

ACS 2022 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

Research In-Progress

Multi-Care Team Training for Obstetric Abdominal Trauma: Developing a Cost-Effective Simulator

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Introduction: The Rocky Vista University Healthcare Simulation Center was approached by a regional Level II Trauma Center to develop a multi-care simulator to assess an expansion of the emergency department. The Trauma Center aimed to involve multi-care teams including obstetric and surgical physicians, nursing staff, EMT/Care Techs, and supervisory positions. Numerous obstetric-inclusive and surgical-inclusive simulators exist in the marketplace to stress specific disciplines yet it is challenging to find a cost-effective model that demands multi-system care. In order to create a unique team training scenario with materials commonly found in a simulation center, the most effective components of previously purchased simulators were combined to create an obstetric abdominal trauma simulator.

Methods: Supplies included a female task trainer torso (Laerdal® - Resusci Anne™), large and small bowel, liver, static great vessels, bladder, gynecoid bony pelvis, blood pump system (Strategic Operations®), placenta (Gaumard®), and inflatable baby (Laerdal® - NeoNatalie™). Abdominal musculature and skin were assembled from leftover silicone products. Two versions of a gravid uterus were created, first by suturing silicone muscle tissue with tubing to connect the uterus to an external blood pump and second by using the NeoNatalie™ inside a waterproof roll top bag from a sporting goods store to simulate amniotic sac and fluid.

Preliminary Results: Two multi-care teams participated in the obstetric abdominal trauma simulation on separate occasions. Feedback was overwhelmingly positive. Participants ranked the simulator as realistic and a valuable component of their experience. Team training identified several areas of system improvement for the Trauma Center.

Next Steps: Acquiring data and feedback from multiple healthcare facilities will allow a greater confidence in the effectiveness and usefulness of the obstetric abdominal trauma simulator in training scenarios. Additional multi-care teams will be recruited to participate in the simulation, with specific evaluation of team behaviors and outcomes.

