

# **Adaptive team coordination in anaesthesia teams: measures for diagnosis and improvement**

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## Introduction

Depending on situational demands, teams should use different coordination mechanisms, such as explicit vs. implicit, impersonal vs. personal and hierarchical vs. lateral coordination. Based on results from studying team coordination in different work phases in cockpit crews (Grote et al., 2004), we analyzed team coordination during anaesthesia induction, with the aim of identifying adaptive coordination patterns. We hypothesized that high standardization should coincide with high implicit coordination and little leadership behavior and little heedful interrelating, while high task load should coincide with high heedful interrelating, high implicit coordination, and little leadership behavior

## Method

We analyzed 23 teams during anaesthesia induction, using indicators for different coordination mechanisms:

- explicit (resources are spent on coordination as such) vs. implicit coordination (actions are coordinated without extra resources based e.g. on a common understanding of the situational demands) (Entin & Serfaty, 1997);
- leadership (one person undertaking coordination as his/her task) (e.g. Yukl, 1989);
- “heedful interrelating” (an attitude to teamwork, where the individual acts with constant awareness of the conditions required to succeed as a team) (Weick & Roberts, 1993).

## Results

Our results support the hypothesis for different work phases regarding standardization, but not for task load, which may be due to the fact that routine inductions were observed. Also, there was an overall higher level of implicit coordination than expected given the overall low degree of standardization. This finding is in agreement with other studies showing that implicit coordination is the preferred operational mode in medical teams (e.g. Xiao et al., 2001; Heath et al., 2002). Unfortunately, no empirical links with team performance could be established as the expert rating used as performance measure did not differentiate sufficiently between teams.

## Conclusions

Currently, a study is implemented, which attempts to verify the results and to establish a link with performance in order to improve the diagnostic value of the behavioral categories. Performance is measured by means of a number of reaction times in relation to the occurrence of non-routine events. Also, the video-recordings are used for feedback interviews with the team members using the critical decision method (Klein et al., 1989), which can be considered as a first step towards more systematic training of team coordination.