

Need for a systems integration methodology for effective implementation of simulation-based training

Sir,

We read with great interest the article entitled, "Simulation role in preparing for COVID-19" by Aldekhyl and Arabi.^[1] The paper highlights the usefulness of simulation-based training (SBT) as an alternative, feasible, and flexible design for education amid the pandemic. However, while SBT provides an operational framework within educational programs to reduce the risk of transmission, its real-time efficacy can only be established using preparedness testing and comparative analysis with established in-person training programs.

We believe that strong SBT significantly relies on effective implementation of a systems integration methodology. Where healthcare and delivery system integration is quite common in knowledge synthesis protocols,^[2] more recently, its utility for SBT programs and preparedness testing has been explored.^[3] As such, a key element of SBT testing should focus on the apposite selection and identification of systems domain salient to the training regimen. The specific targeting of major systems domains, including environment, personnel, and communication, can allow for effective testing and considerations for variables that are typically overlooked.

For example, a systems domain analysis may recommend *in situ* walkthroughs to identify physical constraints in a clinical setting and for environmental assessments. This may be of notable importance within the context of programs such as the MNGHA's "Right Care, Right Now" infection control initiative described by Aldekhyl and Arabi.^[1] Translating SBT from a "point-of-care" laboratory to a resuscitation setting, for example, may require additional route planning to ensure that equipment does not obstruct the clinical team, the adaptive identification of personal protective equipment donning and doffing areas to choreograph workflow, and elicit real-world biological hazards, such as blood splatter and other infectious risk factors, for unexpected scenarios difficult to replicate in mannequins. We believe that such considerations will prove effective in streamlining SBT and promote an overall systemic effect in enhancing healthcare delivery planning.

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Conflicts of interest

There are no conflicts of interest.

Peter Anto Johnson, John Christy Johnson¹

Departments of Medicine and ¹Biomedical Engineering, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta, Canada

E-mail: paj1@ualberta.ca

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