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# Implementing an Evidence-Based Educational Module on Nurses' Role on Management of Postpartum Hemorrhage

Stella Motanya  
*Walden University*

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# Walden University

College of Health Sciences

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Stella Motanya

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Walden University  
2015

Abstract

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Management of Postpartum Hemorrhage

by

Stella Motanya

MS, Texas Woman's University, 2005

BS, California State University Dominguez Hills, 1999

Project Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

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## Abstract

Postpartum hemorrhage is the second leading cause of maternal death in the United States. According to American College of Obstetricians and Gynecologists, postpartum hemorrhage is an obstetric emergency. Between 2012 and 2013, a medical facility reported 369 postpartum hemorrhages, a 4.7% increase from previous years. It is important to address this practice issue because postpartum hemorrhage can lead to maternal mortality. The purpose of this project was to increase staff nurses' awareness and knowledge of their role on the management of postpartum hemorrhage. The outcome of the project paper was implementation of an educational module on postpartum hemorrhage at this medical facility. The conceptual model, Academic Center for Evidence-Based Practice, was used to guide this project. The project researcher presented a postpartum hemorrhage module to a staff of 80 postpartum nurses. The module included a pre and post-test developed using Association of Women's Health, Obstetric, and Neonatal Nurses' guidelines and was reviewed by a panel of experts for content validity, content on postpartum hemorrhage, and an evaluation of the project. The panel consisted of the Director of Maternal Child unit and 3 appointed obstetricians. Nurses' knowledge of postpartum hemorrhage was evaluated by comparing mean aggregate pre and post-test scores. Results showed an increase in the staff nurses' knowledge and awareness of postpartum hemorrhage. These findings are important for nurse leaders and healthcare organizations because they demonstrate that providing staff nurses with an educational program on the importance of postpartum hemorrhage can impact the level of knowledge and thereby increase positive patient outcomes.

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## **Section 1: Overview of the Evidence Based-Project**

### **Introduction**

Maternal morbidity is an unexpected outcome of childbirth. The expected outcome after the birth process is that mother and baby are discharged home without complications. However, WHO, UNICEF, UNFPA, World Bank (2014) reported 230 maternal deaths per 100,000 live births in developing countries and 16 maternal deaths per 100,000 live births in developed countries in 2013. According to Bingham and Jones (2012), more the 90 percent of maternal deaths that occurred in developing countries were related to postpartum hemorrhage and over 50 percent of these were preventable. In the year 2000, an estimated 132,000 maternal deaths were caused by postpartum hemorrhage worldwide (AbouZahr, 2003). This project examined postpartum hemorrhage at a hospital that reported 305 postpartum hemorrhages from January 2012 to January 2013, 72 of which involved patients who required blood transfusion and other invasive procedures.

Postpartum hemorrhage is the second leading cause of maternal death in the United States. The American College of Obstetricians and Gynecologists (ACOG) classifies postpartum hemorrhage as an obstetric emergency; it is typically defined as blood loss of 500 ml or greater during a vaginal delivery and blood loss of 1000 ml or greater during a cesarean delivery (Bingham & Jones, 2012). While these definitions are consistent with guidelines from the World Health Organization (WHO), it is important to note that they do not only consider the volume of blood loss after delivery for postpartum hemorrhage. Postpartum hemorrhage is, instead, a clinical term used to describe signs

and symptoms versus quantity of blood loss (WHO, 2007). Just as each patient is different, it is essential to consider each situation individually to decide the best course of action.

In today's ever-changing healthcare, it is imperative that clinicians are prepared to meet the demand of caring for patients with life threatening conditions (Kalb, O'Conner-Von, Schipper, Watkins, & Yetter, 2012). Davis et al. (2013) suggested that there is a wide gap between evidence-based practice and current nursing practice. Focus should be placed on learning competencies during simulations in conjunction with education for staff nurses. Translating evidence into practice significantly increases nurses' satisfaction and positive patient outcomes (Feight, Baney, Bruce, & McQuestion, 2011). The first step toward decreasing preventable maternal mortality and morbidity related to postpartum hemorrhage is to realize that improvements are needed (Jennings, 2012). According to Bingham and Jones (2012), the most common cause of postpartum hemorrhage is uterine atony, and over 50% of deaths that occur from uterine atony are preventable. There is clearly room for improvement in this area.

Such statistics reveal the significance of translating evidence into practice. While unexpected blood loss following delivery should set into motion evidence-based predetermined interventions that provide the measures necessary to prevent postpartum hemorrhage, this does not always occur. According to Coopey and Nix (2006), applying evidence to practice decreases patient cost, increases positive patient outcomes and unit operation production. In a study conducted by Koehn and Lehman (2008), 65% of staff nurses reported feeling empowered and informed about the care they give to their patients

after attending in-services and workshops. When nurses receive education on topics that are relevant to their practice, they are more able to provide the appropriate care for their patients. It is important that nurses seek knowledge regarding current healthcare practices.

### **Problem Statement**

Healthcare providers play a key role in the prevention of maternal morbidity. At the time this study was conducted, staff nurses at the medical facility used in this study were not required to take monthly, quarterly, or annual training on postpartum hemorrhage. The clinical problem at this facility, hereafter referred to as ABC Medical Facility, was the specific lack of education given to staff nurses on managing postpartum hemorrhage. According to Ruth and Kennedy (2011), recognizing postpartum hemorrhage as a potentially life-threatening complication requires knowledge and training. Gabel and Weeber (2012) further found that staff nurses continuously underestimate blood loss when assessing a patient's lochia (bleeding) after delivery. This underestimation of blood loss leads to improper management of blood product replacement during a postpartum hemorrhage.

Additional evidence suggests a strong need for education in this area. Ruth and Kennedy (2011) noted an increase in positive patient outcomes during treatment of postpartum hemorrhage after staff nurses attended training on the appropriate documentation and quantification of blood loss during the postpartum period. Similarly, a cohort study by Leach and Mayo (2013) that examined the role of staff nurses during a rapid response code revealed that while staff nurse response rates to a rapid response

code were prompt, the care delivered lacked efficiency. However, these authors also noted that care provided to patients during a rapid response drastically improved after staff nurses in the critical care area were required to attend mandatory training and inservices on caring for a patient during rapid response. This demonstrated how further training on postpartum hemorrhage could be beneficial to postpartum staff nurses.

Control of postpartum hemorrhage occurs by uterine contraction. Immediately after delivery, the uterine muscle contracts for 24 hours. Lack of this contraction produces increase bleeding and uterine vessel dilation. When this occurs, the uterus remains boggy and myometrial contraction is delayed, resulting in uterine atony: one of the leading causes of postpartum hemorrhage (Lowe, 2012). Fundal massage is the immediate intervention in preventing hemorrhage from this condition (Cohain, 2012). Nurses working in birthing areas such as postpartum should possess strong assessment skills and a thorough understanding of fundal massage, which is a life-saving intervention (Cohain, 2012).

### **Purpose Statement**

The purpose of this Evidence-based Project (EBP) is to initiate a postpartum hemorrhage educational module for staff nurses. The focus of this module is to improve awareness and knowledge about the management of postpartum hemorrhage. With this increased knowledge, the nurses are more able to care for their patients, which can lead to more favorable results. This can ultimately reduce maternal morbidity and mortality.

### **Project Objectives**

There were three main project objectives. The first was to develop a postpartum hemorrhage module to serve as a future educational resource. I wanted to develop a resource that could be available to current and future nurses. The second objective was to teach postpartum nurses early recognition of postpartum hemorrhage and the initial steps of managing postpartum hemorrhage. Providing these nurses with information was a way to give them the tools necessary to more successfully handle postpartum hemorrhages. The final objective was to evaluate nurses' recognition and readiness to implement postpartum hemorrhage response after completion of the module. This was necessary to make sure they had learned the best methods for these situations.

### **Significance/Relevance to Practice**

The United States ranked 50th of all countries for maternal mortality worldwide in 2010 (WHO, 2012). From 2007-2011, there was a 26 percent increase in maternal mortality and morbidity directly related to postpartum hemorrhage (Bingham & Jones, 2012). In the State of Texas, for example, of the 385,746 births in 2010, ninety-five women died as a result of pregnancy or childbearing. Eighty percent of these deaths were directly related to postpartum hemorrhage. Seventy-three percent of these postpartum hemorrhage deaths were preventable (Center for Disease and Prevention Control, 2012). From January 2012 to January 2013, 305 patients experienced postpartum hemorrhage at ABC Medical Facility (see Appendix A). This number demonstrates that further education on the treatment of postpartum hemorrhage is necessary at this facility.

The current focus of instruction on postpartum hemorrhage is early recognition. However, in order for early recognition to take place, a knowledge base must be provided so nurses are able to recognize early signs and symptoms of postpartum hemorrhage and begin the appropriate intervention. Nurses are often the first line providers responding to postpartum hemorrhage because they are readily at the bedside. According to the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), 93% of maternal deaths caused by postpartum hemorrhage could have been prevented with improved clinical response (AWHONN, 2013). Nurses should be collaborators with clinicians in the development of protocols, plan of care, and activities for the management of postpartum hemorrhage (Pacheco, Saade, Tyner, Clark, & Hankins, 2012).

This DNP project was constructed from the belief that nurses should have all the tools necessary to evaluate and initiate management of postpartum hemorrhage (Jennings, 2012). The project used the Academic Center for Evidence Based Practice (ACE) Star Model to guide this EBP due to its focus on knowledge. The ACE Star Model was established in 2000 by the Center of Excellence for the University of Texas Health Science Center at San Antonio. It has been used to bring about practice change through formal and informal education (Stevens, 2004).

### **Project Question**

The primary research question for this project was "Would an evidence-based educational postpartum hemorrhage module increase nurses knowledge and attitude for recognizing and managing postpartum hemorrhage?" The project used the PICOT



(Patient population, Intervention or Issue of interest, Comparison intervention or group, Outcome, and Time frame) format, which provided an organized approach to the development of the project question. PICOT allows for the formation of an appropriate, relevant, and evidence-based question (Melnyk & Fineout-Overholt, 2011).

### **Evidence-Based Significance of the Project**

According to Bros et al. (2012), 70% of maternal deaths that occur within the first 24 hours of delivery are the result of postpartum hemorrhage. The California Maternal Quality Care Collaborative (CMQCC) project initiated new protocols and policies in the prevention of maternal death secondary to postpartum hemorrhage by providing support to hospitals and clinicians in implementing practices to decrease maternal mortality and morbidity. Subsequently, all states were required to review their own policies, due to positive patient outcomes that resulted from these initiatives (Guilliland, 2007). In a cohort study conducted by Andreatta, Gans-Larty, Debpuur, Ofosu, and Perosky (2011), researchers describe that initial nurse response to patients experiencing postpartum hemorrhage decreased complications such as hysterectomy by 85% and decreased interventions such as blood transfusion and Bakri balloon by 45%. This study concluded that early recognition and intervention by staff nurses are vital to improved maternal outcomes.

According to Hoffman, Aitken, and Duffield (2009), nurses in general and novice nurses in particular lack the critical knowledge and skills needed for identifying changes in their patients' condition. Increasing awareness and education are key strategies in the prevention and management of postpartum hemorrhage. This module was designed to be

used with effective teaching and reliable and valid evaluation methods integrated into existing educational plans and curriculums. It should serve as a significant resource to staff nurses caring for mothers in a postpartum unit.

### **Implications for Social Change in Practice**

This EBP was designed to promote positive social change by educating postpartum staff nurses on the management of PPH, techniques of fundal massage, and first response interventions. This, in turn, should build confidence, increase skills and knowledge, and foster lifelong learning. Most importantly, the EBP will decrease maternal morbidity and mortality directly caused or related to PPH. Decreasing the maternal morbidity rate directly related to postpartum hemorrhage has a positive impact on social change. When maternal health is maintained, the family unit is more likely to remain intact and functional in society. A family unit with an intact maternal role is more likely to provide children with the stability required to become contributing members of society (Cheng et al., 2011).

### **Definitions of Terms**

*Bakri balloon:* A method of treatment that uses a bakri balloon device for temporary control or reduction of postpartum hemorrhage when conservative management of uterine bleeding is warranted (Vitthala, Tsoumpou, Anjum, & Aziz, 2009).

*Expert nurse:* A term used to indicate the level of nurses' expertise. The expert nurse recognizes situations as whole parts rather than separate entities and has the ability

to recognize critical situations on demand. This nurse performs at a high level and uses his or her intuition based on their deep knowledge and experience (Gardner, 2012).

*Fundal massage:* A method of treatment that uses fundal massage to manipulate the uterus after delivery of the fetus and placenta through the abdominal wall to harden the uterus. This prevents the risk of postpartum hemorrhage due to uterine atony (Hofmeyr, Abdel-Aleem, & Abdel-Aleem, 2008).

*Maternal-Newborn:* The area of nursing referencing mothers and newborns (Norris, 2008).

*Novice nurse:* A term used to indicate the level of nurses' expertise. The novice nurse is a beginner nurse with no clinical experience. This nurse needs guidance in order to perform (Gardner, 2012).

*Postpartum hemorrhage (PPH):* A clinical term used to describe signs and symptoms versus quantity of blood loss. Symptoms include major physiological change that can produce hemodynamic instability (WHO, 2007).

*Postpartum hemorrhage module:* The educational material presented during this project's workshop. This includes a pretest, posttest and exercises on PPH.

*Proficient nurse:* A term used to indicate the level of nurses' expertise. The proficient nurse assesses situations as whole parts and reflects on past experiences to guide performance (Gardner, 2012).

*Uterine atony:* A condition in which the muscle of the uterus loses its tone and ability to contract after delivery of the fetus (Cohain, 2012).

### **Assumptions and Limitations**

This EBP was conceived after communicating with stakeholders at ABC Medical Facility. It was specifically designed to educate postpartum staff on the importance of identifying postpartum hemorrhage, so as to decrease the incidence of code OB calls and complications from postpartum hemorrhage. ABC Medical Facility had an average of 8 code OB calls per month from January 2012 to January 2013, showing a strong potential need for this training (A. Harrow, personal communication, May 1, 2014). The major assumption of the study was that the number of women at ABC Medical Facility experiencing PPH would decrease after initiation of the project. An additional assumption was that after educating staff nurses they would be able to respond to postpartum hemorrhage in a timely manner thereby preventing any further complications that could arise from late detection of postpartum hemorrhage.

This project had limitations in multiple areas. The first was found in the process of educating the staff nurses. Not all staff nurses were required to attend the educational workshops. However, ABC Medical Facility's stakeholders strongly encouraged that all novice nurses in the postpartum unit be given an opportunity to attend the educational workshop. ABC Medical Facility felt this was important because novice nurses had fewer experiences with postpartum hemorrhage. Proficient and expert nurses were also invited to attend. Proficient nurses rely on their experience and routine practice to guide them during taxing situations, which may or may not be evidenced-based. Interventions performed during these situations are not always accurate and can lead to wrong decisions (Gardner, 2012).

A second limitation was that the content was delivered to a specific group of nurses. While the information was presented to postpartum nurses, it could also benefit labor and delivery nurses, as well as nurses who float to the postpartum unit. A third limitation was that patient outcome, such as code OB calls, was not immediately measured, due to stakeholders' request that this area not be examined at this time. ABC Medical Facility planned to examine the effect of the intervention at a later date by gathering data on the number of postpartum hemorrhages reported after implementation of the project.

These limitations had some impact on the Evidence-Based Project. While nurses of varying years of experience were invited to attend the workshop, the focus was on novice nurses. Therefore, the project participants were more likely to be novice nurses, and the data were more representative of novice nurses than experienced nurses. Since the project only included nurses from the postpartum unit, the pretests and posttests only measured the knowledge of postpartum nurses. Due to this, it is not clear whether the project would have less of an impact, the same impact, or a greater impact on the knowledge base of nurses in other disciplines. Therefore, the findings cannot be generalized to nurses in other areas of patient care. Finally, due to stakeholder request, there was no follow-up data collection to see if the educational module impacted the actual practices of postpartum nurses at ABC Medical Facility. While there was a measured difference in the knowledge of the nurses who attended the workshop, its impact to practice was not clearly demonstrated.

### **Summary**

Nurses perform essential and lifesaving interventions on a daily basis. Equipping nurses with knowledge and techniques needed to identify the patient experiencing postpartum hemorrhage is essential in the management of postpartum hemorrhage (Maughan, Heim, & Galazka, 2006). The first step in decreasing maternal morbidity and mortality caused by postpartum hemorrhage is educating nurses and preparing them to handle emergent situations such as postpartum hemorrhage, as suggested by Lowe (2012). To achieve this goal, all nurses in the postpartum unit were invited to participate in the educational intervention. However, novice nurses were particularly encouraged to participate in the educational intervention.

## **Section 2: Review of Literature Theoretical and Conceptual Framework**

### **Introduction**

The purpose of this literature review was to provide support for the identified problem by identifying current evidence-based practices for managing postpartum hemorrhage. In addition, the literature review was used in identifying, integrating, analyzing, and summarizing studies conducted on the nurses' roles in management of postpartum hemorrhage. The literature review search process focused on meta-analysis studies, systemic reviews, and current guidelines relevant to the population and issue of interest. Databases searches included EBSCO, CINAHL, PUBMED, Google Scholar, Cochrane Databases, Johanna Briggs Institute, Center for Disease Control, World Health Organization, and Medline (Ovid). The search criteria consisted of the following keywords: *postpartum hemorrhage*, *nurses' role*, *education*, *knowledge*, and *management*. The search was limited to English language, full-text articles published between January 2000 and December 2013. An additional criterion used was including studies addressing a program intervention or educational module for nurses. Studies pertaining to nurses' attitude on change or learning new interventions were also evaluated.

### **Specific Literature**

In order to understand the prevalence of postpartum hemorrhage, it is necessary to examine the underlying causes. Numerous studies have focused on how frequently postpartum hemorrhage occurs, how it relates to uterine atony, and the results to patients who have suffered postpartum hemorrhage. Thompson and Treanor (2010)

examined a case in which maternal hemorrhage resulted in morbidity. The authors discussed how a 32-year-old experienced an uncomplicated labor, but within 30 minutes of delivery underwent a hysterectomy secondary to uterine atony. Similarly, Bros et al. (2012) concluded that a total of 194 women underwent uterine artery embolization between 2000 and 2009 due to uterine atony, resulting in eight maternal hysterectomies and three maternal deaths. Lowe (2012) discussed postpartum hemorrhage in a healthy 39-year-old woman who labored for 39 hours. Three hours following delivery, the bedside nurse noted the patient's vital signs as abnormally high, with a pulse rate of 128 beats per minute, a blood pressure of 142/86 mmHg, and respirations of 22 breaths per minute. Upon immediate assessment, the nurse recognized uterine atony and notified the appropriate team.

In the article *Maternal Death from Obstetric Hemorrhage*, Bingham and Jones (2012) described uterine atony as the leading cause of postpartum hemorrhage. Between 2005 and 2010, uterine atony accounted for 27.5 percent of postpartum hemorrhages in women with no identifiable risk factors. Maughan et al. (2006) stated that 90 percent of all postpartum hemorrhage is caused by uterine atony, despite prophylactic treatment with uterotonic agents such as oxytocin. Prophylactic use of these drugs should decrease the number of postpartum hemorrhage incidents; however, the literature review indicated this was not always the case.

In normal circumstances, uterine firmness depends on myometrial contraction; a process of contraction and retraction of the uterus shortening its muscle hence reducing the amount of blood supplied to the vessels, preventing hemorrhage. When this



pathophysiology fails, uterine atony occurs, often leading to postpartum hemorrhage (Bingham & Jones, 2012). Uterine atony delays hemostasis, which should occur immediately after birth and within minutes of placental separation. Uterine atony, however, is easily treated with bimanual compression and fundal massage if detected in a timely fashion. Studies of nurses' contributory role in postpartum hemorrhage have found that immediate fundal massage performed by the bedside nurse decreases the number of complications experienced by patients (Norris, 2008).

Postpartum hemorrhage rates have been on the rise in the United States. Between 2000 and 2009, the rate of postpartum hemorrhages increased by 27% in a New York hospital. The authors suggest that 25% of these incidents were a result of uterine atony (Tremayne, Harrison, & Moriarty, 2007). In a meta-analysis study by Anderson and Etches (2007), researchers examined 54 postpartum hemorrhage incidents and found that in 45 of these cases the bedside nurse's quick response prevented further complications for the patient. In six of these cases, the patient suffered hypovolemic shock due to late recognition of postpartum hemorrhage. This study's findings indicate that nurses' early recognition to postpartum hemorrhage decreases the morbidity and mortality caused by postpartum hemorrhage. These articles demonstrate the importance of the nurses' knowledge as it relates to postpartum hemorrhage. Nurses are frequently the first responders to emergent events because they are readily at the patients' bedsides. It is necessary that they recognize the signs and symptoms of postpartum hemorrhage and that they know how to respond appropriately in these situations.

### **General Literature**

Levett-Jones et al. (2010) described the importance of engaging nursing students in clinical reasoning by developing critical thinking and decision-making skills. The authors presented a clinical case study to a group of novice, proficient, and expert nurses, asking them to describe the case and present an intervention and rationale. The expert nurses were able to immediately collect significant data and draw conclusions based from the case study (Levett-Jones et al., 2010). Expert nurses are able to perform these tasks because of their knowledge, skill, and experience (Gardner, 2012). However, the novice nurses were unable to collect significant data and draw appropriate conclusions from the case study. The authors concluded that novice nurses need additional guidance and teaching in areas of assessment, data collection, and intervention (Levett-Jones et al, 2010). Kowitlawakul (2013) recorded stories of novice and expert nurses from different clinical settings. The novice nurses shared similar experiences such as inadequacy as it pertains to patient care and decision-making. They also expressed fear and felt they lacked the knowledge needed to make sound clinical judgments pertaining to their patients. The novice nurses expressed the need for additional teaching, in-services, and support within their practice area.

These findings are corroborated by a similar study by Hoffman et al. (2009), which compared types of cues used during decision-making by novice and expert nurses. This study found that expert nurses were able to collect twice as many cues compared to the novice nurses. In almost all activities, expert nurses were able to identify the patient condition and make sound clinical decisions. These studies are consistent with the Benner

model, which considers expert nurses to be effective nurses who no longer rely on guidelines and protocols to determine actions to take in clinical situations (Gardner, 2012).

However, an earlier study conducted by Christensen and Hewitt-Taylor (2006) raised concern about the expert nurses application of guidelines to providing care. These authors agreed that expert nursing is considered an important part of achieving high-quality patient care, but emphasized that more focus should be given to the expert nurses' application of using clinical guidelines and protocols in directing patient care. The authors explained that expert nurses could deviate from standards of care due to workplace perceptions that they are proficient and no longer have to seek guidelines or protocols when making decisions. According to Baumann (2006), the clinical practice of the expert nurse is not always easily defined or evaluated. The author recommended that additional studies be conducted in this area in order to better examine expert nurses' practice. These concerns indicate that expert nurses could benefit from further training, as well.

Walker (2008) discussed the need to occasionally reexamine the knowledge of the expert nurse. In this descriptive study, Walker examined the knowledge of the expert nurse by providing a 20-question quiz consisting of fundamental ICU scenarios to 30 intensive care unit (ICU) nurses. Of these 30 nurses, 15 were expert nurses and 15 were novice nurses. Results from the quiz revealed that 45% of the expert nurse scored within the same range as the novice nurses. Furthermore, five percent of the novice nurses scored better than the expert nurses. These results showed a strong correlation between

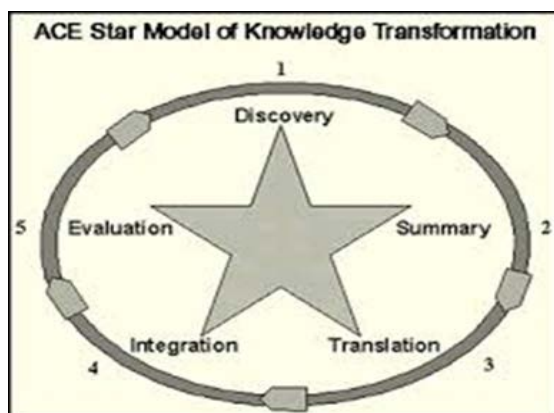
current education and practice. Although expert nurses are generally knowledgeable in their area, it remains important to reevaluate the knowledge and provide current evidence based practice guidelines to the expert nurse. Walker (2008) is one of several studies that show that although expert nurses are proactive in collecting relevant data and anticipating problems and interventions that may help save the lives of their patients, their knowledge and skills should still be examined routinely.

Cohain (2012) explored the impact of protocols, algorithms, and education provided to staff nurses on postpartum hemorrhage in two main hospitals in a rural area. Hospital 1 was provided with educational material including algorithms for the staff nurse while Hospital 2 was not provided with this educational material. The study revealed that nurses in Hospital 1 responded appropriately to postpartum hemorrhage 78.2% more of the time than in Hospital 2. This study indicated that the use of standardized protocols led to better patient outcomes because midwives were called to the bedside more often as needed to provide appropriate medical care.

### **Conceptual Models and Theoretical Frameworks**

Since its development, evidence-based practice models (EBPM) have been used to guide nurses with providing the best practices based on evidence from recent published work of peers and colleagues. Implementing EBPM ensures that practitioners of all ranges have the same information and intervention in an organized approach (Farrelly, 2012). Knowledge and awareness were the concepts that guided practice change. The conceptual model used to guide this EBP was the Academic Center for Evidence Based Practice (ACE) Star Model due to its focus on knowledge. The ACE Star Model revolves

on five major stages of knowledge transformation: (1) discovery research, (2) evidence summary, (3) translation to guidelines, (4) practice integration, and (5) process outcome evaluation.

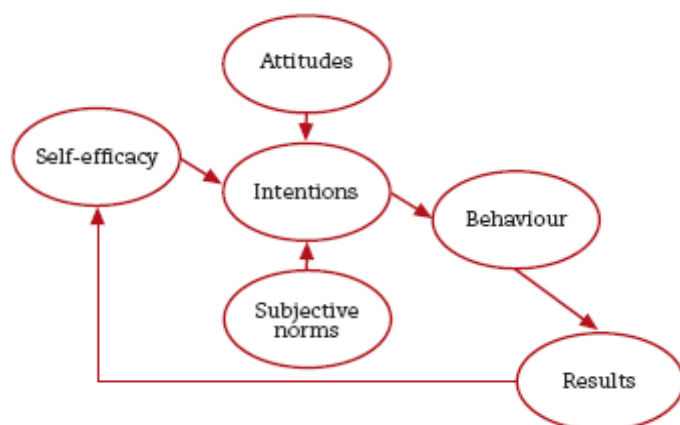


*Figure 1.* A graphical depiction of Stevens’s ACE Star Model of Knowledge Transformation. From “ACE Star Model of EBP: Knowledge Transformation” by K.R. Stevens, 2012. Academic Center for Evidence-Based Practice. The University of Texas Health Science Center San Antonio. Reproduced with permission.

This model is based on two essential fundamentals important to the nursing profession: (1) bridging research into practice, and (2) converting knowledge into practice. These fundamentals are used to support nursing standards and evidence-based practice at The University of Texas Health Science Center at San Antonio. The ACE Star Model considers nursing practice a process composed of several components. Nursing education is ongoing. It can be formal or informal, ranging from basic education to advanced education. Education can take the form of conferences, workshops, seminars or school. Nursing research should be facilitated at all institutes. It is used to improve nursing practice, subsequently improving patient outcomes and patient safety (Stevens, 2004). The ACE star model supports this EBP because of its use of knowledge as the foundation of its model. The ACE Star Model provides a framework for systematically

putting evidence-based practices into use (Stevens, 2004). The EBP project focuses on the education and knowledge of a particular group of nurses in order to improve patient outcomes in their environment (Pape, 2003).

The theoretical framework that guided this EBP was Bandura's Social Learning Theory (also known as the Self-Efficacy Theory). This theory was chosen because of its focus on observing and modeling behaviors, attitudes, and emotional reactions of others (Bandura, 1997). The principle that correlates to the EBP is the principle that individuals are more likely to accept a demonstrated behavior that results in outcomes the individual values (Bandura, 1997).



*Figure. 2.* A graphical depiction of Bandura's self-efficacy theory.

Bandura's principle on social learning was applied in a study conducted by Bahn (2001). In this study, researchers choose 65 nurses from four suburban Atlanta hospitals. Nurses were asked to watch a simulation video on management of postpartum hemorrhage created by AWHONN. The video demonstrated the proper techniques of

fundal massage. After the video, nurses were asked to take a 10-question test. The test examined the nurses' attitudes and beliefs on modeled behavior. Ninety-five percent of the nurses revealed they would model behavior that improved patient outcome.

According to Bandura (1997) learning is achieved when the modeled behavior is retained by attention, memory and motivation.

### **Summary**

The literature review was consistent with the idea that educating healthcare providers increases their knowledge on management of postpartum hemorrhage. An important advantage of this finding is the clear support that the lack of education provided to nurses has an impact on the care they provide. The Bandura's Social Learning Theory was used to integrate the educational module with the clinical problem postpartum hemorrhage. Bandura's Social Learning Theory encompasses attention, memory and motivation, which are all needed to create a learning environment for the staff nurses. The ACE Model guided the transformation of postpartum hemorrhage knowledge into practice by increasing the knowledge and awareness of staff nurses. Both the ACE model and Bandura Social Learning Theory supports the development of the EBP.

### **Section 3: Approach**

#### **Introduction**

Implementing a change in clinical practice requires planning. The implementation of change in the practice area tends to be gradual and involve several components. At the time of the study, nurses at ABC Medical Facility were not required to take any additional training or obtain additional education on postpartum hemorrhage besides the learning that they received from their preceptors when initially hired. As a result, the training provided by this project was a change in practice for this unit. According to Kreis and Christensen (2013), an initial hurdle to change is establishing awareness of the need for change and identifying variations to current practices. Establishing a clear plan for the change process decreases this hurdle and decreases anxiety associated with change.

Nurses provide care that is frequently challenging, especially in changing environments. Most hospitals lack nurse residency programs, and those that do utilize these programs generally target the Neonatal Intensive Care Unit (NICU) and specialty nursing areas such as Labor and Delivery (Van De Mortel & Bird, 2010). Compared with these other areas that receive extensive training, postpartum nurses are at a disadvantage. They do not receive the same level of training for their positions. These groups of nurses are generally comprised of new graduates and seasoned nurses. Unfortunately, seasoned nurses' practices are not always based on current evidence, and novice nurses typically get less than 6 weeks of maternal child health education in school and a week of this might be spent on the postpartum unit (Van De Mortel & Bird, 2010). This patient population is increasingly sick and many times experiences high-risk



pregnancies, which place the women at risk for comorbidities and complications post-delivery (Kongnyuy & van den Broek, 2009).

Maternal newborn health is an area of nursing that has been neglected for several years (Association of Women's Health, Obstetric and Neonatal Nurses, 2013). A study conducted by Dudasm and Pedaline (2012) discussed challenges that healthcare workers face when caring for the high-risk pregnant patient. Some of the challenges that these workers face include staff shortages, particularly nursing shortages. As healthcare costs rise, increasing patient nurse ratio is often an immediate approach taken by decision makers in health organizations. Meeting patient expectations is often a challenge that healthcare workers face. Nurses are in the frontline dealing with patients' demands and requests, and these nurses find themselves pulled in several directions and often attempting to decide what to tackle first. The lack of mentoring also adds to a challenge. New nurses often feel insecure in their role and, because of lack of adequate staffing, each nurse is trying their best to handle a massive patient load. This puts a strain on seasoned nurses, and an even greater one on newer nurses. Often, seasoned nurses are not available to assist newer nurses, which leads to newer nurses doubting their decisions, making mistakes, and leaving the organization, which then leads to further decreases in staffing. These challenges make it difficult for nurses to best care for their patients. The rapid and ongoing changes and challenges in nursing profession suggest that implementing evidence-based practice is necessary in order to ensure patient safety and positive outcomes (Coopey & Nix, 2006). Evidence-based practice allows nurses' access to the most current research and best practices that they can utilize in their daily work.

### **Project Design/Methods**

This project utilizes a quality improvement approach to create an educational module. While considering the process to use in completing this research project, the quality improvement approach fit better with the purpose and situation that I identified. According to Stausmire (2014), the main components of the quality improvement approach include 1) applying already existing knowledge to a situation, instead of trying to discover new information, 2) addressing an issue or instituting a change to a system within a specific setting, and 3) continuing assessment of results and adjusting the project as the results identify a need. The quality improvement approach also provides a more flexible structure than a formal research study requires. There are usually less risks, because this approach does not require specific human subjects. The quality improvement approach also adjusts as the results are acquired, whereas a formal research study can be invalidated if the methods are changed within the course of the study.

Quality improvement initiatives frequently bring about change in healthcare facilities, and even the healthcare system as a whole. Hospitals and healthcare organizations utilize quality improvement strategies to bring change to their organization. Quality improvement initiatives do not focus only on the data and the results, but they also look at the processes that are in place and how they could be changed or improved. This approach allows organizations to look closely at the current state of a specific area within the organization, identify any needs or problems, and begin initiatives to bring about change. As healthcare organizations implement these initiatives, the goal is to improve their organization and more effectively treat their patients.

Incorporating a quality improvement approach allowed me to look at specific outcomes I wanted for the project. I was also able to identify an approach to track my progress toward those outcomes and recognize what changes needed to be made to see an improvement. With the quality improvement approach, I had the flexibility to adjust my methodology as the results warranted. This freedom made my project more beneficial to ABC Medical Facility, their staff, and patients.

This educational module was aligned with Stage 3 of the ACE Star Model, which focuses on providing useful, relevant, evidence-based compendium to clinicians in order to provide the best care standard. The resulting educational module included educational material on postpartum hemorrhage from AWHONN, the national organization that defines and provides standards of nursing care for nurses caring for women and newborns. The content of the educational module received specific organizational approval from the Director of Maternal Child unit, an appointed obstetrician, and the Chief Nursing Officer (CNO). The primary goal of the educational module was to educate nurses on management of postpartum hemorrhage. The secondary goal was that participants would reproduce the information they learned from the presentation while caring for their patients.

Utilizing Bandura's social learning theory as a guide to develop the implementation phase, the project focused on attention, retention, reproduction, and motivation of the potential participants. Bandura (1997) stated that in order for effective learning to occur, the learner must pay attention, retain the information, be able to

reproduce the learned information and be motivated. This should occur in different areas of the presentation. As a result, the module was divided into three sections.

The first section of this module was a pretest that measured the learners' knowledge prior to implementation of the module, as suggested by Jeffries (2005). The second section of the module was the core material that was presented to the staff. The material included signs and symptoms of postpartum hemorrhage, risk factors of postpartum hemorrhage, management of postpartum hemorrhage, nurses' role in postpartum hemorrhage, and resources for postpartum hemorrhage. The goal was that the learner paid attention. The third section was a posttest. This measured the learners' knowledge after implementation of the educational module (Jeffries, 2005) and coincided with Bandura's retention phase.

Module content was presented to the selected postpartum nurses during a nine-hour workshop. Workshops were offered on Monday, Tuesday, and Wednesday of each week for 5 weeks. The content was presented in the English language. The material was adopted from AWHONN, which is written on a college freshman level. The workshop was held in the postpartum unit conference room at the study site, a room that has a maximum capacity of 35 people. Nurses received a pretest immediately upon entering the classroom. The pretest was followed by presentation of the content. The posttest was administered immediately after the presentation of the content, along with an evaluation form. The pretest and posttest were completed in an area that ensures confidentiality.

### **Population and Sampling**

The target population for this EBP was postpartum staff nurses. Of 150 postpartum nurses that expressed interest in the project, 80 nurses completed the pretest, educational module, and post-test. These nurses had varying levels of education and years of experience. Participation was voluntary. New graduates and nurses with less than five years of experience were considered novice nurses and were encouraged to participate. Expert nurses who participated had a minimum of five years' tenure. The maternal child clinical educator was invited to participate in the project. This was important to ABC Medical Facility because of the clinical educator's involvement in educating the staff. According to Jeffries (2005), the sample should include representatives from all target groups to improve validity during evaluation.

### **Data Collection**

The need for this project was identified by the initial data collected from the hospital's quality department (see Appendix A). Using existing data provided by the ABC Medical Facility, I completed a secondary data analysis.. According to the ABC Medical Facility data, 369 patients experienced postpartum hemorrhage from January 2012 to January 2013 (see Appendix A). Analysis of these data stressed the need for implementing a project that would focus on decreasing postpartum hemorrhage. Since these cases of postpartum hemorrhage involved the mothers of newborn babies, it was especially important to reduce this number so these newborns could more quickly receive care from their mothers.

The pretests and posttests were collected at the end of each workshop session and placed in a secure location with limited access. Results from these tests were into an excel spreadsheet and stored on a secure computer. Participants were assigned an identifying number recorded on the pretest and posttest. Identification numbers were unique to the individual completing the tests, and no actual names were used. As the reviewer, I was the only person with access to these files. I analyzed the data, and the results were provided to the Director of Maternal-Child department and the CNO.

Test results were recorded on an Excel spreadsheet using the codes K for knowledge and A for awareness. The pretest was coded 1b (b for before) and the posttest was coded 1a (a for after). An example of the coding was as follows: the knowledge pretest was coded K1b and posttest was coded K1a. When all the results were recorded, I found the mean score for K1b and the mean score for K1a. These means were then used for data analysis.

### **Data Analysis**

Data collected from the pretests and posttests were used to determine if there was an increase in nurses' knowledge and awareness (Figueras et al., 2008). The knowledge and awareness pretest and posttest contained the same questions. Knowledge and awareness of the staff nurses were measured by comparing the group mean of the posttest scores to the group mean of the pretest scores.

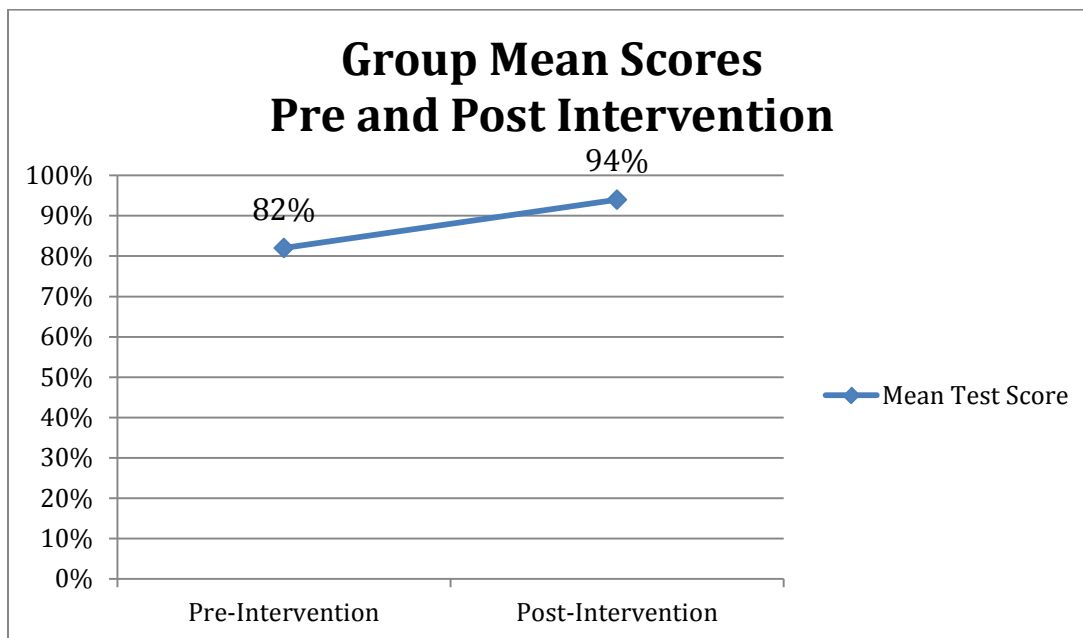


Table 1. *Group Mean Scores Pre and Post Intervention.*

The pretest and posttest consisted of 15 knowledge-based questions on postpartum hemorrhage. The pretest and posttest also included 5 questions on nurses' awareness of their role on PPH. Descriptive statistics were used to analyze the results.

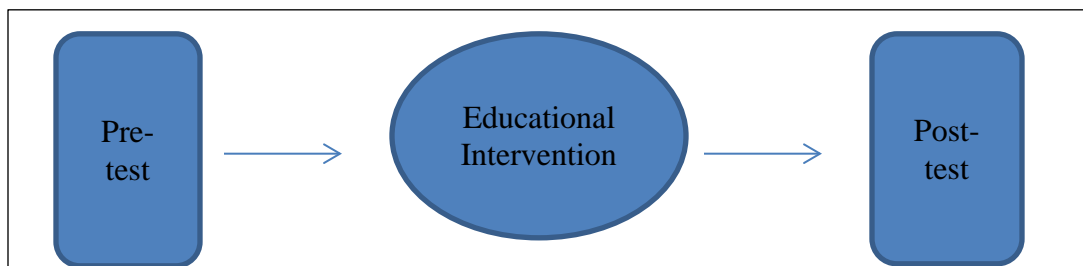


Figure 2. A flowchart showing the implementation of steps of evidence-based practice change.

### **Project Evaluation Plan**

The project objectives were to develop a postpartum hemorrhage module to serve as a future educational resource, teach postpartum nurses early recognition of postpartum hemorrhage, teach postpartum nurses the initial steps of managing postpartum hemorrhage, and evaluate nurses' recognition and readiness to implement postpartum hemorrhage response after completion of the module. To create the evidence-based project, the postpartum hemorrhage module was developed using AWHONN guidelines and reviewed by a panel of experts for content validity. Workshops were instituted using the postpartum hemorrhage module. Participants were asked to complete a pretest, posttest and evaluation, which were all used to determine effectiveness of the workshop.

Immediate project effectiveness was evaluated by comparing mean aggregate pretest and posttest scores. Establishing baseline knowledge score of participants prior the educational module supported effectiveness of PPH module when improved test scores followed the workshop. According to Bandura's social learning theory, establishing baseline information assisted in determining the learned behavior (Bandura, 1997). When there was a positive change between the means of the pretests and posttests, learning had occurred.

The potential implementation of this project was discussed and agreed upon by the ABC Medical Facility stakeholders. The educational module was left with the quality department at ABC Medical Facility to utilize for educational purposes as requested by their stakeholders. A recommendation to collect data on every PPH experience over a 24-month period was made to the Quality department of the ABC Medical Facility. Those



data should be compared to the number of postpartum hemorrhages experienced before implementation of the EBP. However, this was only a recommendation and left to the ABC Medical Facility to decide.

### **Summary**

The primary objective of this evidence-based project was to increase health care provider knowledge and clinical decision-making related to postpartum hemorrhage. Inconsistencies in practice often led to poor outcomes (CDC, 2013). The educational module provided a reference point and framework for postpartum nurses caring for patients experiencing postpartum hemorrhage. The ultimate purpose of the implementation of this EBP was to improve patient outcomes now and in the future.

## **Section 4: Discussion and Implications**

### **Introduction**

Postpartum hemorrhage is a serious complication after childbirth, especially when clinical signs are detected at a later stage. There can be increased risk of complications that can lead to other health issues or even death. According to Smith and Brennan (2014), the rate of PPH increased from 1.4% to 4.9% between the years of 1999 and 2009. Currently in the United States, 7 to 10 women per 100,000 live births suffer pregnancy-related maternal mortality with 8% directly related to PPH. The best patient outcome occurs when healthcare providers notice the subtle clinical changes in a patient that indicate the condition. Noticing these changes is the first step to better patient outcome; being able to implement the care required is the next step. When healthcare providers are able to quickly recognize these changes, patients are more likely to receive the appropriate care and more quickly recover from their condition. This project provides nurses with the educational tools needed to provide appropriate care for patients during a postpartum hemorrhage.

This project was designed to develop an educational module on postpartum hemorrhage (PPH) and to increase the staff nurses' knowledge and awareness of postpartum hemorrhage. The project consisted of a pretest and a posttest, along with a PPH educational module. The analysis of the data considered the difference between the mean pretest score, which was given before the educational module, and the mean posttest score, given after the module. The higher mean score on the posttest demonstrated that there was a gain in participant knowledge on postpartum hemorrhage.

This section provides an evaluation of the project, outcomes, findings, and the level of effectiveness that the module had with the participants.

### **Summary and Evaluation of Findings**

One hundred and fifty postpartum nurses responded to the invitation to participate in the research project. Of these 150 nurses, 80 participated in the entire project. All participants were postpartum nurses at the study site; 3% of the participants also worked in other facilities as postpartum nurses. The educational levels of the nurses varied from licensed vocational nurses to master's degree holders. Table 1 provides descriptive statistics on the participating nurses' levels of education.

*Table 2. Participants' Highest Levels of Education*

Nurses Education Level	N	%
License Vocational Nurse	3	4
Associate Degree Nursing	33	41
Bachelors of Science in Nursing	42	53
Masters of Science in Nursing	2	3

The overall goal of this evidence-based project was to increase bedside nurses' knowledge and awareness of postpartum hemorrhage. The intended outcome was an increase in knowledge and awareness that would result in fewer code obstetrics (OB) calls to physicians and decreased complications related to postpartum hemorrhage. In order to promote this outcome, educational workshops were held in the study site's postpartum education room. Workshops were offered three times a week for five weeks, and had a length of nine hours each (see Appendix C). ABC Medical Facility information

technology (IT) department provided the projector and screen used. The facility felt it was important that I utilize their equipment in order to comply with policy and procedures. There was an average of 15 participants per class, although the room used had a capacity of 35. Nurses were informed of the educational project during staff meetings, and through fliers placed in the unit three weeks prior to the start of the workshop. The fliers included the dates and times of the workshop. Workshops began the first week of December and continued through the week of February 6, excluding the week of December 22–29.

I conducted each workshop. I first asked the participants to complete a pretest of their knowledge and awareness of postpartum hemorrhage. After the pretest was completed, participants received educational material on PPH in the form of a module. The module was developed using AWOHNN postpartum hemorrhage guidelines. A panel of experts reviewed the module for content validity. The panel consisted of the study site's Director of Education, Director of Maternal Child Nursing, Director of Labor and Delivery, Postpartum Nurse Manager, Maternal Child Education Coordinator, and a board member of AWOHNN, who was also a staff physician at the facility. After I completed the education presentation, I gave participants an opportunity to ask questions, then asked them to complete a posttest on their knowledge and awareness of postpartum hemorrhage.

The pretest and posttest each contained the same 20 multiple-choice questions. Content in the pretest and posttest was covered in the educational module. The panel of experts reviewed the questions for content validity. I entered all data from the

demographic questionnaire, pre/posttest, and workshop evaluations in an Excel spreadsheet and stored electronically. After collection, I evaluated and analyzed the data. Due to facility IRB guidelines, all responses were collected anonymously, and scores were compared and aggregated in the analysis.

The knowledge and awareness of participants were measured before and after the module presentation. Knowledge and awareness increase was evident by any increase in the group's mean posttest scores when compared with the group's mean pretest scores. The highest possible score on the pretest and posttest was 100 percent. There were two nurses who scored 100 percent on the pretest; both of them had 15 years experience or more as postpartum nurses. The group's mean score on the pretest was 82%. The group's mean scores on the posttest was 94%. This represents a 12% increase in the participants' knowledge post-intervention. Continuing assessment of the effectiveness of this educational module intervention will occur as the facility measures the number of code OB that are implemented by staff nurses.

### **Implications for Nursing Practice**

This evidence-based project was developed using the PICOT (Patient population, Intervention or Issue of interest, Comparison intervention or group, Outcome, and Time frame) format, which provides an organized approach to formulate a research question. As time was not measured during this research, the PICOT question was changed to reflect this. The PICO question was "Would an evidence-based educational postpartum hemorrhage module increase nurses knowledge and attitude for recognizing and managing postpartum hemorrhage?" Results of the participants' scores on the module

post-tests were favorable. According to these findings, an evidence-based educational module on postpartum hemorrhage does increase nurses' knowledge about PPH and nurses' awareness on their role on management of postpartum hemorrhage.

Bedside nurses are indispensable. These groups of nurses play a key role in the management of postpartum hemorrhage. They are often the first to arrive at the patient's bedside during crisis and emergent situations. According to Miller (2014), the best patient outcomes occur when guidelines, resources and education are provided to healthcare providers. Equipping bedside nurses with the knowledge and resources needed to make appropriate decision during emergent situation will lead to better patient outcomes. This evidence-based project provided nurses with clear role expectations and was designed to improve patient outcomes in the future and to decrease complications and mortality related to postpartum hemorrhage.

### **Project Strengths and Limitations**

This EBP had many strengths. ABC Medical Facility was made aware of a need in the care of their patients. ABC Medical Facility was able to recognize that the current treatment of postpartum hemorrhage might not be as effective as it could be. The postpartum nurses were educated about PPH and how to best care for their patients. ABC Medical Facility also received an educational module that can be utilized to educate nurses in the future. Most importantly, patients at ABC Medical Facility are more likely to receive appropriate care if they experience postpartum hemorrhage.

Limitations for this project were found in multiple areas. Patient outcome, such as code OB calls, was not immediately measured, due to stakeholders' request that this area

not be examined at this time. ABC Medical Facility planned to examine the effect of the intervention at a later date by gathering data on the number of postpartum hemorrhages reported after implementation of the project. An additional limitation was that participants were recruited from only one unit in the facility. Not all staff nurses were required to attend the educational workshops. While the information was only presented to postpartum nurses, it could also benefit labor and delivery nurses, as well as nurses who float to the postpartum unit. Finally, the stakeholders at ABC strongly encouraged novice nurses to attend, but they did not feel as strongly that experienced nurses would benefit from the information presented. Since experienced nurses sometimes rely on their own experiences and not necessarily evidenced-based information (Gardner, 2012), the information on PPH was such that these more experienced nurses could have benefitted as well.

### **Analysis of Self**

The Doctor of Nursing Practice program has given me an opportunity to focus on the overall healthcare outcomes from a unique perspective. Nurses are responsible for patient care and must focus on the appropriate plan of care (Bland, 2014). Nursing is viewed as profession of caregivers, teachers, and transformational leaders (Spurgeon, 2013). I have grown as an nurse and a nursing leader. During this course of study, I have come to more fully understand the diverse roles of nursing leaders and the many skills and expertise they must possess. This has greatly changed my understanding of my role within the healthcare setting from what I thought when I began this program.

### **As Scholar**

Scholarly growth is imperative for advance practice nursing. DNP students are expected to demonstrate increasing knowledge as it relates to research and evidence-based practice (Kendall-Gallagher & Breslin, 2013). According to Loomis, Willard and Cohen (2007), nurses who engage in continuing learning and education tend to have a higher level of professional commitment. This process has increased my knowledge and awareness in research, concepts of health management, leadership roles, and the importance of professional growth and fostering relationships. It is important to be able to maintain a professional relationship with colleagues. I have learned that interactions are vital to a nursing leadership relationship. I look forward to inspiring future students.

Christenbery (2011) states that self-directedness is an attribute, which has been considered one of the key traits of adult learning. While the journey through this program has been challenging at times and I have had to push myself to finish, reaching the goal at the end has made the hard work worth it. I certainly recognize that this journey has contributed to my scholarly growth by providing me competence, confidence, and leadership skills. These skills are ones that I use in my current role and will utilize in future roles.

### **As Practitioner**

The phrase ‘sink or swim’ pretty much sums up my time during this project. As practitioners, we often feel this way. It is overwhelming to feel that you are expected to know how to solve all issues you might encounter. As a nurse practitioner, I have four years of general nursing education plus an additional three years at the master’s level,



which included additional didactic and clinical training. As a doctoral student, I had an additional three years of didactic and clinical training to prepare for the DNP role. I know that the learning curve will eventually level as I begin to feel more confident in my career. My practicum experience has been at times a challenging process and, at other times, exhausting. However, I feel that it has increased my confidence and competence in the area of nursing management and leadership.

My personal expectations and school objectives were met. I believe that one of the most important attributes of a leader is knowledge. During my clinical practicum I was instrumental in achieving departmental goals of the ABC Medical Facility. Anonson et al. (2014) discussed the parts of being an effective leader. These roles included choosing individuals to work with them on their team, identifying the purpose and objectives for their team, effectively communicating those objectives to others on the team, and helping the team members develop the skills necessary to accomplish their purpose. I gained self-discovery, self-improvement, and self-confidence. It also increased my communication and leadership skills. I developed a better understanding of decision-making, analytical thinking and reasoning, career planning, personal and professional accountability, and financial management. The development of nurse leaders is vital to healthcare (Bernard, 2014). This journey definitely prepared me for my future in nursing.

### **As Project Developer**

Working on this project provided a great deal of insight into the machinations of a healthcare organization. I learned about some of the formalities that this organization has in place for training their staff. I also developed relationships with individuals that I did

not work with on a daily basis. These provided me with chances to develop my leadership capabilities, as well as my presentation skills. The project helped me clearly see the many steps involved when developing educational training for the staff at ABC Medical Facility.

Meeting with stakeholders at ABC Medical Facility was a great experience. I had the opportunity to witness firsthand the impact that stakeholders have on an organization. I quickly learned the importance of managing stakeholders' expectations. As project developer, I understood that stakeholders had an impact on my project. Their influence and direction guided many of the decisions I made. In particular, they assisted me in the identification of my focus of the nurse's role during postpartum hemorrhage.

Another important aspect of the developing this project was the detail that went into the IRB process. ABC Medical Facility decided I would utilize their facility's IRB. Submitting my project for IRB approval was not as easy as I expected. The process was much more involved than I thought it would be. I did not previously know that I would have to attend the IRB board meeting and present my intent to the board.

As a developer, I attended several organizations meetings led by my mentor and preceptor. These meetings allowed me to discuss my project with pivotal members of ABC Medical Facility, such as the Director of Maternal Child unit and the CNO. While these were individuals within the organization of whom I was previously aware, they were not people that I interacted with on a daily basis. These meetings gave me the opportunity to interact with others and become familiar with jobs that were outside of my

frame of reference. I felt that discussing my project with people in these positions provided me with leadership opportunities that I had not previously experienced.

### **Postpartum Hemorrhage and Future Professional Development**

There is a great deal of work that remains to be done in the area of postpartum hemorrhage. According to AWHONN, a woman nearly dies of pregnancy-related complications every 10 minutes in the United States. Postpartum hemorrhage remains the leading cause of these morbidity and mortality in the area of women's health with approximately two to three deaths per day. My hope is that the implementation of this EBP at the ABC Medical Facility will have a positive impact on women's health by decreasing complications from postpartum hemorrhage and decreasing the rate of code OB. It is important that staff nurses participate in postpartum hemorrhage Quality Improvement (QI) collaborative programs. In addition, hospitals should develop postpartum hemorrhage projects designed to increase awareness associated of postpartum hemorrhage mortality and morbidity by improving nurses' recognition of, readiness for, and response to a postpartum hemorrhage event. This can be accomplished by developing multidisciplinary QI expert panels composed of physicians, nurses, and managers for training and direction (Shafer & Gillaspie Aziz, 2013).

### **Summary and Conclusions**

This chapter discusses the implications of the project to nursing practice, professional growth, health policy, and quality improvement. Though some limitations existed, there were several identified strengths. Providing staff nurses with an educational program on the importance of postpartum hemorrhage clearly impacted the level of

knowledge. There were significant gains in their knowledge of postpartum hemorrhage and the appropriate course of treatment, as demonstrated by their performances on the pretests and posttests. Future projects on this topic should focus on improving efforts at educating staff nurses in order to increase their knowledge and decrease complications related to postpartum hemorrhage. This project demonstrated the need for hospital-based policy and protocol addressing postpartum hemorrhage education to staff nurses. AWHONN is at the forefront in creating policies and guidelines to assist clinicians in addressing postpartum hemorrhage. The goal of this evidence-based project was to increase the bedside staff nurses' knowledge and awareness of postpartum hemorrhage and their role during this event. Increased knowledge and awareness will hopefully result in decreased morbidity and mortality.

### **Section 5: Scholarly Product for Dissemination**

An important component to this project is the dissemination of a scholarly product. According to Delost and Nadder (2014), effective dissemination of literary products relies on the use of various networks such as publications, reports, websites, meetings, person-to-person communications, conferences, formal collaborations, workshops, training, academic journals and other electronic communications.

Dissemination of a product should construct new insight and knowledge regarding the topic. I hope to publish my work in any of the following journals: *AWHONN*, *Journal of Advanced Nursing*, *Nurse Educator*, *Journal for Nurse Practitioners*, *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *Journal of Perinatal Neonatal & Nursing*, and *Nursing in Practice*. These journals were chosen due to their open-access publishing, which allows users free access to articles without having to purchase a subscription. I feel that preventing postpartum hemorrhage is a critical issue around the world, and I want my work to be accessible to medical facilities that might not be able to afford the subscription costs of other publications.

### **Conclusion**

The goal of evidence-based practice is to improve patient outcomes and quality of care. The goal of the project was to increase staff nurse knowledge and awareness on postpartum hemorrhage. Several conclusions emerged from this project. The findings demonstrated a need for educational programs for staff nurses and the need for hospitals to develop standards for professional practice related to decreasing postpartum hemorrhage. The project also showed that advanced practice nurses are instrumental in

implementing evidence-based practice changes in the clinical setting and that these changes can impact healthcare policies around the world. Education and support are critical to any improvements that lead to positive patient outcomes.

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## Appendix A: The Premise Hospital Postpartum Hemorrhage

1<sup>ST</sup> Quarter 2012 thru 1<sup>ST</sup> Quarter 2013

<b>C/S PPH</b>	<b>1<sup>ST</sup> QTR 2012</b>	<b>2<sup>ND</sup> QTR 2012</b>	<b>3<sup>RD</sup> QTR 2012</b>	<b>4<sup>TH</sup> QTR 2012</b>	<b>1<sup>ST</sup> QTR 2013</b>	<b>TOTAL</b>
Total # of Post Partum Hemorrhages	28	27	25	21	20	121
# of Post Partum Hemorrhages with Blood Transfusions	8	7	9	7	6	37

<b>Vaginal PPH</b>	<b>1<sup>ST</sup> QTR 2012</b>	<b>2<sup>ND</sup> QTR 2012</b>	<b>3<sup>RD</sup> QTR 2012</b>	<b>4<sup>TH</sup> QTR 2012</b>	<b>1<sup>ST</sup> QTR 2013</b>	<b>TOTAL</b>
Total # of Post Partum Hemorrhages	37	37	36	34	32	176
# of Post Partum Hemorrhages with Blood Transfusions	10	7	8	7	3	35



## Appendix B: Permission Letter to use ACE Model

RE: Permission to use ACE model

Academic Center for Evidenced- Based Nursing (acestar@uthscsa.edu) 12/02/13

To: Stella Motanya

Dear Ms. Motanya,

Dr. Stevens has reviewed your request, and you may use it under the fair-use rule, but you will need to give written credit.

However, if you are re-publishing the copyrighted material, specific permission is required.

Dr. Stevens is the copyright holder and grants you permission to include the model image and a paraphrased description of the model. The image must be accompanied with this phrase: "Copyrighted material (Stevens, 2012). Reproduced with expressed permission" and the bibliographic reference included: Stevens, K. R. (2012). ACE Star Model of EBP: Knowledge Transformation. Academic Center for Evidence-Based Practice. The University of Texas Health Science Center San Antonio.

Another resource is the Essential EBP Competencies booklet that was developed through ACE...the description of the development is found at [http://www.acestar.uthscsa.edu/ebp\\_compet.asp](http://www.acestar.uthscsa.edu/ebp_compet.asp) . If you're interested in ordering an Essential Competencies booklet, just complete an Essential Competencies order form and mail it back with your \$30 check.

A number of clinical agencies and academic institutions have benefitted from using our EBP readiness survey, called the ACE EBP – Readiness Inventory (ACE-ERI). The ACE-ERI is a self-report instrument based on national consensus EBP competencies (Stevens, 2005 & 2009). The survey is administered electronically and can be used to assesses EBP Readiness in both clinician and student populations. If you are interested in more information about this instrument, contact Dr. Frank Puga, [pugaf@uthscsa.edu](mailto:pugaf@uthscsa.edu) , 210 567-5846.

On another note, our Center is also involved with the Improvement Science Research Network (ISRN). The ISRN's work is to advance the emerging field of improvement science. Our mission is to advance the scientific foundation for quality improvement, safety and efficiency through transdisciplinary research addressing healthcare systems, patient centeredness, and integration of evidence into practice. It provides a laboratory to

greatly enhance feasibility and generalizability of NIH ( National Institutes of Health) proposals in improvement science. Additionally, it provides an infrastructure for a national program of research to test quality improvement interventions. The ISRN is comprised of national members, the Network Coordinating Center and a Steering Council. Research Priorities were adopted for the ISRN as the best thinking to date about the direction that should be taken in improvement science. Please visit our ISRN website at [www.ISRN.net](http://www.ISRN.net) for further details.

You may also find it beneficial to attend the 2014 Summer Institutes on Evidence-Based Quality Improvement, August 4-8, 2014. Please visit our ACE Star website [www.acestar.uthscsa.edu](http://www.acestar.uthscsa.edu) or [www.ISRN.net](http://www.ISRN.net) for additional information about the exciting programs we'll be offering to improve care and patient outcomes.

We hope that you can join us the week of August 4-8, in San Antonio, Texas!

Joan Feller

Administrative Assistant Associate

Academic Center for Evidence-Based Practice (ACE)

UT Health Science Center San Antonio

7703 Floyd Curl Drive, MC 7949

San Antonio, TX 78229-3900

Phone: (210) 567-1480

***Join Us at the 2014 SUMMER INSTITUTES ON QUALITY IMPROVEMENT***

***August 4-8, 2014***

### Appendix C: Agenda Post-Partum Hemorrhage Module

8:00am- 8:30am Welcome, Introduction, Orientation to Materials

8:30am- 9:00am Pretest

9:00am- 9:45am Causes and Prevention of Postpartum Hemorrhage

9:45am -10:30am Review of Uterotonic Drugs

10:30am -10:45am Break

10:45am -11:30am Current Challenges and Solutions

11:30am -12:15pm Quantifications of Blood Loss

12:15pm -12:45pm Lunch

12:45pm- 1:30pm Role of the Bedside Nurse

1:30pm- 2:15pm Putting it all Together

2:15pm- 3:00pm Break

3:00pm- 3:30pm Group Activity

3:30pm- 4:00pm Posttest

4:00pm- 4:30pm Questions and Answers, Wrap-up

### Appendix D: Postpartum Hemorrhage In-service Evaluation

Evaluation of presentation: (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree)

#### I. In-service Review

This content was appropriate to the purpose and objectives	1	2	3	4
The content added to my professional knowledge	1	2	3	4
The teaching method and subject materials was effective	1	2	3	4
I plan to implement the information to my practice	1	2	3	4
The project was presented in a fair and unbiased manner	1	2	3	4
The in-service environment made it easy to learn	1	2	3	4
There was sufficient time for questions and breaks	1	2	3	4
I recommend all postpartum staff nurses take this in-service	1	2	3	4

#### II. Content Evaluation

What did you like best about the in-service?

What did you like least about the in-service?

List two most things that you learned today that will enhance your practice.

Name two things you learned today that you would utilize during your next shift.

How would you improve this in-service?

Additional comments?

Thank you for taking the time to fill this out. Your comments are greatly appreciated!

## Appendix E: Invitation to Participate in Research Project

## Invitation to Participate in Research Project

\_\_\_\_\_, 2014

Dear Potential Participant,

My name is Stella Motanya and I am a master's prepared nurse currently pursuing a doctoral degree at Walden University, Minneapolis, Minnesota. I have chosen to provide a postpartum hemorrhage education module to increase the nurse's knowledge and awareness on his/her role on the management of postpartum hemorrhage. This module will be conducted as an educational in-service that will last approximately 8 hours. The in-service will include a pretest, educational lecture along with activities followed by a posttest to evaluate the outcomes of the intervention.

This project poses no risk to you. I will ask you to complete a demographic form before the educational intervention. A pretest will be given before the educational session and a posttest after the intervention. These tests will be confidential, and no personal identifiable information will be requested. There will be no means to link answers to you as an individual. The pre and posttest are for my use only and all documents will be shredded once the data is evaluated. There will be no penalty for not participating. I am asking you to consider participating in this project.

If you are will to participate, please read and sign the attached consent form and return to the survey box located on the first floor nursing office. If you have any questions or concerns, the best way to reach me is by phone at XXX XXX XXXX.

Thank you for your time and consideration.

Sincerely,

Stella Motanya- Project Reviewer

## Appendix F: Demographic Form

Participant ID # \_\_\_\_\_

Number of years as a nurse \_\_\_\_\_

Number of years as a postpartum nurse \_\_\_\_\_

## Contact Information

Phone \_\_\_\_\_

Email \_\_\_\_\_

Please check the appropriate box.

## Highest Education Level:

- License Vocational Nurse (LVN)
- Associate Degree Nursing (ADN)
- Bachelors of Science in Nursing (BSN)
- Masters of Science in Nursing (MSN)
- Other \_\_\_\_\_

## Appendix G: Consent Form

### **Consent Form**

You are invited to take part in a research study of an educational postpartum hemorrhage module. The researcher is inviting postpartum staff nurses to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher name Stella Motanya who is a doctoral student at Walden University. You may already know the researcher as a DNP Student or Family Nurse Practitioner, but this study is separate from that role.

### **Background Information:**

The purpose of this study is to implementing an evidenced based educational module on the nurse’s role on management of postpartum hemorrhage.

### **Procedures:**

If you agree to be in this study, you will be asked to:

- Attend an 8 hour workshop/in-service
- Take a 30 minute pretest
- Listen to 5 hours of lecture/teaching
- Take a 30 minute posttest
- Complete course evaluation 15 minutes

Here are some sample questions:

- What did you like best about the in-service?
- What did you like least about the in-service?
- List two most things that you learned today that will enhance your practice.

### **Voluntary Nature of the Study:**

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at The Woman’s Hospital of Texas will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

### **Risks and Benefits of Being in the Study:**

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as sitting in one area for long period of time. Being in this study would not pose risk to your safety or wellbeing.

The potential benefit of the study is to increase knowledge and awareness of postpartum hemorrhage and the nurse's role in the management of postpartum hemorrhage.

**Payment:**

There will be no payment for this study.

**Privacy:**

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by the researcher on a password-protected personal computer. The computer is stored at the researcher's home, which only the researcher will have access to. All paper data will be shredded once entered into personal computer. Upon completion of project the data will be transferred from the computer to a thumb drive and will be deleted from the computer. The thumb drive will be stored in a locked firebox for the required time frame. Data will be kept for a period of at least 5 years, as required by the university.

**Contacts and Questions:**

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone 832-265-7469 or email [stella.motanya@waldenu.edu](mailto:stella.motanya@waldenu.edu). If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210.

The researcher will give you a copy of this form to keep.

**Statement of Consent:**

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I understand that I am agreeing to the terms described above.

Printed Name of Participant

Date of consent

Participant's Signature

Researcher's Signature

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## Appendix H: Pre-Test/Post-Test

**Pre- Test/ Post-Test**

Participant ID # \_\_\_\_\_

Choose the best answer for each question

1. A nurse is preparing to perform a fundal assessment on a postpartum client. The initial nursing action in performing this assessment is which of the following?
  - a) Ask the client to turn on her side
  - b) Ask the client to lie flat on her back with the knees and legs flat and straight.
  - c) Ask the mother to urinate and empty her bladder
  - d) Massage the fundus gently before determining the level of the fundus.
  
2. When performing a postpartum assessment on a client, the nurse notes the presence of clots in the lochia. The nurse examines the clots and notes that they are larger than 1 cm. Which of the following nursing actions is most appropriate?
  - a) Document the findings
  - b) Notify the physician
  - c) Reassess the client in 2 hours
  - d) Encourage increased intake of fluids.
  
3. What is leading cause of maternal morbidity in the United States?
  - a) Miscarriages
  - b) Pregnancy
  - c) Postpartum hemorrhage
  - d) Childbirth
  
4. A nurse is monitoring a new mother during the postpartum period for signs of hemorrhage. Which of the following signs, if noted in the mother, would indicate early sign of excessive blood loss?
  - a) A temperature of 100.4F
  - b) An increase in the pulse from 88 to 102 BPM
  - c) An increase in the respiratory rate from 18 to 22 breaths per minute
  - d) A blood pressure change from 130/88 to 124/80 mm Hg
  
5. A nurse performs an assessment on a client who is 4 hours postpartum. The nurse notes that the patient has cool, clammy skin presents restless and excessively thirsty. The nurse prepares to immediately:
  - a) Assess for hypovolemia and notify the health care provider
  - b) Begin hourly pad counts and reassure the client
  - c) Begin fundal massage and start oxygen by mask
  - d) Elevate the head of the bed and assess vital signs

6. Methergine or Pitocin is prescribed for a patient to treat postpartum hemorrhage. Before administration of these medications, the priority nursing assessment is to check the:
- Amount of lochia
  - Blood pressure
  - Deep tendon reflexes
  - Uterine tone
7. Upon completing a fundal assessment, the nurse notes the fundus is situated on the client's left abdomen. Which of the following actions is appropriate?
- Ask the patient to empty her bladder
  - Straight catheterize the client immediately
  - Call the client's health provider for direction
  - Straight catheterize the client for half of her uterine volume
8. Which of the following complications may be indicated by continuous outflow of blood from the vagina of a postpartum patient, when palpation of the uterus reveals a firm uterus 1 cm below the umbilicus?
- Retained placental fragments
  - Urinary tract infection
  - Cervical laceration
  - Uterine atony
9. Which of the following complications is most likely responsible for a delayed postpartum hemorrhage?
- Cervical laceration
  - Clotting deficiency
  - Perineal laceration
  - Uterine subinvolution
10. Which type of lochia should the nurse expect to find in a patient 2 days postpartum?
- Foul-smelling
  - Lochia serosa
  - Lochia alba
  - Lochia rubra
11. When performing a postpartum check, the nurse should:
- Assist the patient into a lateral position with upper leg flexed forward to facilitate the examination of her perineum
  - Assist the patient into a supine position with her arms above her head and her legs extended for the examination of her abdomen
  - Instruct the patient to avoid urinating just before the examination since a full bladder will facilitate fundal palpation
  - Wash hands and put on sterile gloves before beginning the check

12. The nurse is assessing the lochia on a 1-day postpartum patient. The nurse notes that the lochia is red and has a foul-smelling odor. The nurse determines that this assessment finding is:

- a) Normal
- b) Indicates the presence of infection
- c) Indicates the need for increasing oral fluids
- d) Indicates the need for increasing ambulation

13. A nurse is developing a plan of care for a postpartum patient with a small vulvar hematoma. The nurse includes which specific intervention in the plan during the first 12 hours following the delivery of this client?

- a) Assess vital signs every 4 hours
- b) Inform health care provider of assessment findings
- c) Measure fundal height every 4 hours
- d) Prepare an ice pack for application to the area.

14. Which of the following circumstances is most likely to cause uterine atony and lead to postpartum hemorrhage?

- a) Hypertension
- b) Cervical and vaginal tears
- c) Urine retention
- d) Endometritis

15. The nurse examines a patient one-hour after birth. The patient's fundus is boggy, midline, and 1 cm below the umbilicus. Her lochia flow is profuse, with two plum-sized clots. The nurse's initial action would be to:

- a) Place patient on a bedpan to empty her bladder
- b) Massage patient fundus
- c) Call the physician
- d) Administer Methergine 0.2 mg IM which has been ordered prn

16. A nurse in a postpartum unit is instructing a patient regarding lochia and the amount of expected lochia drainage. The nurse instructs the patient that the normal amount of lochia may vary but should never exceed the need for:

- a) One peripad per day
- b) Two peripads per day
- c) Three peripads per day
- d) Eight peripads per day

17. A nurse is caring for a postpartum patient who has received epidural anesthesia and is monitoring the patient for the presence of a vulva hematoma. Which of the following assessment findings would best indicate the presence of a hematoma?

- a) Complaints of a tearing sensation
- b) Complaints of intense pain

- c) Changes in vital signs
  - d) Signs of heavy bruising
18. A nurse is preparing to assess the uterine fundus of a patient in the immediate postpartum period. When the nurse locates the fundus, she notes that the uterus feels soft and boggy. Which of the following nursing interventions would be most appropriate initially?
- a) Massage the fundus until it is firm
  - b) Elevate the mother's legs
  - c) Push on the uterus to assist in expressing clots
  - d) Encourage the mother to void
19. After expulsion of the placenta in a patient who has six living children, an infusion of lactated ringer's solution with 10 units of Pitocin is ordered. The nurse understands that this is indicated for this patient because:
- a) She had a precipitate birth
  - b) This was an extramural birth
  - c) Retained placental fragments must be expelled
  - d) Multigravida's are at increased risk for uterine atony
20. Which measure would be least effective in preventing postpartum hemorrhage?
- a) Administer Methergine 0.2 mg every 6 hours for 4 doses as ordered
  - b) Encourage the woman to void every 2 hours
  - c) Massage the fundus every hour for the first 24 hours following birth
  - d) Teach the woman the importance of rest and nutrition to enhance healing

Source: Amy's Nursing Blog (2010). OB/GYN 4 – Postpartum Nurse. For more information, visit <http://amy47.com/nclex-style-practice-questions/obgyn-nclex-type-questions/obgyn-4/>