A pilot simulation: Exposing final year medical students to peri-arrest scenarios using innovative techniques to highlight situational awareness, distraction, teamwork and closed loop communication

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Introduction

The transition from medical student to doctor is challenging.1,2 To help this transition, we piloted a simulation that focused on working as part of a peri-arrest team, with the aim of strengthening teamworking and communication skills. Closed loop communication is a fundamental element of team effectiveness, enhancing clarity, reducing errors, and improving patient outcomes.3,4,5 However, peri-arrest scenarios can be exceedingly chaotic, and various distractions and sensory impairments can impact our communication. Our trust did not run a simulation that effectively replicated the dyanmics of being part of a peri-arrest team. A few previous pilots had explored the use of sensory impairments and distractions to highlight the importance of communication in these scenarios.3,6,7 Therefore we thought to work these elements into our pilot simulation, hoping that we could help bridge an existing gap for our medical students.

Methodology

Four final-year medical students volunteered to participate in this simulation during their transition to practice block.
The students received a short pre-briefing, followed by three scenarios lasting 20 minutes:

- Scenario 1: A patient with an acute abdomen. Undertaking real-time clinical skills (vascular access, arterial blood gas, catheterisation, naso-gastric tube insertion) to emphasis teamwork, task prioritisation, and task fixation.
- Scenario 2: A patient with sepsis. Using bleeps, which consistently went off throughout the scenario, to highlight distractions and task management
- Scenario 3: A patient with a post-operative bleed. Sensory impairment by having a blindfolded leader to reinforce closed-loop communication and teamwork.

A plant was present in each scenario, and debriefing took place between scenarios to highlight key learning points.
Two facilitators recorded the frequency of open-loop to closed-loop communication in each scenario.
All students completed pre- and post-simulation surveys.

Results

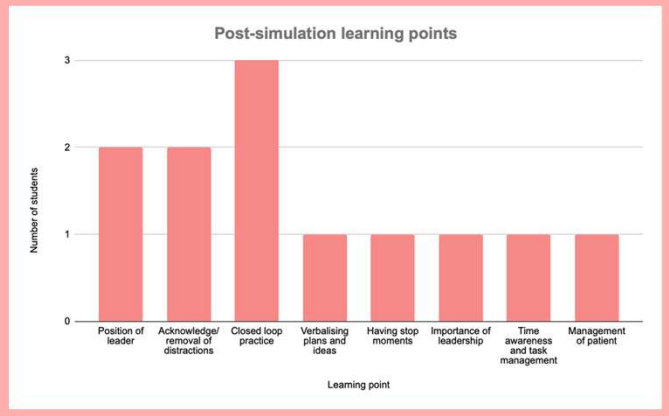
	Change from pre- to post-simulation			
	Student 1	Student 2	Student 3	Student 4
Confidence in looking after acutely unwell patient	Improved	Improved	Improved	Improved
Confidence in teamworking ability	Improved	Improved	Unchanged	Improved
Confidence in being part of peri-arrest team	Improved	Improved	Improved	Improved
Confidence with verbal communication skills in peri-arrest	Improved	Improved	Improved	Improved
Confidence with non-verbal communication skills in peri-arrest	Unchanged	Improved	Improved	Improved

Scenario 1

- 2 students found it "More stressful"
- 2 students found it "More realistic"
- 1 student felt "Confident, had a great time"
- All students felt having 1 person do clinical skills "frees up the rest of the team" to "focus on other tasks"

Scenario 2

- "[the bleep] made things more difficult, it create[d] chaos"
- "[the bleep] was a hindrance... it was eventually ignored"
- "[the bleep] serv[ed] as a constant distraction"
- "It got annoying quickly"
- "It is helpful to practice using bleeps to simulate the real world"



Scenario 3

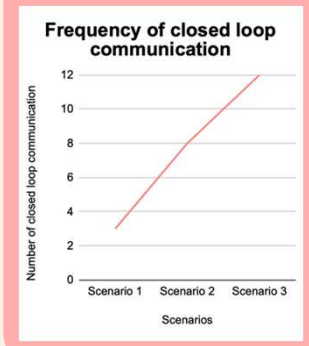
Impact on Leader (student who was blindfolded)

Leadership:

- "Restrained from doing anything else other than being updated... as well as delegate tasks and force closed loop communication"

Communication:

- "I had to be much more involved regarding my train of thought to verbalise it and direct the team accordingly"
- "had to force the team to communicate to me... and consistently reminded the team to update them regarding the status of the patient"



Impact on other students

Communication:

- "More closed loop communication"
- "It made us more aware of who was talking and when, as well as more precise on what we said"
- "More aware of how I was communicating"

Task execution:

- "We had to verbalise our actions and tasks"
- "it was more clear what to do and prevent[ed] stepping on the toes of others. It encourages close loop communication once tasks were done and it was clear who to report back to"
- "More hypervigilant"

Conclusion

All participants reported improved confidence in peri-arrest scenarios, verbal communication and looking after acutely unwell patients, including for one participant who had engaged in a peri-arrest prior to the simulations. Three participants gained confidence in non-verbal communication and teamworking.
Our simulation shows promising pilot results that suggest it successfully helps to bridge the gap in medical student learning by exposing them to peri-arrest scenarios in a fun and innovative way that allowed them to make improvements in their teamworking and communication skills.

Future action points

- This was a pilot project that we want to continue to run to final year medical students, it is being started at two more trusts in the KSS region, and with such positive pilot results, we hope it would be taken up by more in the future.
- We will continue to collect data in future sessions with the aim to present and publish this

Any questions? Contact: martha.turner2@nhs.net, reya.patil1@nhs.net

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