RCoA Research, Education & Travel Grants 2017

Award: Ernest Leach Research Fund

Applicant: Dr Danielle Franklin

Project Title: *Designing improvements in the perioperative care of children using FRAM analysis*

Project Description:

Introduction
Every year 4,500 children come to Plym children's theatres every year for a range of procedures care for by a multi-disciplinary team. Recently there has been a change of senior management in the unit alongside opening of the third theatre this has put increased the workflow through the unit. The recovery practitioners have voiced concerns that they are unable to manage this increase in workflow with the current resources. Staffing numbers have not increased inline with the increase in workflow. Each healthcare worker staff group has a different perspective on the issues.

One in eleven patients in the NHS suffer adverse events, 48% of these are preventable clinical errors[1]. One approach to look at the complex interactions in healthcare is to ask how and why does patient care go wrong? But alternatively we can ask how and why is patient care successful[2]? In this study I wish to use human factors science to understand the system to ultimately design solutions to the problems identified.

Question
Can we use the FRAM model to design improvements in the workflow for children's perioperative nurses?

Aims
• To investigate how 'work is done' by the recovery practitioners in children's theatres using the FRAM model.
• To identify variance in practice and design solutions to these issues.

Methods
Functional Resonance Analysis Method (FRAM) is a human factors method of modelling complexity in systems. It describes 'work as done' and has been used in aviation and nuclear industries. FRAM has been applied in healthcare but in limited settings and not in the analysis of children's services or in the perioperative arena.

FRAM analysis requires input data collected from the front line workers in the system[3]. I propose to collect this data from structured interviews of staff, direct observation of work and positive incident reports. This will be fed into the FRAM software system in FRAM workshops. From these workshops we will identify variance in practice and identify areas for improvement.

Ethics
Ethics is being applied for currently. This work is part of my Masters in Patient safety and simulation with Plymouth University.

Outcomes

The outcome is the production of the FRAM model describing work as done alongside describing variability in the system. From this solutions to management of the workflow will be designed and presented to hospital management to ensure appropriately resourced children's perioperative care. Learning from how work is done and not as imagined will allow bespoke solutions to the issues.

Conclusion

Healthcare is a dynamic adaptive system. Humans working in this environment are faced with complex technology, uncertain teams and a dynamic patient interactions. Many healthcare workers are used to working within systems that are deeply imperfect. Time is pressured, required equipment is not always available and clinical demand can exceed resources4. Healthcare workers depend heavily on their own skills to keep the patient out of harm. We need to understand why and how the system is safe and unsafe. This study will do this in the sphere of children's perioperative care.

References

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3. Hollnagel E. FRAM, the Functional Resonance Analysis Method. Ashgate Publishing, Ltd; 2012. 1 p.
4. Macrae C. Early warnings, weak signals and learning from healthcare disasters. BMJ Qual Saf. BMJ Publishing Group Ltd; 2014 Jun;23(6):440–5.