

# Design and evaluation of simulator-training in Anaesthesia Crisis Resource Management (ACRM)

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## Abstract

Anaesthesia Crisis Resource Management (ACRM) training should prepare anaesthetists to cope more effectively with critical incidents in the operating room (e.g., anaphylactic shock, severe circulatory disorders, difficult airway management). Analogous to crew resource management training in aviation ACRM training teaches trainees heuristic principles of crisis management (concerning, e.g., resource management, assuming leadership and situation awareness during critical anaesthesia incidents) in simulation scenarios. The paper describes the design of a training programme that uses a full-scale simulator with a complete operating theatre to teach ACRM principles. This training was evaluated with a quasi-experimental pre-post-test design using questionnaire-based evaluation measures. The evaluation results point to changes in ACRM related attitudes and perceived competencies; Trainees' reactions to the simulator training were also assessed. Finally, future research activities are outlined.

## Demands of crisis resource management in anaesthesia

"Hours of boredom, moments of terror" - this sentence of Lianne Bainbridge (1987) characterises the work of an anaesthetist. Despite high percentages of routine activities, it is the moments of terror that determine the success and safety of the anaesthetic work. For these moments the anaesthetist should be mentally prepared for two reasons:

The first reason is related to the frequency of anaesthesia incidents: Referring to relevant studies, Gaba *et al.* (1994) estimate that a problematic incident occurs in 20 % of all narcoses, in 5 % of which, the incident is severe (i.e., serious harm to or possibly even death of the patient). These data indicate that critical incidents in anaesthesia seem to happen quite frequently.

In D. de Waard, K.A. Brookhuis, J. Moraal, and A. Toffetti (2002), *Human Factors in Transportation, Communication, Health, and the Workplace* (pp. 421 - 434). Maastricht, the Netherlands: Shaker.