

Upscaling Frontline Improvement in Surgery

Lorna FLYNN¹, Matthew WOODWARD¹, Lauren MORGAN¹, Lance HOLMAN², Christopher PENNELL¹, Helen HIGHAM² and Peter MCCULLOCH¹

¹*Quality, Reliability, Safety and Teamwork Unit (QRSTU), Nuffield Department of Surgical Sciences, University of Oxford, Oxford, UK*

²*Oxford Centre for Simulation Teaching and Research (OxSTaR), Nuffield Department of Anaesthetics, University of Oxford, Oxford, UK*

Keywords. Surgery, healthcare, human factors, challenges.

1. Introduction

In recent years there has been an increasing awareness of the frequency and severity of inadvertent patient harm in healthcare. It has led to many attempts to improve the quality and safety of frontline care in the NHS, many of which were either top-down or based on approaches such as Crew Resource Management or Lean. The Quality, Reliability, Safety and Teamwork Unit (QRSTU) developed a model to improve patient safety by supporting frontline healthcare staff in implementing successful improvement interventions. The model is based on researchers providing frontline staff with training in Human Factors and Ergonomics and then working alongside staff to support them in the implementation of improvement projects. It has been developed and evaluated through a series of studies in surgery and has demonstrated improvements across both process measures and clinical outcomes. Qualitative research into why this model worked and how, identified a number of key facilitators and barriers to the approach. It found the research team to be a key facilitating factor in terms of their expertise and support. Unlike previous external groups and consultancies, the researchers were accepted by frontline healthcare staff because they built relationships with and supported staff throughout the interventions, had a research agenda rather than a financial one, and allowed the frontline staff to lead on the interventions. The qualitative analysis also pointed to the fact that the support of the research team and training were successful in overcoming typical barriers to improvement such as change fatigue, learned helplessness and complacency. The findings also suggest that senior level support was important for the success of interventions and found that time in which to do the work was a significant barrier to improvement.

Previous studies by the QRSTU using this model have looked at the implementation of this approach across a number of sites, but working largely at one site at a time, with substantial researcher support available onsite to frontline staff. This type of model based on heavy support from researchers at a single site is not a very sustainable one. We attempted to upscale this model to a regional level; simultaneously across the general surgical departments of four NHS acute Trusts. This work presents a case study of efforts to upscale this model to conduct region wide improvement projects in four acute NHS Trusts and some of the researcher experiences to date.

2. Methods

We identified five to six multidisciplinary clinical champions (including senior level clinicians based on the previous qualitative study) in general surgery at each of the four Trusts involved to form project teams. These individuals identified the management of patients with right iliac fossa pain (RIF) (ICD R10.813) and appendectomies as an area

for improvement. The rationale for this focus is that this patient cohort makes up a significant proportion of the general surgical workload and poor management of this group frequently leads to delays in diagnosis and treatment, greatly increasing the risk of patient harm.

The project teams received two days of training. This training focused on applying Human Factors and Ergonomics (HFE) in healthcare (covering an introduction, methods and designing solutions), measurement and data, and how to make changes in healthcare. Practical workshops focused on analysis of current pathways and plans for measurement and change. After training, staff began developing their improvement interventions alongside members of the research team. Staff used methods such as process mapping and link analyses to identify issues in their current systems. Five researchers were available to support staff and two researchers were assigned to each Trust to work alongside the champions to support improvement. Support was provided through email, phone and site visits. In order to encourage engagement and sustainability, researchers supported and guided the staff with emphasis placed on frontline staff personnel to provide the lead in the changes and improvement. Success of the improvement interventions was measured through a combination of process and clinical measures (e.g. time from admission to theatre and complications).

3. Results

Project groups implemented improvement interventions across each of the four sites, each to varying degrees of success. Each of the sites differed significantly in the types and number of interventions they completed. Examples of successful intervention improvement changes include: 1) introducing a research consultant delivered service to improve continuity of care and standardisation of post-operative notes; 2) introduction of standardised ward round pro forma consisting of improved data collection, documentation, and information transfer; 3) introduction of a “transfer nurse” to improve communications between the ward and operating theatres.

Whilst a number of successful interventions were carried out by the project groups, a number of challenges were experienced throughout the entire programme. The research team was not based on-site for three out of four sites, which limited their ability to meet, support and build effective relationships with staff. Focusing on getting senior level approval, resulted in training the staff who were not the people subsequently doing the actual ground work for the intervention i.e. the junior staff.

Another issue included inviting only select “champions” to training. This was effective in focusing the interventions and keeping the number of interventions manageable, but if the “champions” were not the right persons selected, then this fact became a significant barrier to the project. Heavy clinical workloads, shift work and rotating staff meant that it was extremely difficult to find opportunities and time to meet and complete project work.

Whilst evaluation of this programme is ongoing, this work highlights important challenges faced in upscaling improvement at the frontline, and points to a number of factors which need salient consideration when integrating HFE at the frontline to bring about change and improvement.