

The perceived value of just-in-time in-situ simulation training as a preparedness measure for the perioperative care of COVID-19 patients

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Introduction

- Training of redesigned perioperative workflows was urgently required due to COVID-19 pandemic.
- Just-in-time (JIT) training is known to promote confidence in specific tasks.
- COVID-19 Training was set up and delivered via JIT, in-situ simulation, team training.

Methods: Implementation of Training

- JIT in-situ simulation stations focused on minimizing viral exposure & transmission risk [Fig. 1].
- Core group of faculty trained to run simulations in vacant OR's.
- Single page checklists created as cognitive aids.
- Training delivered throughout Beth Israel Lahey Health Network (BILH) across disciplines. (anesthesia, surgery, nursing, technicians) [Fig. 2].
- Daily feedback & debriefing from faculty allowed for iterative changes to SOP's & sims.

Methods: Assessment of Training

- Post simulation training **surveys** (Likert scale and free text) administered via email & QR code to assess knowledge & comfort of COVID protocols, pre vs. post-simulation, and belief of impact on practice.
- March-August 2020: reviewed anonymized **HCW infection rates** amongst perioperative staff and **compliance with COVID-19 protocols** for COVID cases in the OR.

Results

- Up to 12 sims run per day over 3 weeks, through March-April 2020.
- Trained 428 BILH perioperative staff members, across multiple sites.
- Survey responses (n=110) revealed the following regarding all 4 simulation stations:
 - ❖ Knowledge of and comfort in adopting new workflows increased post-sim (all p-values < 0.001; all means increased by ≥ 1.2 points on a 5-point Likert scale).
 - ❖ > 90% of respondents agreed or strongly agreed that this training would impact their future practice.
 - ❖ Free text responses appreciated timeliness of training, hands-on nature and inter-professional collaboration.
- Constructive feedback through facilitated iterative changes to training and organizational SOP's.
- 95% compliance with COVID precautions in perioperative setting (121 of 127 cases through March – August 2020).
- Network's perioperative HCW test positive rate was < 1% (March – August 2020).

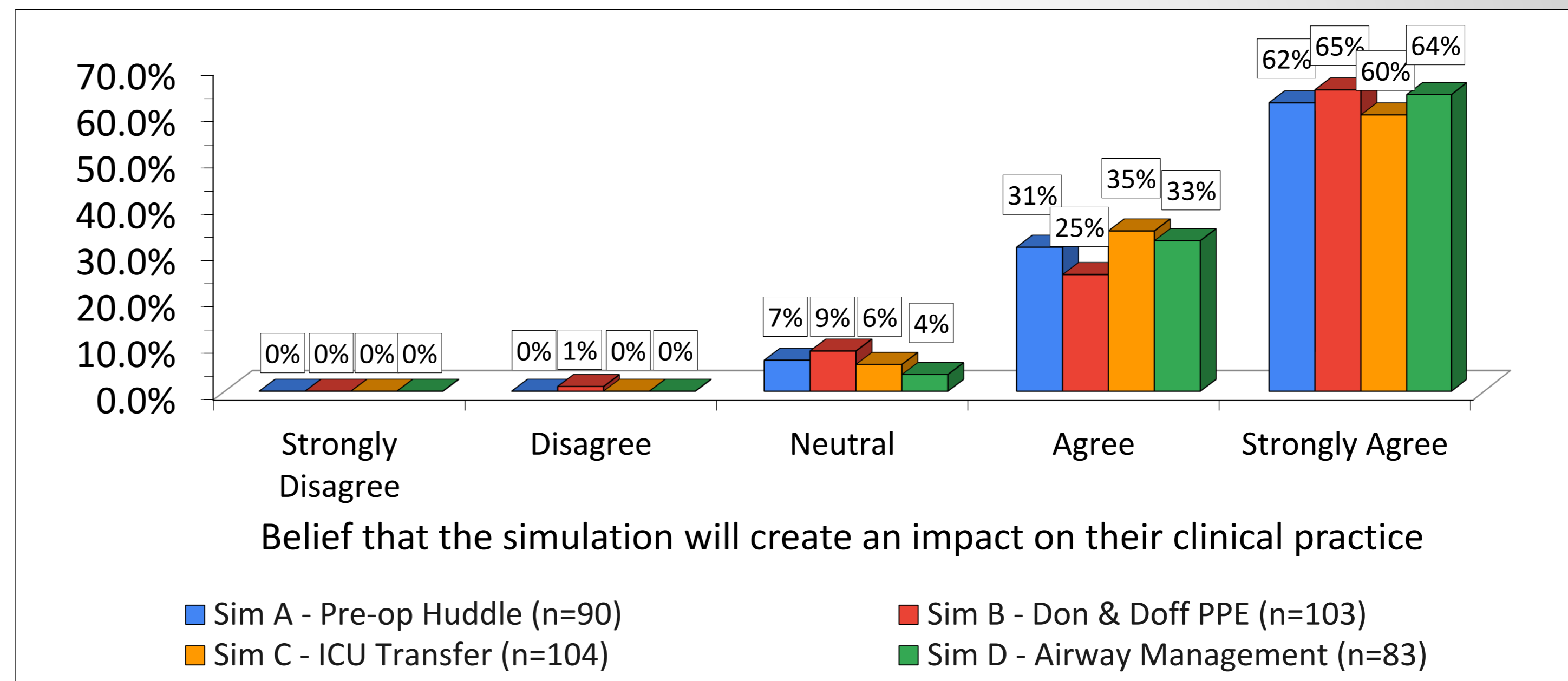


Figure 3: Survey results for perceived impact of JIT simulation training on clinical practice. Results expressed as percentage of responses for each simulation drill. X-axis represents a 5-point Likert scale.

"Simulations provided an opportunity to hear about the most up-to-date protocol/policy changes, and also about complaints."

"It really helps the nursing staff in preparing to care for these patients and increases communication between the disciplines."

"Simulation got you thinking about the issues in dealing with a COVID-19 patient, and helped you learn from others' trial and errors."

Discussion:

- In context of COVID-19 and personal risk to HCW's, we speculate "hunger for information" and increased anxiety about a lack of knowledge on viral exposure risk & transmission served as drivers for change.
- This method of training facilitated "error proofing" of our newly designed workflow; on-site observations, daily feedback and survey responses from participants triggered iterative changes to help refine our COVID-19 perioperative workflow.

Conclusions:

- JIT in-situ simulation training is not only an effective education method in preparing our perioperative HCW's for COVID, but also an effective way to implement updates to perioperative workflows. Training was highly regarded by participants, we observed high precaution compliance, and low test-positive rate.



Figure 1: JIT in-situ simulation training stations.

- A: Pre-op huddle & OR set up for COVID-19 case.
- B: Donning & doffing PPE.
- C: Transfer of a COVID-19 patient from the ICU to the OR.
- D: Airway management with enhanced infection control measures.

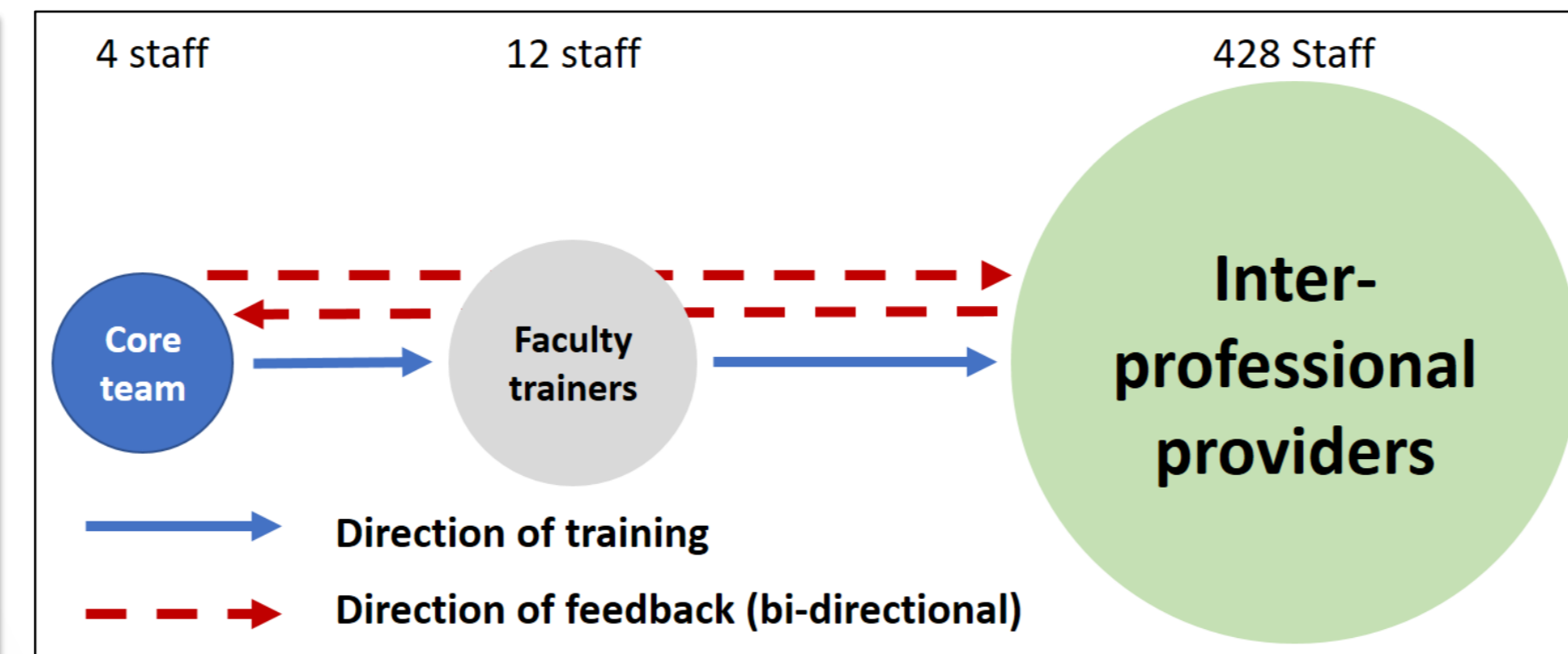


Figure 2: Schematic representation of the simulation implementation team and framework. The core development team (blue) trained the faculty trainers (grey)—who in turn trained the rest of our network's inter-professional perioperative staff (green). Daily feedback was obtained from participants and faculty trainers following each simulation, and regular updates on changes to materials or SOPs were communicated through faculty trainers or directly to staff members.

All of our up-to-date COVID-19 perioperative resources are available online by scanning QR code: (Includes resources on OB / GI / IR and more)



SCAN ME



QR Code to view online