

## Introduction

Emergency intubations (EI) in critical care units (CCU) are common, complex tasks requiring effective coordination of a multidisciplinary team. Problems can arise when inexperienced staff are unaware of necessary roles, and are unfamiliar with the process(1). We designed this quality improvement project (QIP) aiming to improve patient safety during EI in response to a Serious Incident.

Utilising a novel time-based process mapping approach we identified parts of the EI procedure(2) for optimisation and training. The resulting action cards aim to improve safety by raising awareness of the entire EI process, improving teamwork, and demonstrating an 'ideal' EI which can later be applied to clinical events.

## Methods

### Plan

- Stake holders surveyed to understand previous experiences of EI
- EI, in our CCU, process mapped to break down into tasks and roles
- Design an "ideal" emergency intubation process using action cards for each participant

### Do

- Run in-situ simulation using teams of five or six; *1<sup>st</sup> intubator, 2<sup>nd</sup> intubator / drug administration, team leader, intubation assistant, junior medic*
- Repeat sim with modified action cards

### Act

- Action cards adjusted using study findings
- Changes included: utility, layout, readability, roles, tasks, team members

### Study

- Simulation participants observed during in situ simulation
- Participant feedback collected during post simulation debriefing
- Findings considered in light of SEIPS Human Factors Framework(3)

## Results

Feedback demonstrated high satisfaction using action cards as a learning tool within simulation; 100% (n=19) had fun and would participate again in the future.

The majority of participants (90%, n=10) reported learning new skills and knowledge. Feedback also showed enthusiasm for applying the action card format to other emergency scenarios.

From observing the simulation sessions we noticed two key challenges for EI: unfamiliarity with a team leader role and inexperience with some technical tasks.

## Conclusions

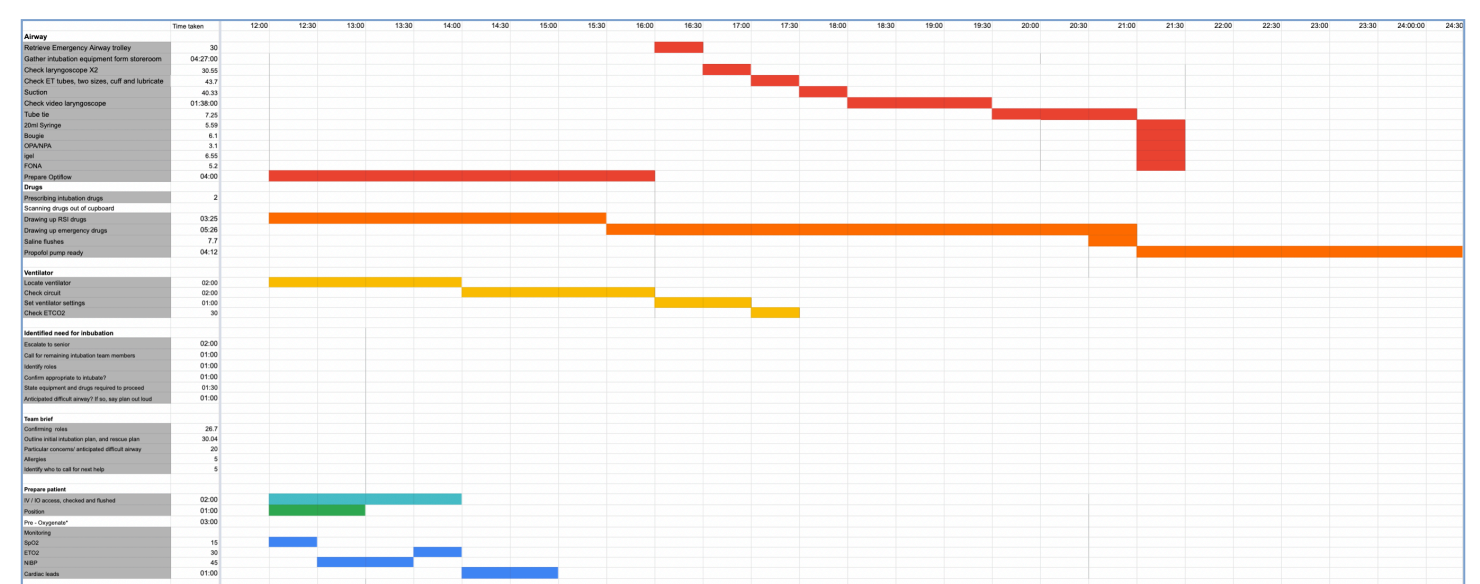
In this QIP we used a new approach to design bespoke simulation training for EI in our CCU.

We optimised the EI process by using time mapping and task allocation. Action card engagement and effectiveness was honed through rapid simulation-based PDSA. Our early success and learnings in developing these action cards will allow us to refine the process of simulation training for other clinical scenarios.

## Further resources:

Process map view [here](#)

Action cards view [here](#)



## References

1. Russotto V, Myatra SN, Laffey JG, et al. Intubation Practices and Adverse Peri-intubation Events in Critically Ill Patients From 29 Countries. *JAMA*. 2021;325(12):1164–1172. doi:10.1001/jama.2021.1727
2. Higgs, A. et al. Guidelines for the management of tracheal intubation in critically ill adults. *British Journal of Anaesthesia*, 2017; Volume 120, Issue 2, 323 - 352
3. Safety Education Initiative for Patient Safety, Education for Scotland. Human Factors of Health and Social Care. [Internet] The Knowledge Network. 2006; cited July 2021. Available at: <http://www.knowledge.scot.nhs.uk/hfe/systems-thinking/seips.aspx>