and facilitating others’ actions. Manser (2009) points out that valuing contributions from staff, encouraging *participation* in decision making and taking an *adaptive approach to leadership* (i.e., applying more leadership when needed) are leadership characteristics important for safety. As previously mentioned, it is important to downplay power differences in the team in order to create a climate where all team members feel safe to participate by speaking up (Edmondson, 2003). In other words, distributed leadership should be encouraged; that is, staff should contribute to and participate in the leadership of the team, but the formal leader should step up and provide more leadership in an adaptive manner when necessary. In fact, recent studies of distributed leadership in healthcare contexts such as the operating team and trauma team reveal that leadership is distributed to some extent, with different professions taking leadership responsibility for different things (Rydenfält *et al.*, 2015; Klein *et al.*, 2006;).

### **Organizational design principles that promote the six teamwork enablers**

Certain themes have reoccurred in the theoretical investigation of the teamwork enablers above, and it is obvious that the teamwork enablers are not totally independent of each other.

Three organizational principles with a potentially positive effect on teamwork have been identified: 1) *team stability*, 2) *occasions for communication*, and 3) *a participative and adaptive approach to leadership*. These three organizational principles will be discussed in order below, and their relationship with the different teamwork enablers is illustrated in Figure 1.



**Figure 1. The relationship between the organizational design principles and the six teamwork enablers.**

***Team stability***

*Team stability*, which describes the amount of change in team constellations over time, is crucial for the implementation of five of the six teamwork enablers. In an operating room context, this can refer to the number of team members that are changed between or during surgical procedures, while at a care unit it can refer to the degree to which personnel in the team change between shifts. Many healthcare units assign personnel to different teams in an *ad hoc* manner, with huge variation from day to day and even from procedure to procedure.

Team stability is very important to facilitate trust building, and trust is important in creating effective communication, collaboration and conflict resolution. Team stability also has another positive side effect, namely that it reduces the number of hand-offs between personnel when the team members change during a shift (Kalisch *et al.*, 2008). This not only improves communication, but also reduces the need for communication. This does not mean that a team has to consist of the same people all the time, but rather that the turnover is decreased. For example by splitting larger units into smaller sub-units in such a way that the personnel for each team are made up only of personnel attached to that particular sub-unit. In this way, the number of people each team member has to relate to can be decreased from hundreds to perhaps 20. This can also be achieved through the use of fixed shifts (Kalisch *et al.*, 2008).

### *Occasions for communication*

*Occasions for communication* include both *explicitly designed occasions* such as the WHO Surgical Safety Checklist timeout or interprofessional rounds, and *implicit occasions* that indirectly encourage communication as part of the daily routine. The latter refers to common coffee and lunch breaks and spontaneous meeting places that provide affordances for interaction and communication. Previous research has shown that the *space* in which interprofessional interaction takes place can be a facilitator for workplace learning across profession boundaries (Gregory *et al.*, 2014), and so it is important to provide facilities that encourage interaction between different team members and different professions in the team. Other examples of explicit occasions for communication are recurring short briefings or huddles and morning meetings that have been associated with better information sharing, empowerment, communication, predictability and sense of community, all of which can benefit patient safety (Goldenhar *et al.*, 2013; Aston *et al.*, 2005).

### *A participative and adaptive approach to leadership*

*A participative and adaptive approach to leadership* means that someone in the team can step up and take formal responsibility as a leader when necessary, but that participation in leadership by the staff is also encouraged. This implies that power differences are downplayed by the team leader and that a more distributed approach to leadership is used when appropriate (Bienefeld & Grote, 2011; Künzle *et al.*, 2010; Klein *et al.*, 2006; Pearce & Conger, 2003). It should be noted that while team stability and occasions for communication are exclusively associated with the organizational design, *a participative and adaptive approach to leadership* is also a matter of behavior. As such, it is a behavior that the formal leadership of a unit can influence through 1) leading by example, and 2) framing of the roles of the team leaders and the other team members as communicated by the management. The framing of roles can, for instance, refer to the role the physician is expected to take as the formal team leader.

### **Discussion and conclusions**

In terms of the IPO model, the approach presented here is concerned with how inputs to the teamwork process on the *group* and *environmental level* could improve the process. On the other hand, traditional team training is mainly concerned with inputs on the *individual level*; that is, the non-technical skills of the individual as input to the teamwork process (Hackman & Morris, 1975).

Compared to traditional team training, the organizational design approach described here does not require that personnel are away from production for several days in order to undergo training; nor does it, as in traditional team training, require continuous refresher training (Thomas & Galla, 2013). Rather, the idea is that the organization should be designed so that the everyday work, in itself, promotes and facilitates teamwork. This approach thus differs

from the more traditional training approach, as it applies a strategy of *organizing for learning* rather than *arranging occasions for learning* (Edmondson, 2012; Döös, 2007). The organizational principles have been deliberately formulated so that they can be implemented directly, and in such a way as to allow the appearance of the conditions required for the team to learn and develop their capabilities in relation to the six teamwork enablers. This in turn makes more explicit the connections between the teamwork enablers reported in the literature on teamwork in healthcare and the actual organization of work.

The decision to limit this investigation of teamwork process characteristics to previously published peer-reviewed reviews and conceptual papers might have somewhat decreased the total number of factors considered. However, it is very likely that any factors salient in the research literature would also have appeared in at least some of the reviews and conceptual papers considered. One can thus be confident that the factors included here are quite representative of the process characteristics that are indeed considered important for teamwork in healthcare, and hence that these factors provide a good base for this investigation of organizational design principles that can promote teamwork. However, if the purpose of this conceptual paper had been to develop a new teamwork model, it would have been a different matter.

Besides their direct practical implications, the findings presented in this conceptual paper could be used: 1) as a foundation for intervention studies testing exactly how and to what extent an organizing for teamwork approach affects team performance, and 2) as an analytic framework for case studies concerned with how the organization actually affects team performance. Given the limited focus that has been placed on the organizational aspects of teamwork in healthcare compared to the vast literature on team training, it would clearly be beneficial to undertake these types of studies in the future.

Today's healthcare organizations spend substantial resources on team training to improve teamwork in specialized healthcare contexts where many specialties and professions must interact to get the job done. The present article has investigated how teamwork-enabling organizational traits from the literature on teams in healthcare can be facilitated through organizational design measures. This can be achieved by:

- Providing *team stability* to ensure that the same personnel constellations work together regularly.
- Providing opportunities to interact socially and a structure that encourages communication in the team; that is, *occasions for communication*.
- Encouraging distributed or shared leadership while ensuring that some individual has the mandate to step up and take formal leadership when necessary; that is, a *participative and adaptive approach to leadership*.

This investigation shows that, with these measures, it is possible to achieve many of the organizational traits associated with good teamwork. Although organizing for teamwork is a promising approach, it is not recommended to go as far as to replace traditional team training with it, but rather to use it as a complement to team training.

### **Acknowledgments**

We would like to thank the Gorthon foundation for supporting Christofer Rydenfält as a doctoral student. The Gorthon foundation is a private foundation residing in Helsingborg, Sweden. The authors report no conflicts of interest.

## References

- Aston, J., Shi, E., Bullôt, H., Galway, R., & Crisp, J. (2005), "Qualitative evaluation of regular morning meetings aimed at improving interdisciplinary communication and patient outcomes", *International Journal of Nursing Practice*, Vol. 11 No. 5, pp. 206-213.
- Awad, S.S., Fagan, S.P., Bellows, C., Albo, D., Green-Rashad, B., De La Garza, M., & Berger, D.H. (2005), "Bridging the communication gap in the operating room with medical team training", *The American Journal of Surgery*, Vol. 190 No. 5, pp. 770-774.
- Beal, D. J., Cohen, R. R., Burke, M. J. & McLendon, C. L. (2003), "Cohesion and Performance in Groups: A Meta-Analytic Clarification of Construct Relations", *Journal of Applied Psychology*, Vol. 88 No. 6, pp. 989-1004.
- Bergh, P., Thorgren, S., & Wincent, J. (2011), "Entrepreneurs learning together: The importance of building trust for learning and exploiting business opportunities" *International Entrepreneurship and Management Journal*, Vol. 7 No. 1, pp. 17-37.
- Bienefeld, N., & Grote, G. (2011), "Teamwork in an Emergency: How Distributed Leadership Improves Decision Making", *Proceedings of the Human Factors and Ergonomics Society 55th Annual Meeting. Human Factors and Ergonomics Society 55th Annual Meeting*, pp. 110-114.
- Billett, S. R. (2014), "Securing intersubjectivity through interprofessional workplace learning experiences", *Journal of Interprofessional Care*, Vol. 28 No. 3, pp. 206-211.
- Bleakley, A. (2013), "Working in "teams" in an era of "liquid" healthcare: What is the use of theory?", *Journal of Interprofessional Care*, Vol. 27 No. 1, pp. 18-26.
- Brown, R. (2000), *Group processes dynamics within and between groups* (2nd ed.), Blackwell Publishers, Oxford.

- Buljac-Samardzic, M., Dekker-van Doorn, C.M., van Wijngaarden, J.D.H., & van Wijk, K.P. (2010), "Interventions to improve team effectiveness: A systematic review", *Health Policy*, Vol. 94 No. 3, pp. 183-195.
- Cohen, S. G. & Bailey, D. E. (1997), "What Makes Teams Work: Group Effectiveness Research from the Shop Floor to the Executive Suite", *Journal of Management*, Vol. 23 No. 3, pp. 239-290.
- D'Amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M.-D. (2005), "The conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks", *Journal of Interprofessional Care*, Vol. 19 No. s1, pp. 116-131.
- Deutsch, M. (1994), "Constructive Conflict Resolution: Principles, Training, and Research", *Journal of Social Issues*, Vol. 50 No. 1, pp. 13-32.
- Döös, M. (2007), "Organizational learning. Competence-bearing relations and breakdowns of workplace relatronics", In L. Farrell & T. Fenwick (Eds.), *World Yearbook of Education*, Routledge, New York, NY, pp. 141-153.
- Edmondson, A. C. (2012), *Teaming: how organizations learn, innovate, and compete in the knowledge economy*, Jossey-Bass, San Francisco, Calif.
- Edmondson, A. C. (2003), "Speaking Up in the Operating Room: How Team Leaders Promote Learning in Interdisciplinary Action Teams", *Journal of Management Studies*, Vol. 40 No. 6, pp. 1419-1452.
- Flin, R. H., O'Connor, P., & Crichton, M. (2008), *Safety at the sharp end a guide to non-technical skills*, Ashgate, Aldershot, England.
- Forse, A. R., Bramble, J. D., & McQuillan, R. (2011), "Team training can improve operating room performance", *Surgery*, Vol. 150 No. 4, pp. 771-778.
- Gafà, M., Fenech A., Scerri C., & Price D. (2005), "Teamwork in healthcare organisations", *Pharmacy Education*, Vol. 5 No. 2, pp. 113-119.

- Goldenhar, L. M., Brady, P. W., Sutcliffe, K. M., & Muething, S. E. (2013), "Huddling for high reliability and situation awareness", *BMJ Quality and Safety*, Vol 22 No. 11, pp. 899-906.
- Gregory, L. R., Hopwood, N., & Boud, D. (2014), "Interprofessional learning at work: what spatial theory can tell us about workplace learning in an acute care ward", *Journal of Interprofessional Care*, Vol. 28 No. 3, pp. 200-205.
- Gully, S. M., Devine, D. J. & Whitney, D. J. (1995), "A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence", *Small Group Research*, Vol. 26 No. 4, pp. 497-520.
- Hackman, J. R. (1987), "The design of work teams" In J. Lorsch (ed.), *Handbook of organizational behavior*, Prentice-Hall, Englewood Cliffs, NJ, pp. 315-342.
- Hackman, J. R. & Morris, C. G. (1975), "Group tasks, group interaction process, and group performance effectiveness: A review and proposed integration," In L. Berkowitz (ed.), *Advances in Experimental Social Psychology (vol 8)*, Academic Press, New York, NY, pp. 45-99.
- Haig, K.M., Sutton, S., & Whittington, J. (2006), SBAR: A Shared Mental Model for Improving Communication Between Clinicians, *Joint Commission Journal on Quality and Patient Safety*, Vol. 32, No. 3, 167-175.
- Hall, P. (2005), "Interprofessional teamwork: Professional cultures as barriers", *Journal of Interprofessional Care*, Vol.19 No. s1, pp. 188-196.
- Haynes, A. B., Weiser, T. G., Berry, W. R., Lipsitz, S. R., Breizat, A.-H. S., Dellinger, E. P. et al. (2009), "A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population", *The New England Journal of Medicine*, Vol. 360 No. 5, pp. 491-499.

- Heale, R., Dickieson, P., Carter, L., & Wenghofer, E. F. (2014), "Nurse practitioners' perception of interprofessional team functioning with implications for nurse managers", *Journal of Nursing Management*, Vol. 22 No. 7, pp. 924-930.
- Jones, A., & Jones, D. (2011), "Improving teamwork, trust and safety: An ethnographic study of an interprofessional initiative", *Journal of Interprofessional Care*, Vol. 25 No. 3, pp. 175-181.
- Kalisch, B. J., Begeny, S., & Anderson, C. (2008), "The Effect of Consistant Nursing Shifts on Teamwork and Continuity of Care", *The journal of nursing administration*, Vol. 38 No. 3, pp. 132-137.
- Kalisch, B. J., Lee, H., & Rochman, M. (2010), "Nursing staff teamwork and job satisfaction", *Journal of Nursing Management*, Vol. 18 No. 8, pp. 938-947.
- Klein, G., Feltovich, P. J., Bradshaw, J. M., & Woods, D. D. (2005), "Common ground and coordination in joint activity", In W.B. Rouse & K. R. Boff (Eds.), *Organizational Simulation*, Wiley, Hoboken, NJ, pp. 139-184.
- Klein, K. J., Ziegert, J. C., Knight, A. P., & Xiao, Y. (2006), "Dynamic Delegation: Shared, Hierarchical, and Deindividualized Leadership in Extreme Action Teams", *Administrative Science Quarterly*, Vol. 51 No. 4, pp. 590-621.
- Künzle, B., Zala-Mezö, E., Wacker, J., Kolbe, M., Spahn, D. R., & Grote, G. (2010), "Leadership in anaesthesia teams: the most effective leadership is shared", *Quality Safety Health Care*, Vol. 19 No. e46, pp. 1-6.
- Kurmann, A., Keller, S., Taschan-Semmer, F., Seelandt, J., Semmer, N.K., Candinas, D., & Beldi, G. (2014), "Impact of Team Familiarity in the Operating Room on Surgical Complications", *World Journal of Surgery*, Vol. 38 No. 12, pp. 3047-3052.

- Kvarnström, S. (2008), "Difficulties in collaboration: A critical incident study of interprofessional healthcare teamwork", *Journal of Interprofessional Care*, Vol. 22 No. 2, pp. 191-203.
- Lakhani, J., Benzies, K., & Hayden, K.A. (2012), "Attributes of Interdisciplinary Research Teams: A Comprehensive Review of the Literature", *Clinical & Investigative Medicine*, Vol. 35 No. 5, pp. 260-265.
- Lawson, H. A. (2004), "The logic of collaboration in education and the human services", *Journal of Interprofessional Care*, Vol. 18 No. 3, pp. 225-237.
- Lemieux-Charles, L., & McGuire, W. L. (2006), "What Do We Know about Health Care Team Effectiveness? A Review of the Literature", *Medical Care Research and Review*, Vol. 63 No. 3, pp. 263-300.
- Lingard, L., Espin, S., Whyte, S., Regehr, G., Baker, G.R., Reznick, R., Bohnen, J., Orser, B., & Doran, D. (2004), "Communication failures in the operating room: an observational classification of recurrent types and effects", *Quality Safety Health Care*, Vol. 13 No. 5, pp. 330-334.
- Lingard, L., Whyte, S., Espin, S., Baker, G. R., Orser, B., & Doran, D. (2006), "Towards safer interprofessional communication: Constructing a model of "utility" from preoperative team briefings", *Journal of Interprofessional Care*, Vol. 20 No. 5, pp. 471-483.
- Manser, T. (2009), "Teamwork and patient safety in dynamic domains of healthcare: a review of the literature", *Acta Anaesthesiologica Scandinavica*, Vol. 53 No. 2, pp. 143-151.
- Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). "A temporally based framework and taxonomy of team processes", *Academy of Management Review*, Vol 26 No. 3, pp. 356-376.

- Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Salas, E., & Cannon-Bowers, J. A. (2000), "The Influence of Shared Mental Models on Team Process and Performance", *Journal of Applied Psychology*, Vol. 85 No. 2, pp. 273-283.
- Maynard, M.T., Marshall, D., & Dean, M.D. (2012), "Crew Resource Management and Teamwork Training in Health Care: A review of the literature and recommendations for how to leverage such interventions to enhance patient safety", *Annual Review of Health Care Management: Strategy and Policy Perspectives on Reforming Health Systems (Advances in Health Care Management)*, Vol. 13, pp. 59-91.
- Mazzocco, K., Petitti, D.B., Fong, K.T., Bonacum, D., Brookey, J., Graham, S., Lasky, R.E., Sexton, B., & Thomas, E.J. (2009), "Surgical team behaviors and patient outcomes", *The American Journal of Surgery*, Vol. 197 No. 5, pp. 678-685.
- McCulloch, P., Rathbone, J., & Catchpole, K. (2011), "Interventions to improve teamwork and communications among healthcare staff", *British Journal of Surgery*, Vol. 98 No. 4, pp. 469-479.
- McGrath, J.E. (1964), *Social psychology: a brief introduction*, Holt, Rinehart and Winston, New York, NY.
- Mead, G. H. (1934). *Mind, self and society from the standpoint of a social behaviourist*, The University of Chicago Press, Chicago, IL.
- Mickan, S. & Rodger, S. (2000), "Characteristics of effective teams: a literature review", *Australian Health Review*, Vol. 23 No. 3, pp. 201-208.
- Neily, J., Mills, P.D., Young-Xu, Y., Carney, B.T., West, P., Berger, D.H., Mazzia, L.M., Paull, D.E., & Bagian, J.P. (2010), "Association Between Implementation of a Medical Team Training Program and Surgical Mortality", *The Journal of the American Medical Association*, Vol. 304 No. 15, pp. 1693-1700.

- Newell, S., & Swan, J. (2000), "Trust and inter-organizational networking", *Human Relations*, Vol. 53 No. 10, pp. 1287-1329.
- O'Leary, K.J., Wayne, D.B., Haviley, C., Slade, M.E., Lee, J., & Williams, M.V. (2010), "Improving Teamwork: Impact of Structured Interdisciplinary Rounds on a Medical Teaching Unit", *Journal of General Internal Medicine*, Vol. 25 No. 8, pp. 826-832.
- Oandasan, I.F., Gotlib Conn, L., Lingard, L., Karim, A., Jakubovicz, D., Whitehead, C., Miller, K.-L., Kennie, N., & Reeves, S. (2009), "The impact of space and time on interprofessional teamwork in Canadian primary health care settings: implications for health care reform", *Primary Health Care Research & Development*, Vol. 10 No. 2, pp. 151-162.
- Pearce, C. L., & Conger, J. A. (2003), *Shared leadership: Reframing the Hows and Whys of Leadership*. Sage, Thousand Oaks, Calif.
- Pfrimmer, D. (2009), "Teamwork and Communication", *The Journal of Continuing Education in Nursing*, Vol. 40 No. 7, pp. 294-295.
- Reeves, S., Kitto, S., & Masiello, I. (2013), "Crew resource management: How well does it translate to an interprofessional healthcare context?", *Journal of Interprofessional Care*, Vol. 27 No. 3, pp. 207-209.
- Reeves, S., Lewin, S., Espin, S., & Zwarenstein, M. (2010), *Interprofessional Teamwork in Health and Social Care*, Wiley-Blackwell, Oxford.
- Rogers, D.A., Lingard, L., Boehler, M.L., Espin, S., Schindler, N., Klingensmith, M., & Mellinger, J.D. (2013), "Foundations for teaching surgeons to address the contributions of systems to operating room team conflict", *The American Journal of Surgery*, Vol. 206 No. 3, pp. 428-432.

- Rydenfält, C., Ek, Å., & Larsson, P. A. (2014), "Safety checklist compliance and a false sense of safety: new directions for research", *BMJ Quality and Safety*, Vol. 23 No. 3, pp. 183-186.
- Rydenfält, C., Johansson, G., Larsson, P. A., Åkerman, K., & Odenrick, P. (2012), "Social structures in the operating theater: How contradicting rationalities and trust affect work", *Journal of Advanced Nursing*, Vol 68. No. 4, pp. 783-795.
- Rydenfält, C., Johansson, G., Odenrick, P., Åkerman, K., & Larsson, P. A. (2013), "Compliance with the WHO Surgical Safety Checklist: Deviations and possible improvements", *International Journal for Quality in Health Care*, Vol. 25 No. 2, pp. 182-187.
- Rydenfält, C., Johansson, G., Odenrick, P., Åkerman, K., & Larsson, P. A. (2015), "Distributed leadership in the operating room: a naturalistic observation study", *Cognition Technology & Work*, Vol. 17 No. 3, pp. 451-460.
- Schegloff, E. A. (1992), "Repair after Next Turn: The Last Structurally Provided Defense of Intersubjectivity in Conversation", *American Journal of Sociology*, Vol. 97 No. 5, pp. 1295-1345.
- Schmutz, J. & Manser, T. (2013), "Do team processes really have an effect on clinical performance? A systemic literature review", *British Journal of Anaesthesia*, Vol. 110 No. 4, pp. 529-544.
- Sims, S., Hewitt, G. & Harris, R. (2015), "Evidence of collaboration, pooling of resources, learning and role blurring in interprofessional healthcare teams: a realist synthesis", *Journal of Interprofessional Care*, Vol. 29 No. 1, pp. 20-25.
- Thomas, L., & Galla, C. (2013), "Building a culture of safety through team training and engagement", *BMJ Quality and Safety*, Vol. 22 No. 5, pp. 425-434.

- Thomas, E. J., Sexton, J. B. & Helmreich, R. L. (2003), "Discrepant attitudes about teamwork among critical care nurses and physicians", *Critical Care Medicine*, Vol. 31 No. 3, pp. 956-959.
- Thomson, A. M., Perry, J. L. & Miller, T. K. (2009), "Conceptualizing and Measuring Collaboration", *Journal of Public Administration Research and Theory*, Vol. 19 No. 1, pp. 23-56.
- Tuckman, B. W. (1965), "Developmental sequence in small groups", *Psychological Bulletin*, Vol. 63 No. 6, pp. 384-399.
- Undre, S., Sevdalis, N., Healey, A., Darzi, A., & Vincent, C. A. (2006), "Teamwork in the operating theatre: cohesion or confusion?", *Journal of Evaluation in Clinical Practice*, Vol. 12 No. 2, pp. 182-189.
- Wahr, J.A., Prager, R.L., Abernathy, J.H., Martinez, E.A., Salas, E., Seifert, P.C., Groom, R.C., Spiess, B.D., Searles, B.E., Sundt, T.M., Sanchez, J.A., Shappell, S.A., Culig, M.H., Lazzara, E.H., Fitzgerald, D.C., Thourani, V.H., Eghtesady, P., Ikonomidis, J.S., England, M.R., Sellke, F.W., & Nussmeier, N.A. (2013), "Patient Safety in the Cardiac Operating Room: Human Factors and Teamwork", *Circulation*, Vol. 128 No 10, pp.1139-1169.
- Weick, K. E. (1995), *Sensemaking in organizations*, Sage Publications, Thousand Oaks, Calif.
- Weick, K. E., & Sutcliffe, K. M. (2007), *Managing the unexpected - Resilient performance in an age of uncertainty* (2 ed.), Jossey-Bass, San Francisco, Calif.
- Weller, J., Boyd, M., & Cumin, D. (2014), "Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare", *Postgrad Medicine Journal*, Vol. 90, pp. 149-154.

- Welp, A. & Manser, T. (2016), "Integrating teamwork, clinician occupational well-being and patient safety - development of a conceptual framework based on a systematic review", *BMC Health Services Research*, Vol 16 No. 281, pp. 1-44.
- West, M.A. (2012), *Effective Teamwork: Practical Lessons from Organizational Research* (3 ed.), John Wiley & Sons, Chichester, West Sussex.
- Wheelan, S. A. (2005), *Group processes : a developmental perspective* (2 ed.), Allyn and Bacon, Boston, MA.
- Wheelan, S. A., Burchill Christian.N., & Tilin, F. (2003), "The link between teamwork and patients' outcomes in intensive care units", *American Journal of Critical Care*, Vol. 12 No. 6, pp. 527-534.
- Woodland, R. H. & Hutton, M. S. (2012), "Evaluating Organizational Collaborations: Suggested Entry Points and Strategies", *American Journal of Evaluation*, Vol. 33 No. 3, pp. 366-383.
- Xyrichis, A., & Ream, E. (2008), "Teamwork: a concept analysis", *Journal of Advanced Nursing*, Vol. 61 No. 2, pp. 232-241.
- Yukl, G. (2013). *Leadership in Organizations* (8 ed.). Pearson, Harlow, England.