

Identifying Latent Risk:

Use of Large-Scale Multiprofessional In-Situ Simulation to Evaluate Safety Across the Intrapartum Patient Journey

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Background

Multiprofessional simulation-based education has proven benefits in reducing neonatal and maternal morbidity and mortality, and improving team performance.¹ Alongside training, in-situ simulation-based education has been used to identify latent safety threats, or previously undetected risks present in clinical environments, and identify specific areas for system improvement.²

We ran the simulation during time reserved for clinical governance activities which ensured no planned work was occurring, providing additional clinical space, staff, and mitigation of impact on clinical care. Staff were assigned in advance and called by a simulated alert system using instant messaging when needed.

At North Bristol NHS Trust a simulation-based education working group plans activities across the Women and Children's division with representatives from all professional groups. This group designed a simulation-based education event to identify latent safety threats across a patient journey from the midwife-led unit through to obstetric theatres.

Equipment used included a simulated patient, manikins and task trainers. Latent safety threats were noted during simulation and debriefing, as well as by post-event feedback forms, and an action plan was created.



Benefits and Barriers to Simulation



Key Learning Identified

1) Role of a new Category 1 arrival in theatre call-out

Introduce a new call-out to clarify to theatre team background, immediate priority and preparations to be made

2) Theatre naming causing confusion

Theatre B not logically named when co-located with Theatre 1 & 2

3) Uncertainty over location of emergency drugs and equipment in 3rd theatre

Staff not familiar with processes in 3rd theatre only used as a backup

4) Communication of opiate administration to neonatal team

Anaesthetic team not routinely informing neonatal team that opiates given with GA

5) Review of communication with patient during assessment in theatre

Simulated patient noted dramatic escalation from 'it's ok we are just going to assess you' to 'we're going to give you an emergency general anaesthetic'

Conclusions

We identified multiple latent safety threats, some only becoming apparent from the high-fidelity nature of the simulation, use of a simulated alert system, and the use of in-situ environments and clinical staff.

Time from recognition of deteriorating fetal condition in the midwife led unit to birth under general anaesthesia was 20.5 minutes.

Specific identified latent safety threats included confusion with naming of theatres, need for a 'sit-rep' or 'SBAR' handover on arrival in theatre, delay locating items of emergency equipment and drug cupboard keys, and informing the neonatal team of opiate use in general anaesthesia.

The simulated patient was able to provide a unique perspective, including rapid perceived escalation to ‘we need to give you a general anaesthetic’ with suggestions on how to minimise trauma.

This simulation-based education event was well received with multiple areas for QI to mitigate latent safety threats. In particular, the use of both a simulated alert system and simulated patient highlighted specific latent safety threats.

This demonstrates the importance of simulation-based education well beyond the established direct benefits of team training,¹ and we intend to continue a programme of regular divisional in-situ simulation-based education to provide both team training and testing of clinical systems.

References:

- 1) Fransen AF, van de Ven J, Banga FR, Mol BW, Oei SG. Multi-professional simulation-based team training in obstetric emergencies for improving patient outcomes and trainees' performance. *Cochrane Database of Systematic Reviews*. 2020(12).
- 2) Couto TB, Barreto JK, Marcon FC, Mafra AC, Accorsi TA. Detecting latent safety threats in an interprofessional training that combines in situ simulation with task training in an emergency department. *Advances in Simulation*. 2018 Dec;3(1):1-7.