



Midwifery education in practice

Interprofessional simulation of a retained placenta and postpartum hemorrhage



Julia C. Phillippi ^{a,*}, Margaret Buxton ^{b,1}, Maria Overstreet ^{c,2}

^a Vanderbilt University School of Nursing, 517 Godchaux Hall, 461 21st Ave South, Nashville, TN 37240, USA

^b Vanderbilt University School of Nursing, 345 Frist Hall, Nashville, TN 37240, USA

^c Middle Tennessee School of Anesthesia, 315 Hospital Drive, Madison, TN 37116, USA

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ABSTRACT

To improve quality and safety in healthcare, national and international organizations have called for students to receive dedicated training in interprofessional communication and collaboration. We developed a simulation for nurse-midwifery and nurse-anesthesia students, using the Core Competencies for Interprofessional Collaborative Practice framework. The simulation, involving a postpartum women with a retained placenta and acute blood loss, allowed students to collaboratively manage a high-risk situation. We present the details of the simulation and evaluation to assist educators.

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Introduction

Over a decade ago, the United States Institute of Medicine called for healthcare providers to function in interdisciplinary teams using communication, cooperation, coordination, and collaboration to improve quality and safety (Institute of Medicine, (2001); Greiner and Knebel, 2003). The World Health Organization (WHO) and the Agency for Healthcare Research and Quality (AHRQ) agree collaboration is essential, especially for complex or high-risk patients, and the transformation to collaborative care must begin with the education of new providers (World Health Organization, 2010; Agency for Healthcare Research and Quality, 2011). Healthcare providers need education in skills to effectively function within a cooperative team (Greiner and Knebel, 2003; World Health Organization, 2010). In response to the calls for action, leaders in healthcare education in the United States (US) developed and endorsed competencies for interprofessional education to guide educators (Interprofessional Education Collaborative Expert Panel,

2011). However, they did not stipulate how educational programs teach or assess these competencies.

Literature supports that simulation is an effective method for modeling, improving, and assessing skills critical in interprofessional practice, especially when compared with traditional classroom settings (Reese et al., 2010; Reising et al., 2011). While difficult to measure complex learning, students and practitioners benefit from safe environments in which to practice skills and improve communication and team-based patient care (Issenberg et al., 2005; McGaghie et al., 2010; Raab et al., 2013). While schools are responsible for ensuring graduates are competent in multiple areas of clinical practice, it is not feasible to require every student to have successfully managed all possible high-risk patient situations prior to graduation. Simulation provides a safe environment to learn and implement a diversity of knowledge, skills, and abilities, and is ideal for experiences that are very rare or dangerous (Bensfield et al., 2012).

Postpartum hemorrhage is a life-threatening emergency and a major cause of maternal mortality, causing a third of maternal deaths worldwide (Khan et al., 2006). In the US, postpartum hemorrhage occurs in 1–3% of births, but is the cause of 19% of the nation's maternal deaths (Bateman et al., 2010; Berg et al., 2010). Management of severe postpartum bleeding requires integrated care that can include nurses, midwives, obstetricians, nurse-anesthetists, and anesthesiologists. Interprofessional collaboration and communication is an essential component of effective

* Corresponding author. Tel.: +1 615 343 2683.

E-mail addresses: julia.c.phillippi@vanderbilt.edu (J.C. Phillippi), margaret.buxton@vanderbilt.edu (M. Buxton), m.overstreet@mtsa.edu (M. Overstreet).

¹ Tel.: +1 615 385 9903.

² Tel.: +1 615 732 7893.

management of this rare but potentially deadly event (Bingham et al., 2010). However, collaboration and communication continues to be a weakness in health systems. Poor communication is a leading 'root cause' of maternal death in the US (Joint Commission, 2013).

The diversity of care providers for birthing women and their varied scope of practice can contribute to communication problems. Healthcare workers often have overlapping but distinct roles. In the US, nurses provide care to women throughout labor and postpartum, working closely with other providers. Nurse-Midwives, a type of Advanced Practice Nurse (APRN), can provide complete intrapartum care to low-risk women. Nurse-anesthetists, another type of APRN, provide anesthesia services alone or in conjunction with anesthesiologists. Nurse-Anesthetists can independently provide anesthesia during surgery and birth. Beyond pain management, they monitor patient hemodynamics during surgery or emergencies and manage fluid resuscitation if needed.

While nurse-midwives and nurse-anesthetists are able to provide care independently for most patients, complex or difficult situations require physician consultation and, occasionally, referral. Since consultations or transfers of patient care often occur during rapidly unfolding situations, communication and collaboration skills are essential for all provider types. The purpose of this manuscript is to describe the development and implementation of an interprofessional simulation for nurse-midwifery and nurse-anesthesia students designed to increase interprofessional communication and collaboration. The goal is to provide information for educators and nurse-leaders to create interprofessional simulations to meet the Core Competencies for Interprofessional Collaborative Practice (Interprofessional Education Collaborative Expert Panel, 2011).

Participating schools

Within the greater Nashville area, there are several schools preparing APRNs for clinical practice. Middle Tennessee School of Anesthesia, has 136 total students, all in the nurse-anesthesia MSN program. Vanderbilt University School of Nursing has 766 MSN students in 17 APRN specialties, including nurse-midwifery but does not offer anesthesia as a specialty. Both schools have dedicated simulation facilities used throughout the curricula to practice and assess skills and critical thinking abilities. However, neither school required simulations focused on collaboration and communication with other types of professionals. Instead, the faculty relied on classroom and clinical experiences to develop competency in these areas. The faculty of both institutions viewed the lack of dedicated training in interprofessional communication as a weakness. The interdisciplinary simulation was designed jointly by the nurse-anesthesia and nurse-midwifery faculty to provide students with a realistic, complex experience that required interaction with other healthcare providers to resolve an ongoing patient crisis.

Methods

Simulation development

The student learning goals were derived from the Core Competencies for Interprofessional Collaborative Practice and included: 1) understanding and articulating the roles and responsibilities of all healthcare team members, 2) effectively communicating pertinent information to other members of the healthcare team, and 3) sharing leadership and responsibility with other healthcare team members to appropriately manage the patient needs (Interprofessional Education Collaborative Expert Panel, 2011). The faculty believed a structured simulation with debriefing would

provide an optimal environment for the teaching and learning of interprofessional communication and collaboration skills. A postpartum hemorrhage and retained placenta was the patient crisis for the event as it required implementation of complex knowledge and collaboration at the peak of their practice capacity for both groups of students. While manual removal of the placenta is a rare event for nurse-midwives in the US, it is an essential competency for use in emergency situations. The case was designed so that there was not another method of managing the rapidly unfolding hemorrhage; if students requested physician consultation they were informed the physician was unavailable due to an emergency, forcing them to manage the patient situation. While the simulation was designed to benefit participants, Institutional Review Board (IRB) approval was obtained from Vanderbilt School of Nursing to verify participant protections and allow for dissemination of results. The Middle Tennessee School of Anesthesia reviewed the IRB approval and issued a letter of support.

Faculty of the schools met multiple times to plan and develop the simulation. The faculty used constructivism and adult learning principles as the theoretical foundation for the learning experience. The faculty wanted to create a learning environment where students could build on their previous life experience. In addition, the learning event was more valued than a measured outcome. The anesthesia faculty were also highly influenced by the Nursing Education Simulation Framework (Reese et al., 2010); the Duke Altered Template for Interdisciplinary Simulation was used as a planning tool.

The simulation was designed to build on existing student knowledge, skills, and abilities and spur development of new communication and collaboration skills. Timing of the simulation within the curricula was an essential component; all students needed sufficient knowledge and skills to provide effective patient care and allow for acquisition of new skills in communication and collaboration. In addition, the patient scenario needed to be challenging, yet not overwhelming, for both student groups. The simulation was designed to meet course objectives of the final integrative clinical course for the nurse-midwifery students, and was an optional activity for the nurse-anesthesia students. Nursing students were invited to participate in the 2012 simulation, but were unavailable for the 2013 sessions. While participation in the simulation was expected of nurse-midwifery students as part of the final integrative clinical course, students did not receive a grade based on their performance to decrease grade-related anxiety and encourage students to view the scenario as an opportunity for growth. Student evaluations of the experience were anonymous to protect student identity.

The simulation was designed to include a birth followed by a retained placenta and a severe postpartum hemorrhage. This scenario required nursing, nurse-midwifery, and nurse-anesthesia students to communicate and collaborate to manage the unfolding patient crisis. Nurse-midwifery students were expected to remove the placenta and manage a postpartum hemorrhage in addition to clearly communicating with all team members, including the mother, about the need for pain control prior to the procedure, and the ongoing amount of blood loss. The nurse-anesthesia student was expected to administer appropriate medications for pain control and perform fluid management while effectively communicating with team members and the patient and family. The nursing student was expected to implement orders, prompt the practitioners as appropriate, care for the newborn baby, and communicate with all team members.

To encourage the students to learn to interact with team members and patients during an emergency, we chose to have a person, rather than a high-fidelity mannequin, as the patient. To encourage realism, the simulated patient wore PartoPants™ to

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