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Board 397 - Research Abstract

A Model for Capturing Team Adaptation in Simulated Emergencies: The Importance of Updates (Submission #950)

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Introduction/Background: Acute critical situations and emergencies are among the most challenging situations in medicine where acute care teams are often constituted on an ad hoc basis. In such types of teams, it is obvious that excellent performance depends on the ability of the team to function in a coordinated, effective manner. In this regard, interprofessional team communication plays a pivotal role for patient safety. In social psychological or organizational studies, communication is often oversimplified and treated statistically or mechanistically and often represented by simple communication events like closed-loop communication.¹ A more nuanced understanding of team communication has the potential to enhance scholarship in interprofessional endeavours. In high risk environments, team performance depends on the ability of teams to quickly alter actions in response to rapidly changing conditions.^{2,3} However, research on team adaptation in healthcare is scarce.⁴ In this study, team adaptation in medical emergency teams was explored through the quality and content of updates. Updating is an ongoing process of incorporating interpretations based on new information with current beliefs.⁵ Research on how teams adapt to unforeseen changes or non-routine events supports the idea that updating is somehow difficult to accomplish.^{6,7}

Methods: Thirty emergency physicians and nurses participated in a Simulator Instructor Course at SkejSim Medical Simulation and Skills Training, Aarhus, Denmark in May-June 2012. The study was exempted from approval from the Danish National Committee of Health Research. The study has been reported to the Danish Data Protection Agency. All participants volunteered and written informed consent was obtained. Twenty nine simulation scenarios were recorded and reviewed. The research design used an explorative case study methodology to answer the research question: Which factors most strongly mediate adaptive team performance?

Results: Through an iterative, inductive process, data supported the building of the Team Adaptation Tool (TATool) that captures and conceptualizes team processes through recursive cycles of updates. In the 29 simulation scenarios, 94 updates were recorded. There were between 0 and 8 updates per scenario (mean 3.2). Level five was achieved in 13 scenarios, level four in 8 scenarios and finally, level two and three were achieved in four scenarios. Level one was not achieved as the highest level in any scenario. Teams were found to differ in ability to develop and perform updating processes, in their ability to adapt to unforeseen changes and adjust courses of action. These differences could be explained using the five-level TATool.

Conclusion: The trend in the literature is towards studying teamwork as a cluster of behaviours. However, we argue that communication between team members is the core concept in patient safety discourse to keep the team coordinated and at the right track. We found that those teams that were able to recognize changes, adjust priorities and implement adjusted strategies were more likely to perform successfully in environments with unforeseen changes, in other words adaptability is the generalization of trained knowledge and skills to new, more difficult and more complex tasks. An interpretative approach is required to meaningfully account for communication exchanges in context. As such, this theoretical framework might provide a vocabulary for operationalizing the differences between "effective and ineffective" communication. Moving beyond counting communication events or the frequency of certain communications, the empirical metric moves from how much communication to what messages are communicated and how are these messages interpreted.¹ Despite the complexity of interprofessional team communication, the TATool might provide a significant framework for the construct of adaptive team performance. Further, the TATool can be applied as a team training tool to help practitioners develop effective team performance skills based on metacognition of adaptive team performance through effective team communication.

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