Implementation of High Fidelity Post-Partum Hemorrhage Simulation for an Acute Care Multisite, Interprofessional Women and Children’s Service Line Improves Patient Care Outcomes

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International Nursing Association for Clinical Simulation & Learning is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation.
Disclosures

1. Conflict of Interest
   • Laura Wining reports no conflict of interest
   • Tracy D. McGuire reports no conflict of interest
   • Julia Greenawalt (INACSL Conference Administrator & Nurse Planner) reports no conflict of interest
   • Leann Horsley (INACSL Lead Nurse Planner) reports no conflict of interest

2. Successful Completion
   • Attend 100% of session
   • Complete online evaluation
Learning Outcomes

Upon completion of this educational activity, participants will be able to:

1. Identify at least three ways to successfully develop interprofessional, multisite, in situ, simulation education scenarios.
2. Summarize different opportunities found post education that will contribute to determining the effectiveness of simulation offerings.
3. Give examples of how to begin development of simulation education through a needs assessment that will later assist in measuring qualitative data to determine effectiveness of simulation education offerings.
Simulation Objectives in 2015-2016

To implement an in situ high fidelity simulation for a multisite multidisciplinary Women and Children’s service line to increase early Crew Resource Management and use of medications for effective treatment in patients with postpartum hemorrhage (PPH), therefore decreasing surgical interventions and blood product replacement.
Setting:
A large hospital system in Colorado where approximately 3,500 women give birth each year.

Participants:
Each simulation included 4 nurses, 1-2 physicians, and 1 technician
45 High Fidelity Simulations were completed with a total of:
- 195 nurses
- 34 physicians
- 24 surgical techs
The PPH scenario progressed from a Labor & Delivery or Post-Partum room to the operating room.

The evaluation of the simulation focused on:

- Identification of early blood loss warming system criteria
- Utilization of Crew Resource Management/TeamSTEPPS
- Identification of necessary equipment locations
- Acquisition and administration of medications
- Activation of massive transfusion process.

A simulation evaluation tool was used to determine if the objectives were met.
Each Simulation Included:

20 Minute Scenarios

Pre-brief focusing on a safe learning environment followed by bedside report

Debriefing with trained facilitators using PEARLS debriefing framework in a separate location.
Developing a Successful Simulation Education Scenario

With consideration of Interprofessional, Multisite, and In Situ components

1. Include all stakeholders from different disciplines in the planning phases.
2. Begin with a needs assessment that incorporates all interprofessional needs.
   - Quality/Safety Intelligence Reports (SI)
   - New Early Blood Loss Intervention (EBI) Policy
   - Hardwiring Team Response and Delineation of Roles
3. Self Scheduling through an electronic learning management system with stakeholders involvement in date/time/site selection.

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UCHealth North Simulation Center

Unit/Area: Mother and Children Service Line RN/Tech/Physician
Simulation Name: Lucy Heart-Post-Partum Hemorrhage
Purpose of Simulation: Annual competency for staff

Anticipated Participants per Simulations: 7 Participants per scenario
Content to be included: Utilization of the EBI policy with recognition of the EBI trigger criteria, Medication administration for obstetrical hemorrhage, Initiation of massive transfusion protocol, Practice emergent SBAR communication/hand-off, Perform mechanical hemorrhage interventions.

Objectives:
1. The participants will appropriately administer uterotonics in the post-partum hemorrhaging patient.
2. The participants will demonstrate knowledge of policy and procedures for hemorrhage management.
3. The participants will apply SBAR communication and closed loop communication appropriately within the simulation.
4. The participants will demonstrate appropriate documentation for the actively hemorrhaging patient.
5. The participants identify additional needs and seek additional resources appropriately.

Supplies: Noelle simulator with boggie uterus, Name band with blood lock code, glasses, BP cuff, D&C Hyst Tray-Totes, Bakri Balloon, hemabate, methergen, Pitocin, cytostics, foley, LR to gravity, NS, Blood draw tubes, Blood/tubing, IV start pack, Vacutainers, pressure bag, med syringes.
Developing a Successful Simulation Education Scenario (Continued)

With consideration of Interprofessional, Multisite, and In Situ components

4. Simulations done In Situ to
   - Make it less time restrictive and assist with buy in from providers.
   - Allow optional staff that are working to participate as hospital census allows.

5. Multisite simulations done:
   - Consecutive days in a row to improve resource management
   - Less risk for equipment damage during transportation

6. Block patient care areas required for simulations in accordance to education scheduling with consideration of patient census needs.

7. Equal weighted discussions in debriefing-not dependent on hierarchical roles.

UCHealth
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Opportunities Actualized Post Simulation to Improve patient Care

Identified Opportunities

1. RN’s unsure about their roles in OR as Primary and Secondary nurses.
2. Identified different processes between sites for how each activates a resource response for a massive transfusion protocol (MTP).
3. Knowledge deficits with utilization and allocation of Level 1 Rapid Infuser.
4. Knowledge deficits with providing assistance to Anesthesia with rapid sequence intubation (RSI).

Implemented Interventions

1. Signage hung in all OR’s with role delineation.
2. Implemented a standardized process for activating MTP.
3. Follow up education provided to staff with hands on remediation validated.
4. Follow up education that included individual check offs with charge RN’s and every primary RN.
Opportunities Actualized Post Simulation to Improve patient Care

**Identified Opportunities**

5. Difficulty setting up OR table stir-ups for correct patient placement that delayed emergency care with one participant injury during education.

6. Personal protective equipment (PPE) for OR entry not available at one entrance to OR that delayed movement of patient to OR.


**Implemented Interventions**

5. Follow up education that included individual check offs with charge RN’s and every primary RN.

6. All labor rooms now have PPE available at the exit to the room to expedite emergency departure to OR.

7. Process change to include the PPH cart with all OR set ups.
Developing Simulations through a Needs Assessment to assist in Qualitative Measurement

1. Identify your current standard quality chart review process and preexisting quality matrix.

2. Based on current quality data analysis develop objectives/outcomes for the simulation education.
   A. To decrease rate of hemorrhages within the service line.
   B. To utilize simulation to hardwire a new Early Blood Loss Intervention (EBI) Policy: Validating RN understanding and implementation into practice.
   C. Utilization of a standardized evaluation tool: Scenario specific to monitor simulation stages to determine remediation needs as well as for debriefing facilitation priorities.
Data Collection Methods

1. Chart review was done pre simulation education on 78 women with PPH January – June 2015 and compared to 82 women February – August 2016 post simulation education.

2. Patient outcomes pre and post education were compared using data abstracted from the electronic medical record for objective data collection.

3. Individual paper/electronic post simulation surveys were completed by each participant anonymously for subjective data collection.
Postpartum Hemorrhage Interventions
Chart Comparisons 2015-2016

- Required Uterotonic Meds only: Pre Simulation 78 PPH Charts 52, Post Simulation 82 PPH Charts 60
- Required Surgical Intervention: Pre Simulation 78 PPH Charts 27, Post Simulation 82 PPH Charts 20
- Required Blood Products: Pre Simulation 78 PPH Charts 18, Post Simulation 82 PPH Charts 9
Conclusions/Implications to Practice

Multidisciplinary in situ simulation education is an effective tool to identify process improvement opportunities, hardwire early intervention for PPH complication and improve patient outcomes.
References


References (Continued)


