

## NON-TECHNICAL SKILLS

### Anaesthesia

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Non-technical skills encompass the social and cognitive skills that are important to ensure effective and safe job performance in healthcare. These skills are particularly important for anaesthetists, who require skills such as situation awareness, communication, team working and planning, alongside their medical knowledge in order to ensure safe and effective anaesthesia. The aim of these research projects was to examine aspects of non-technical skills in anaesthetic practice.

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#### Tactical Decision Games as a Training Tool in Anaesthesia.

Non-technical skills (NTS), such as decision making and situation awareness, are essential to patient safety however, there is typically no formal training related to NTS for novice anaesthetists beyond some limited high fidelity simulation sessions. Tactical Decision Games (TDGs) are a novel training tool, designed to improve decision making. They include small group sessions where discussions and reflections of the management of difficult cases are facilitated by an expert anaesthetist.

The aim of this project was to develop and deliver a programme of TDGs for anaesthetists in their first year of anaesthetic training in one school of anaesthesia, to assess the feasibility and acceptability of this training method. Video and learning review analysis provided data on the participants' learning with regard to non-technical skills and changes in the participants' confidence in understanding the impact of NTS on their practice. Analysis of the TDG training sessions in this pilot project suggests that non-technical skills have a central role in novice anaesthetists' management of the scenario cases. More importantly, once prompted by the facilitators to think of these skills, novice anaesthetists transferred their new knowledge by applying it to subsequent scenario cases more readily than before.

#### Publications

Patey, R., Fioratou, E., & Flin, R. (*in preparation*) Tactical decision games for anaesthetists.

Fioratou, E., Pauley, K., & Flin, R. (2011). Critical thinking in the operating theatre. *Theoretical Issues in Ergonomics Science*, 12, 214 – 255.

<http://www.ingentaconnect.com/content/tandf/ttie/2011/00000012/00000003/art00004>

## Distributed Situation Awareness in the Anaesthetic Management of Major Obstetric Haemorrhage.

The aim of this interview study was to explore the role of Distributed Situation Awareness (DSA) on the anaesthetic management of challenging Major Obstetric Haemorrhage (MOH) cases.

DSA refers to the anaesthetist's perception of the elements of the theatre environment (Level 1), the understanding of their meaning (Level 2) and the anticipation of their progress (Level 3) in interaction with other people, e.g., patient, team members, and external artefacts in the management of a case. A total of eighteen consultant obstetric anaesthetists from four Scottish Maternity Hospitals were asked to discuss a challenging MOH case from their experience, prompted by questions emanating from a Critical Decision Method protocol. All interviews were transcribed verbatim and a DSA analysis (i.e., identification and classification of DSA interactions) was carried out.

It was found that consultant obstetric anaesthetists perceived both interpersonal- (N=9) and clinical-focused (N=9) decisions as challenging in the management of MOH. The majority of the described DSA references was attributed to gathering information (Level 1) and in interaction with external artefacts, however these interactions did not only include monitors but also suction containers, the whiteboard, and swabs around the operation site. For understanding and anticipating (Levels 2 and 3 respectively), the majority of DSA references emerged in interaction with other team members within and outside the operating room. The results suggest that methods for improving effective practice and training in MOH should address the interactive nature of DSA and thus of decision making, by emphasising the need to go beyond the monitoring of anaesthetic displays.

### Publications

Fioratou, E., Flin, R., Trotter, C., & Glan, R. (*under review*) Distributed situation awareness in the anaesthetic management of major obstetric haemorrhage.

Fioratou, E., Flin, R., Glavin, R., & Patey, R. (2010). Beyond monitoring: distributed situation awareness in anaesthesia. *British Journal of Anaesthesia*, 105, 83 – 90.

<http://bjaoxfordjournals.org/content/105/1/83>