

## Simulation training for emergency medicine trainees to improve confidence in managing bespoke cases

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### Introduction:

Emergency medicine requires quick decision-making, effective communication, and strong clinical skills. Training must prepare practitioners to provide optimal care in emergencies. Simulation training has been shown to improve processes and patient outcomes, as highlighted by Ajmi et al. This quality improvement project (QIP) aimed to evaluate the impact of monthly simulation training on the confidence levels of emergency medicine trainees. The hypothesis was that increased frequency of simulation training would improve trainee confidence. The primary outcome was to increase simulation minutes during monthly teaching days, while the secondary outcome focused on improving the quality of simulation experiences through qualitative measures.

### Methods:

This single-center QIP was conducted at Cambridge University Hospital. Pareto charts, fishbone, and driver diagrams were used to identify focus areas and implement changes. Interventions were tested using the Plan-Do-Study-Act (PDSA) methodology over eight months.

### Results:

Nineteen data points were collected during the study. The pre-intervention median simulation time was 0 minutes, with a mean of 4 minutes (5 data points recording 0–20 minutes). There were 3 PDSA cycles conducted throughout the course of the project. After the first intervention and during the course of the study, 14 data points showed a median of 60 minutes and a mean of 57.64 minutes, indicating a median increase of 60 minutes and a mean improvement of 53.64 minutes. Trainee confidence was assessed using pre- and post-simulation questionnaires with a validated tool, revealing increased confidence as the QIP progressed.

### Conclusion:

The interventions increased the number of monthly simulation minutes, correlating with improved trainee confidence. However, longer study periods are needed to determine true statistical significance. The pragmatic approach and methods used in this QIP worked within resource constraints, ensuring external validity.