Breaking the COVID-19 Barriers to Health Professional Team Training With Online Simulation

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Summary Statement: The COVID-19 pandemic led to disruption of most interprofessional simulation workshops in our center, including the obstetric and neonatal emergency simulation or ONE-Sim workshops for medical, nursing, midwifery students, and health professional staff in Australia and overseas. We devised online versions of the workshop for students and staff. In this report, we describe the details of these innovative online workshops. This has enabled us to continue this vital simulation-based education during the pandemic, when strict lockdowns, physical distance requirements, and travel restrictions precluded the usual conduct of these workshops. The online workshops were well received by students and staff in Australia and overseas. Some important lessons that were learned from the preliminary experience of these workshops are detailed in this report.

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Key Words: Crisis resource management, Interprofessional, ONE-Sim, Teamwork training.

PROBLEM

The COVID-19 pandemic has caused major disruption in everything from daily life to high-intensity health care. It has also impacted the delivery of vital health professional education. Simulation-based education (SBE) is a well-established component of health professional education, for assessing and assisting with participants’ readiness for practice, competency, and preparedness for emergencies. With restrictions placed on conducting in-person group or team activities, and international travel, the impact of these “barriers” on local and global health SBE activities has been significant. The obstetric and neonatal emergency simulation (ONE-Sim) interprofessional workshops are part of medical, nursing, and midwifery undergraduate and postgraduate education at our institution in Melbourne, Australia, and a number of centers in low-middle-income countries (onesimeducation.com). The workshops focus on common childbirth emergencies including obstructed labor, fetal distress, neonatal resuscitation, and postpartum hemorrhage. The interprofessional nature of these workshops (involving doctors, midwives, nurses) is considered critical for improving teamwork during childbirth emergencies. However, this also provided for additional challenges for face-to-face learning for the various health professional groups during this pandemic.

SOLUTION

We had to devise a strategy to sustain this vital SBE during the pandemic. From early April 2020, we started running ONE-Sim workshops through an online format. Students or health professionals of relevant disciplines are invited to attend the workshops via an online communications platform [Zoom (Zoom Video Communications, San Jose, CA) or similar]. A small group of interprofessional medical and midwifery facilitators run the workshops in complete personal protective equipment (PPE) to comply with physical distancing and group restrictions. The use of PPE also depicts the management of obstetric and neonatal care during the COVID-19 pandemic (added as an additional learning objective to teach pandemic adaptations and readiness).

The workshops start with introductions, laying the ground rules (confidentiality, safety) and learning objectives, and familiarization of the participants with equipment/simulation manikins, following which emergency scenarios are “live streamed” from a high-fidelity simulation center to learners’ homes in Melbourne and overseas. A hand-held wide-angle camera device with a gimbal stabilizer is used to provide the online learners with an optimum viewing experience of the simulated emergency scenarios. The facilitators play the participants in the scenarios. Scenarios are conducted with the facilitators wearing the appropriate PPE gear in keeping with the recommendations at the time of the workshop and also teaching the “donning” and “doffing” of the PPE in an emergency time-critical setting.

After the scenarios, small groups of participants (10–15 per group) are invited into “breakout” rooms to debrief (using trigger question discussions) and consolidate key learning. The facilitators (2–3 per group) moderate the discussions in the breakout groups. To conclude the session, all participants are invited to provide verbal (via the online sessions) and, a few days later, written reflections through online surveys. The workshop sessions last between 2.5 and 3 hours. In some cases, students or staff members have an opportunity to practice technical skills on the manikins on their own with an instructor a few days after the workshop. More than 400 students and
staff have participated in the online simulation workshops since the start of the pandemic.

LESSONS

The online ONE-Sim workshops have been well received by participants, both locally and internationally. Detailed analysis of the workshop sessions, participant feedback, and experiences will be published separately, but we highlight some preliminary observations in this report. Distance education and online remote learning (either synchronously or asynchronously) have become integral to all types of education during the pandemic, and SBE is no exception. “Connectivism” is one such framework, offering theoretical underpinning, for engaging learners in the digital age. It relies on the learner using tools available on the Internet (including webinars, live streaming, social media, discussion forums, online workshops, and others) to facilitate their learning.

The online workshops are able to bring interprofessional groups of students and staff together albeit virtually. This is vital to give them a feeling of teamwork and dealing with a crisis together, despite being physically distant. Debrief sessions or—perhaps more appropriately—the trigger question discussions in small groups demonstrated similar behavioral patterns (learners explicitly discussing perception of stress caused because of the emergency and scenario immersion) and similar discussion (focus on communication, team work, and other behavioral skills) as we generally observe in face-to-face simulation workshops. Participants greatly value the opportunity to “come” together, visualize, experience, and trouble shoot emergency situations. It also facilitates group learning, sharing of ideas, tips, and strategies to deal with various aspects of crisis resource management as an interprofessional team, facilitated by medical and midwifery facilitators jointly, through online engagement.

The inability of individual learners to practice procedural skills could be facilitated by personal sessions on simulators at a later opportunity. Using appropriate PPE provided an opportunity to model “donning” and “doffing,” and highlight and discuss PPE related issues with questions regarding the right PPE required in specific childbirth emergency situations, but also helped refine communication tools during PPE usage. Clear and effective communication is vital for management of any crisis but becomes even more crucial during the pandemic, when layers of PPE prevent subtle communication cues (including touch, eye-eye contact) are limited.

The live streaming of the session was an important aspect of the online workshops. At an early stage, we trialed prerecording the simulation scenarios and streaming it to the participants during the workshop. Although still appreciated, the experience was much enhanced when emergency scenarios were streamed live.

A gimbal-stabilizing device was considered critical for capturing videos, as it allowed a good quality portable camera/smartphone to access decnt angles of the scenario/environment and management to give participants a truly immersive experience.

The COVID-19 pandemic has taught us a lot, as individuals, as communities, as societies, as educators, and as learners, and we hope some of this learning can be carried into the future, even when the virus does not cause the amount of disruptions that are currently experienced. Simulation in healthcare (possibly with added online components) provides us with limitless, flexible, and widespread options for education and training and will continue to be a vital cog in the wheels of effective healthcare.