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LETTER

In-Situ Simulation: Effective and Efficient? [Letter]

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Rami Abbass [1]
Usmaan Bhatti [1]
Ahmed Abbass [2]

[1]Faculty of Medicine, Imperial College London, London, UK; [2]Faculty of Medicine, St. George's Hospital Medical School, London, UK

Dear editor

We read with great interest the article by Shrestha et al,[1] implementing and evaluating in-situ simulation (ISS) to train interns with regards to cardio-pulmonary resuscitation (CPR). As 5th-year medical students in the UK, we have also experienced simulation-based medical education (SBME) and have found it to be a valuable tool in learning to apply theoretical knowledge in practical situations.

Whilst we appreciate Shrestha et al's efforts we believe adjustments could be made to improve and more accurately evaluate the effectiveness of the intervention. For widespread implementation, one must also identify a feasible and sustainable strategy that can be easily adopted across different hospitals.

Firstly, it is mentioned that 23 out of 35 interns had previously participated in a cardiac arrest event. However, their level of involvement or the role they performed is not clarified. Due to the disparity in the cohort, more homogenous groups of interns could have been formed according to their previous experience and teaching, allowing for a more accurate analysis of the impact of the simulation alone.

Additionally, whilst we appreciate that the treatment of cardiac arrests requires a team effort, a recent study by Misquita et al found that individual-based simulation was more beneficial than group-based simulation.[2] The medical students appreciated the added responsibility for their decisions, gave more thought to the possible ramifications of their actions and were able to better understand their limits. Furthermore, the study also revealed that one-to-one feedback was preferred by students as they felt more comfortable asking clarifying questions regarding their performance.[2] This could have potentially improved self-reported knowledge and confidence scores and reduced the need for repeating the simulation several times per intern.

Simulations being carried out several times with the same group of interns over one month also raises questions about whether this could sustainably be held for larger cohorts over longer periods and across multiple sites. As shown by Zendejas et al, cost is often overlooked in SBME and its underreporting presents a potential barrier to adoption.[3] Whilst we appreciate Shrestha et al's statement that ISS decreased required resources in comparison to private external Basic Life Support and Advanced Cardiac Life Support courses,[1] we recommend comprehensive costing according to a cost-reporting framework such as Levin's three-step model.[4] ISS costs involving material and equipment, personnel, facility and opportunity cost should not be overlooked, and a subsequent objective cost-effective analysis would help waiver concerns.

Finally, with the interns being key stakeholders in the educational process, it is crucial that their suggestions for improvement are explored, such as the use of a video demonstration prior to the simulation to help orientate the participants. The

Correspondence: Rami Abbass
Faculty of Medicine, Imperial College London, South Kensington, London SW7 2AZ, UK
Email ra3615@ic.ac.uk

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incorporation of virtual components or even total virtualization of simulation has proved vastly successful in other high-risk industries such as aviation and the military and is of growing importance in medical education.[5] A combined approach of an initial low-fidelity virtual component followed by ISS could improve the interns' confidence, knowledge and skills more rapidly and efficiently.

Disclosure

The authors report no conflicts of interest in this communication.

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