Simulation changing the face of healthcare improvement: a silver lining from the COVID‑19 pandemic?

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While most health services hoped to simply survive the COVID‑19 pandemic, healthcare simulation programs may look back on this period as a defining moment; when simulation became integrated and interwoven into healthcare improvement. COVID‑19 necessitated rapid and high stakes changes to physical environments, care pathways, equipment, and work practices. Traditional approaches to change were too cumbersome, and simulation programs around the world stepped into this niche. Using diverse techniques and technology, simulations were designed to test new ways of working, and to prepare frontline staff for the cognitive and affective challenges of COVID‑19 care. Can we maintain the momentum, and support clinicians to view simulation as a way to improve care, through simple, low‑cost techniques?

In this issue of the CJEM, Mastoras and colleagues [1] describe a ‘just in time, virtual, simulation‑based curriculum’ for emergency physicians preparing to make difficult triage decisions in anticipation of overwhelming demand for finite critical care resources. After pre‑course preparation, the participating emergency physicians engaged in carefully designed role play scenarios on Microsoft Teams. The participants reported improved knowledge and confidence following the simulations.

Many descriptions of similar endeavours have been disseminated; a brief PubMed search for ‘COVID‑19’ AND ‘healthcare simulation’ identified more than 900 peer‑reviewed publications in the last 2 years. Many healthcare providers have participated in simulation for the first time in this pandemic. Many more have experienced a paradigm shift; from the use of simulation as a primarily educational tool to use as a powerful tool for exploring work and testing better ways of doing it. As clinicians and simulation leaders, we suggest two questions emerge from this experience. Firstly, will health services continue to embrace simulation as a tool for achieving ‘systems based’ outcomes? Secondly, will clinicians adopt these flexible, adaptable simulation methods to enable frontline quality improvement?

The concept of using simulation as a tool to explore work environments and people in them, and to tests planned interventions is not new. The term ‘translational simulation’ [2] was coined in 2017 to describe the approach, also termed systems focused [3] or systems integration simulation. The approach recognises that the education of health professionals is not enough to improve patient outcomes in complex healthcare systems. Examples of successful programs include testing new hospital spaces prior to commissioning [4], improving ‘door to needle’ time in stroke thrombolysis, and identifying latent safety threats in clinical environments (e.g. by running simulations in situ in resuscitation bays in emergency departments). And yet this approach is rare. Practice changes are often driven by executive leadership, and frontline clinicians make them work (or not) without testing prior to implementation.

The lack of connection between simulation delivery teams and those doing quality improvement is one explanation; the fields do not have a strong tradition of integration [5]. But there are other barriers, including finite resources, ineffective program evaluation, and the inability of simulation faculty to adapt to new targets and to use new methods. Pioneers in the field are applying translational simulation as a large scale, embedded and interwoven strategy within health services. But it does not have to be complex; this is a tool within reach of most clinicians who wish to explore challenges in the emergency department and elsewhere.

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The Mastoras article [1] illustrates what is important if emergency physicians wish to use simulation with their teams at the frontline.

1. A simple and well-defined target; in this case, embedding a tool to aid triage decisions
2. Practical tools and technology that are appropriate for the objectives; in this case, Microsoft teams and role-play cases
3. Adequate preparation for simulation events.
4. Attention to psychological safety so that all voices can be heard on how to improve.
5. A well-structured and managed debriefing discussion to foster team-based reflection and to collect data if that is an objective of the program.

In summary, to reply to our own questions:

First, will health services continue to embrace simulation as a tool for achieving ‘systems based’ outcomes? We believe that the success of simulation efforts during the pandemic provides compelling arguments to do so.

Second, will clinicians adopt these flexible, adaptable simulation methods to enable frontline quality improvement? We believe that examples like that of Mastoras and colleagues [1] illustrate that many simulation techniques are within reach of clinicians seeking to improve care for their patients.

Declarations

Conflict of interest VB is employed by Bond University, and undertakes consultancy work in healthcare simulation as director of the Bond Translational Simulation Collaborative. MD is CEO and Simulation Consultant for Health Systems Simulation International, and provides consultancy services in healthcare simulation in this role.

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