

TEAMS THAT WORK TOGETHER, TRAIN TOGETHER: EMBEDDING A MDT SIMULATION COURSE AT KING'S NEUROSURGERY

Updates on a locally-delivered, department-specific training course designed to sustain improved multidisciplinary teamwork in a high-risk, high-consequence environment

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INTRODUCTION

Box 1: Cardiac arrest in prone position
 Simultaneous activity required:

- Withdrawal of any vagal stimulus (*surgeon*)
- Safety of head and neck in Mayfield pins and clamp (*surgeon*)
- Repositioning of patient into safe position for CPR/defibrillation (*whole team*)
- High quality CPR in prone patient (*whole team*)
- Limit decontamination (*surgeon; scrub team*)
- Adjustment in adrenaline doses (*anaesthetist*)

King's Neurosurgery has recently expanded, with a greater elective and emergency activity profile and a consequent **large recruitment of scrub nurses and anaesthetic practitioners**, including many from overseas. **Rotational junior doctor training** (new anaesthetic trainees every 3 months, most of whom are brand new to neuroanaesthesia; neurosurgical trainees every 1-3 years) results in **frequent generation of "scratch" teams on a shift-by-shift basis**. These teams are often **inexperienced** at working together, particularly during out of hours and emergency cases, and often **the most experienced practitioners are those in non-traditional theatre leadership roles** i.e. *not* the surgeon or anaesthetist.

Emergencies in neurosurgery are relatively common, and require rapid, specific, whole-team interventions (*Box 1*).

Multiprofessional training has been a success story in other high-stakes surgical specialities, most notably obstetrics, where the introduction of the PROMPT course (PRACTical Obstetric MultiProfessional Training) has made a difference in patient-focused clinical endpoints such as incidence of hypoxic brain injury and cerebral palsy in delivered babies.

This is the only neurosurgical simulation course in the UK that has **full and equal MDT involvement in both faculty and participants**

COURSE OBJECTIVES

Simulation facility/setup:

- High fidelity mock operating theatre
 - Surgical prostheses
 - Simulated patient mannequin
 - Surgical instruments; mock drugs
- 1 faculty demonstration (accidental extubation in prone position); 3 participant simulations (VAE; major haemorrhage; prone cardiac arrest)
 - 20 minute sim; 20 minute debrief per scenario

- 1 Have a **cross-speciality understanding** of key priorities in management of neurosurgical emergencies
- 2 Practise **logistically complex whole-team tasks** in a risk-free environment
- 3 Ensure team members act **"in-role"** to maximise ability to **translate to real life-practise**

Higher level goals:
 Ensure **sustainability**:

- Target **100% attendance** for permanent staff
- Develop departmental culture of **regular simulation practise without fear of failure**
- Ensure **early course availability for predictable staff rotations** e.g. 3 monthly for new anaesthetists
- Foster early course attendance for new permanent staff members

COURSE DATA + FEEDBACK

- Qualitative written feedback reflects benefit from investment in **realism**
- Learning and benefit from course is maintained even for non-neuro background practitioners, reflecting the **transferable learning** on non-technical skills
- **Interdisciplinary teamwork** was facilitated - comfort in asking for help from other MDT colleagues was reported as high, with this statistic **conserved across all staff groups**
- Participants **enjoyed** the course and **wished to attend again**

