IMPACTING THE TDAP ACCEPTANCE RATE AMONG POSTPARTUM WOMEN

by

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DEDICATION

I want to dedicate this to my husband, Mike Scharnke. He was my rock and savior through my doctorate; without him I am not sure I could have made it through many of nights. I would also like to dedicate this to my father, mother and family for understanding the many nights I was frustrated and needed support through those times. Thank you for being by my side and helping me through this endeavor.
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ABSTRACT

Pertussis, also known as Whooping Cough, is a contagious disease that affects children more than adults, especially children under the age of 12 months. In the United States in 2009, there were more than 16,000 cases of pertussis in infants less than 6 months of age (National Network for Immunizations and Information, 2011). At a local Midwestern community hospital, a revised Tdap policy that consisted of an education component and standardization of when the vaccine was administered was implemented to increase the acceptance rate of Tdap vaccines among postpartum mothers due to their significantly low Tdap acceptance rate. The purpose of this project was to determine if implementation of a Tdap postpartum policy that includes a patient education component, and standardization of when the vaccine is given affects the Tdap vaccine acceptance rate among postpartum women, using the John Hopkins Nursing Evidence-Based Practice Model to guide the study. A retrospective chart review was conducted three months prior to implementation of the Tdap practice change and the data were compared with the information collected three months post implementation of the project. There was a significant difference in Tdap acceptance rate among postpartum mothers, a chi-squared statistical analysis was performed on the pre and post group to determine overall acceptance rate of the vaccine. Documentation of patient education on the Tdap vaccine increased from 0 to 13.2% over the three month period. Revising the Tdap policy, standardization of the vaccine and educating the nurses and patients on the Tdap vaccine increased the overall Tdap acceptance among postpartum mothers.
CHAPTER 1

INTRODUCTION

Background

Pertussis, also known as whooping cough, is a contagious disease that affects children more than adults, especially children under the age of 12 months. The disease has been around since the 16th century, but researchers and medical professionals had no idea what caused the disease (CDC, 2012b). It was not until 1906 that scientists first isolated the Bordetella Pertussis organism which causes pertussis (CDC, 2012b). In the beginning of the 20th century, pertussis was one of the most common diseases that affected children and was one of the main causes of childhood mortality (CDC, 2012b). Before the pertussis vaccine was discovered in the 1940’s, an average of 175,000 cases of pertussis were diagnosed each year in the United States (CDC, 2012b). After implementation of the vaccine s, the rate of pertussis started to decline. The annual reported cases of pertussis in the United States was less than 15,000 in the 1960s, less than 5,000 in the 1970s, and less than 2,500 in the 1980’s and 1990’s (CDC, 2012b). For unknown reasons the rate of pertussis slowly started to creep up. By 2004, there were over 25,000 cases of pertussis reported in the US (CDC, 2012a). According to the Center for Disease Control and Prevention (CDC) in 2010, there were 27,750 cases of pertussis in the United States (CDC, 2012a). The CDC states “the primary goal of pertussis outbreak control efforts is to decrease morbidity (amount of disease) and mortality (death) among infants; a secondary goal is to decrease morbidity among persons of all ages” (CDC, 2012a, p.1). To do so, current guidelines suggest mothers on postpartum units receive Tetanus, Diphtheria, and Acellular Pertussis (Tdap) vaccines before discharge to help reduce the number of infants who may be diagnosed with pertussis, which could result in death (2006). The National Network for Immunizations
and Information (NNII, 2011a) states there were 16,858 cases of pertussis in children under 6 months old in 2009 and 50 out of every 10,000 children less than one who develop pertussis will die from it. Pertussis is worse for infants three months of age and less, as most cases tend to be severe which may result in death.

According to the Advisory Committee on Immunization Practices (ACIP), “patients with pertussis, including new mothers, are the identified source of B. pertussis infection in less than 25% of pertussis cases in early infancy, when rates for complications and fatalities are highest” (Murphy et al., 2008, p. 1). Murphy et al. (2008) recommend pertussis vaccinations for all adolescent and adult women of childbearing age. Clinicians should be assessing the status of Tdap vaccine for each patient during routine visits and physicals. Through assessment of vaccination status, health care providers can determine who needs immunization for pertussis, and in turn help prevent spread of pertussis by immunizing patients and their family members who may come in contact with infants (Murphy et al., 2008).

**Statement of Problem**

**Data from the literature supporting the need for the project.** The best way to prevent pertussis and pertussis outbreaks is through vaccination. The CDC has shown that pertussis vaccinations do not last a lifetime, as originally thought, therefore the CDC recommends Tdap vaccination for adults which protects them against pertussis. Currently, the CDC recommends adults ages 19-64 years of age receive a single dose of Tdap if they have not received the vaccine at all. For adults who have had a tetanus diphtheria (TD) booster within the last ten years, the CDC recommends they still get the Tdap for protection against pertussis. They recommend any adult who may come in contact with infants less than 12 months old receive a Tdap vaccine. If possible, women who plan to become pregnant should receive the vaccine before getting pregnant.
Women who are pregnant should receive the vaccine immediately postpartum if they have not had the Tdap vaccine in the past two years (Kretsinger et al., 2006).

Pertussis will occur in 90% of people who are not vaccinated and live with someone who has the disease (NNII, 2011a). Pertussis disease is readily spread from one person to another, when someone who is infected with the disease, coughs or sneezes (NNII, 2011a). Vaccination against pertussis not only decreases the chances of that person contracting the disease, but also helps protect those who cannot receive the vaccine for specific reasons; this is called community immunity and can lower both severity and death rates (NNII, 2011b). In recent years, pertussis outbreaks have been reported in the US. In 2006, Cook County, Illinois had a pertussis outbreak. Numerous times the school district recommended protecting students against pertussis by getting the Tdap vaccine. It was not until a school based Tdap vaccination clinic was implemented, that students actually received the vaccines (CDC, 2012b). It took the school district bringing the vaccines to the students to make sure every student was vaccinated. During the first half of 2012, 37 states in the US reported an increase in pertussis cases compared to the year before (CDC, 2012a). Washington State reported an epidemic of pertussis in April; 2,883 cases of pertussis were reported from January until April 2012. In July 2012, the CDC reported that the current pertussis outbreak was the worst in over 50 years. From January 2012 through July 2012, 18,000 cases of pertussis were reported resulting in nine infant deaths. Additionally, less than 8% of adults in the US were vaccinated against pertussis (Hanwerker, 2012).

According to Dr. Mark Sawyers, chairperson of the pertussis work group for the CDC, “Our biggest work is to get adults immunized. This is particularly relevant to pregnant women and new grandparents, who will have contact with infants” (Hanwerker, 2012, p.9). Castagnini, Healy, Rench, Wootton, and Munoz (2011) implemented a
standing order for the Tdap vaccine on the postpartum unit in a Texas hospital and doubled the number of vaccines given to mothers. By having the vaccine readily available, the number of mothers who received the vaccine dramatically increased. If patients are not offered the vaccine, they are less likely to receive it since most patients are not familiar with pertussis, and need education regarding the importance of the vaccine.

**Data from the clinical agency supporting the need for the project.** The EBP project was implemented at a Midwestern community hospital with 220 private rooms, 22 ER rooms, and 12 ICU rooms. The OB unit has 10 private birthing suits and four triage rooms. From June 2011 through May 2012, 59 Tdap vaccines were administered to postpartum women on the unit. In that time frame, 532 deliveries were performed on the OB unit, thus only 10.1% of postpartum patients were vaccinated. The OB nurse manager and head OB physician were concerned with the low number of vaccinations administered and wanted to do something to increase the vaccination rate. A standing order for Tdap vaccine administration to postpartum mothers was already in place, but the vaccine was not being offered as outlined in the unit policy. The unit policy was consistent with ACIP guidelines which recommend administering Tdap immediately postpartum. The unit nurses needed education on the importance of the vaccine and increasing the number of vaccines administered on the unit to help prevent the spread of pertussis. Also the unit needed a specific procedure outlining when postpartum nurses would administer the vaccine.

**Identify Compelling Clinical Question**

The purpose of this EBP project was to determine if nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery affected the Tdap vaccine
acceptance rate among postpartum women. A secondary purpose was determined if there was a relationship between characteristics of postpartum women and Tdap vaccine acceptance. An overall goal of the project was to decrease the transmission of pertussis from mother to infant which would, decrease the number of infants who become severely ill and potentially die from this disease. The project was developed through the process of clinical inquiry in which clinicians appraise different sources to determine what the best treatment options are for a particular action (Melnyk & Fineout-Overholt, 2011).

According to Melnyk and Fineout-Overholt (2011), once a clinical inquiry is encountered, a clinical question can be developed. The PICOT question for this EBP project was: In postpartum mothers, what is the effect of nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery on the Tdap vaccine acceptance rate over a three month period?

**Significance of the Project.** The main goal during an outbreak of pertussis is to decrease the morbidity and mortality rates of infants (CDC, 2012a). One way to decrease the rate of transmission is to vaccinate. Currently only 8% of adults are up to date regarding their Tdap vaccinations. This is a significant problem. Unvaccinated adults can spread the pertussis disease to other adults, children, and infants. Within the first five months of 2012, the United States had 18,000 cases of pertussis and the number continues to rise (Handwerker, 2012). Pertussis cases peak in number every 3-5 years (CDC, 2012b). If healthcare providers can increase the number of adults vaccinated, especially postpartum mothers, they may be able to decrease the number of pertussis cases, and end the cycle of pertussis outbreaks.
CHAPTER 2
THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

Evidence Based Practice (EBP) is key to successfully delivering the highest quality of care and ensuring the best outcomes possible for patients (Melnyk & Fineout-Overtholt, 2011). According to Melnyk and Fineout-Overtholt (2011), transformation of current practice should be guided by a conceptual model or framework. Frameworks are used to help predict and explain health behavior, and to provide a foundation for studies (Hall, 2012). The conceptual framework that guided this EBP project was the Health Belief Model (HBM) and the evidence based practice model was John Hopkins Nursing Evidence-Based Practice Model (JHNEBPM). The HBM helped predict and explain patients’ behaviors about receiving the Tdap vaccine. This model guided the communication components between the nurses and patients regarding education and administration of the vaccine. On the other hand, the JHNEBPM facilitated the translation of evidence into practice. The purpose of this EBP project was to determine if nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery affected the Tdap vaccine acceptance rate among postpartum women.

Theoretical Framework

Overview of HBM. The HBM was developed by Hochbaum, Rosenstock, and Kegals from the US Public service office, in the 1950’s (University of Twente, 2012). The model is a guide for health care personnel in planning communication components of health care education programs. The HBM is one of the most commonly used conceptual frameworks for health promotion and health education (Hayden & Patterson, 2009). This model was developed to explain the different beliefs that should be assessed for improved communication to allow positive health behaviors to result
(Carpenter, 2010). The HBM is an interpersonal framework where humans use a multidimensional approach in decision making towards health behaviors (Hall, 2012). The premise of the model is that people are more likely to act in healthy ways, if they know or believe the action will prevent a negative outcome that will affect them (Carpenter, 2010).

The HBM has been used in studies that range from prevention of colon cancer to determining exercise behavioral changes in diabetics. According to the HBM model, behavior change is largely attributed to cognitive decision-making (Fingfged, Wongvatunyu, Conn, Grando, & Russel, 2003). The HBM attributes health behavior changes to the initiation of readiness for action. This readiness is based on balancing multiple perceptions regarding severity, susceptibility, benefits, and barriers (Fingfged et al., 2003).

The first perception is perceived seriousness. Perceived seriousness addresses the individual's thoughts about the severity of the illness or disease. The stronger the person’s perception of the severity of the disease and outcome, the more likely the individual will try to avoid the outcome (Roden, 2004). The individual will take whatever action necessary to prevent the disease or change the severity of the outcome.

The second perception is perceived susceptibility. Perceived susceptibility includes the ideas or thoughts an individual has about possible risk or the possibility of getting a disease. When one believes their risk for a disease is greater, that individual is more likely to try and prevent that specific disease. An individual is more likely to be motivated to act in healthy ways (Roden, 2004). Therefore, an individual will make better health choices to prevent an illness, if the possibilities of contracting a disease or illness are at an increased risk.
The third perception is perceived benefits. A perceived benefit is an individual’s thoughts or ideas of the usefulness of changing behavior or adapting a new behavior to prevent a disease. An individual must understand and perceive the new behavior or change in behavior will cause a positive benefit (Roden, 2004). When the individual perceives that this change can cause a positive outcome, he/she is more likely to change the behavior to achieve this benefit.

The fourth and final perception is perceived barriers. A perceived barrier is an individual’s observation of barriers that are preventing adaptation or making a change in behavior. It is very important for an individual to believe the benefits of the change outweigh the risks of not enduring the specific change (Roden, 2004). If there are strong barriers preventing the behavior or change, individuals are less likely to initiate any behavior change. Most individuals do not like change; therefore, perceived barriers are the strongest determinates of behavior change.

There are three key concepts that can affect each perception and in return affect behavior: (a) variable, (b) action cue, and (c) self-efficacy (Glanz, Rimer, & Viswanath, 2008). Each perception can be modified by different variables and can influence personal perceptions and thoughts. Variables are different characteristics such as age, culture, race, and education level. Redding, Rossi, Rossi, Velicer, & Prochaska, (2003) identified how an individual values their own health and how concerned the individual is about their overall health as a variable. For example, individuals that are concerned about their overall health and well-being, are more likely to exercise and eat right, than those who have little or no concern about their health (Redding et al., 2003). It is a variable that can affect individual behavior.

Behavior is also affected by actions cues. Action cues are people, events, or ideas that influence an individual to change behavior. Action cues could be reminders to
see the doctor or someone else getting sick. Action cues trigger an alert to change a particular behavior. While action cues are acknowledged to promote behavioral changes, they are the most under developed and rarely used measure of the model (Carpenter, 2010).

Another key item that can affect behavior is self-efficacy. Self-efficacy is an individual’s ability to carry out an action. An individual usually does not carry out a new action unless he/she believes he/she will be able to perform the necessary action to make the health related change. Individuals are more likely to fail at achieving something when they do not believe they can do it (Downing-Matibag and Geisinger, 2009). Action cues, variables, and self-efficacy can affect each perception and in turn affect behavior, yet behavior changes are necessary to promote change leading to good health.

Numerous researchers have used the HBM model to guide research and EBP studies. Hall (2012) used the HBM as the cognitive framework to explain and predict behavior related to contraception. Hall (2012) performed a literature review of articles that used the HBM as a framework to discuss and predict behaviors related to contraception. According to Hall, the HBM helps to identify and predict factors that influence the use of contraception. The perceived susceptibility and seriousness of pregnancy cues individuals to change behavior and use contraception to avoid the threat of an unwanted pregnancy. The possibility of an unwanted pregnancy and the potential outcomes such as abortion, parenthood, and birth provide incentives for women to use contraception. The perceived barriers of contraception however are the possible side effects, such as headache, weight gain, and mood change, and the inconvenience of taking a medication on a regular basis. The perceived benefits are prevention of pregnancy and its complications. The cues to action could be missed periods, concerns proposed by a health care provider, or concerns from a partner. Hall concluded that the
HBM can direct family planning and practice and provide a framework to understand modern contraceptive behaviors.

Roden (2004) used the HBM to show how nurses can provide guidance for families when using health promotion. In this study, Roden combined the HBM and Ajzen's Theory of Planned Behavior. Roden believed the HBM model needed to be revised from its original form to provide the proper guidance for the study. She argued that if the HBM is to be applied to health promotion, it would need two additional components to the four perceptions presented in the original model. The first component was an improvement in the decision making ability in regards to economy and environmental factor influences that can prevent families from making good health behavior decisions (Roden, 2004). The second component was the behavioral intention (BI) construct from the Theory of Planned Behavior that increased the logical explanation, clarity, and accuracy of the model and lead to the improvement of predicting health promoting behaviors (Roden, 2004). Both components were believed to help improve the predictability of health promoting behaviors.

Carpenter (2010) performed a meta-analysis including 18 studies to determine if variables of the HBM could longitudinally predict individual behaviors. The author reported the findings of each of the four predictors. Severity was shown to be a low predictor of behavior. Knowing the severity of a negative health outcome did not appear to predict the adoption of a new behavior. Susceptibility had almost no effect on the individual’s probability of changing behavior to avoid a negative health outcome. The perception of benefit was consistently a positive predictor of behavior. The individual was more likely to perform a behavior change to prevent a negative health outcome if they knew the benefit of the behavior change. The largest predictor was the perception of the individual’s barriers to performing a behavior change. If individuals could perceive
overcoming barriers, they were more likely to change their behavior. Overall, Carpenter (2010) concluded the perceptions of barriers and benefits were good predictors of an individual’s behavior.

The HBM model has been used in many health care settings. It can be used to guide communication for health promotion with patients. Some researchers have used the model to help predict the likelihood of a behavior, ranging from the use of contraception to women getting mammograms. Some researchers have found the HBM lacks a few components needed for health promotion, but adapted the model using specific components from other models.

**Strengths and weaknesses of the HMB.** The HBM model has been used to predict and explain behaviors associated with positive health outcomes and has been replicated numerous times (Carpenter, 2010). Another strength is that the HBM can be applied across a broad spectrum of health related topics and behaviors. It predicts and describes possible patient actions to a certain health related behavior. A third strength is that it can help develop testable predictions. Redding et al. (2000) stated the HBM has the longest history out of the four most commonly used health behavior change models. According to Smith et al. (2011), the HBM is simplistic in organizing topics and was originally developed to understand why people do not get vaccines. Thus the HBM was well suited to guide this EBP project, which aimed to increase the Tdap vaccine acceptance rate of postpartum women. The model uses an individual’s own attitudes and beliefs, which ultimately can affect their actions. Though there are several strengths which make this model very versatile and applicable, it also has weaknesses.

Some researchers have identified the main weakness of the HBM as inconsistency in predicting behaviors (National Institute for Health and Clinical Excellence, 2007). Most of the research on the HBM focuses directly on the four
perceptions of the model and results regarding the ability of the perceptions to predict behavior are not always consistent. Lack of research on specific components of the model has been noted by certain researchers (Roden, 2004). Researchers have also noted that this model does not address health-related belief systems outside of Western culture (Finfgeld et. al, 2003). There is presently little literature on action cues or variables to discuss them in extensive detail. More research is needed on these concepts.

**HBM applied to EBP project.** The HBM guided the EBP project to implement a policy focusing on the administration of the Tdap vaccine to postpartum mothers, before they leave the OB unit. Administration of the Tdap vaccine to postpartum mothers is one way of preventing the spread of pertussis from mother to their infants and children. The perceived barriers to implementing this project were predicted using the HBM. These barriers were addressed to prevent negative outcomes. By offering the vaccine to mothers, health promotion through education was accomplished. When the mother received the vaccine, she changed a behavior to prevent pertussis, which she is susceptible to acquire. In turn, the behavior change helped prevent transmission of pertussis to her infant as well.

When a mother was first admitted to the OB unit, the perceived susceptibility and seriousness of pertussis was addressed. Teaching about the need for Tdap vaccine and severity of pertussis was performed by the nurse. An educational hand-out which addressed the seriousness of pertussis and recommendations regarding who should receive the vaccine was given to the mother.

After teaching occurred and the mother’s questions were answered, the nurse offered the Tdap vaccine to the mother. During interaction with the patient, the nurse assessed possible barriers the mother may have encountered. If the patient or nurse
identified barriers to administering the vaccine, the nurse addressed those barriers. Since the vaccine was administered in the hospital, before the mother was released, the barriers of access, availability, cost, and knowledge were addressed. Lack of knowledge was a barrier many individuals encounter while considering the Tdap vaccine. Individuals, who do not understand why healthcare providers recommend the vaccine, are less likely to receive it. They must understand the benefits of the vaccine and the actions they were taking. This barrier was addressed when the patient received the educational hand-out (Appendix B) and the nurse instructed them about the vaccine. The handout consisted of pertussis statistics, the primary goal of the CDC in a pertussis outbreak, and an explanation of the steps the nurse would be taking to implement the Tdap policy for postpartum mothers properly.

The barriers of access, cost, and availability were addressed by offering the vaccine in the hospital. When the vaccine is given before discharge from the hospital, the individual does not have to worry about how they will pay for the vaccine at that time, nor where and when they will be able to receive it. Medicare, Medicaid, and most commercial insurance policies cover the vaccine. Other barriers, negative consequences of getting an injection and the possible side effects which include pain from the injection and soreness in the arm, were addressed by the nurse during the education component. Patients were instructed about application of ice at the injection site and over the counter analgesics to alleviate side effects.

The perceived benefits of the mother receiving the vaccine, included not only decreasing the mother’s probability of getting pertussis, but also the probability of her newborn and other children contracting the disease. Other benefits of the vaccine discussed with the mother were prevention of tetanus and diphtheria.
Action cues were used throughout the mother’s stay on the OB/postpartum unit. One action cue was a reminder for the mother to receive the Tdap vaccine before she left the unit. Other action cues included the education the nurses provided and the educational handout that supported the information the nurses provided. Additionally, physicians provided reinforcement to the mothers about the importance of being vaccinated to prevent the disease. These action cues were strategies put in place to bring awareness to the patients. These cues prepared the patient for the readiness to take action and receive the Tdap vaccine while in the hospital.

Self-efficacy is the individual's confidence in their ability to achieve a specific action (Redding et al., 2003). To maintain self-efficacy, each mother made her own decision whether or not to receive the vaccine. The nurses provided education and support to the mother to encourage the behavior change, receiving the Tdap vaccine. The training and support increased the confidence level of the mothers and promoted understanding about the vaccine and its benefits, thus promoting vaccine acceptance. Not only can self-efficacy have an effect on behavior, but different variables encountered by individuals also affected self-efficacy.

Variables that may have affected whether mothers opted to receive the Tdap vaccine include the patient’s age and socioeconomic status. Smith et al. (2011) reported children between 24 and 35 months of age did not receive the Tdap vaccine because their parents either refused or delayed the vaccine. The children were in households that were below poverty level, had mothers were less than 30 years of age, yet had a college degree (Smith et al., 2011). Certain variables decreased the likelihood of the mother agreeing to receive the vaccine. Regardless, the use of the HBM greatly enhanced the patients to act and receive the vaccine before they left the unit.

**EPB Model**
Overview of JHNEBPM. Evidence based practice projects use models to guide and implement the projects successfully. The JHNEBPM “facilitates bedside nursing in translating evidence to clinical, administrative, and educational practice” (Melnyk & Fineout-Overholt, 2011, p. 271). The use of EBP can influence health care decisions that improve the quality of care that patients receive (Newhouse, Dearholt, Poe, Pugh, & White, 2011). It provides a systematic approach for health care personnel to make decisions that will achieve the best practice for their patients and accountability for themselves and other health care professionals (Newhouse et al., 2011).

The JHNEBPM uses the PET process to translate evidence into practice. There are three stages to the process: (a) practice question, (b) evidence, and (c) translation. The first step is to develop a practice question. The goals of this stage include identifying the EBP question, defining the scope of the practice, assigning a leader, and assembling a team. Since development of a question is sometimes, more difficult than answering the question itself, a question development tool is provided to guide the creation of a practice question.

The second stage in the PET process is evidence. In the evidence stage, individuals use critical thinking to analyze, synthesize, and interpret information. Once the evidence is obtained, conclusions are formed from the information available. During the evaluation of information, the individual looks at four components of evidence: study design, quality, consistency, and directness (Newhouse et al., 2011).

The John Hopkins Nursing Evidence-Based Practice Rating Scale consists of five levels of evidence. Level one includes experimental studies/randomized control trials (RCT) and meta-analysis of RCTs. Level two consists of quasi-experimental studies. Level three includes non-experimental studies, qualitative studies, and meta-syntheses. Level four involves opinions of nationally recognized experts based on research
evidence or expert consensus of panels. Level five is comprised of opinion of an individual expert based on non-research evidence (Newhouse et al., 2011). Additionally, the quality of evidence is rated using a letter grade of A, B, or C (Newhouse et al., 2011).

The letter grade scale differs for research and non-research evidence. Research evidence defines A as high, consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendation based on extensive literature reviews that include thoughtful reference to scientific evidence. B is defined as good, reasonably consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. C is defined as low/major flaws, little evidence with inconsistent results, insufficient sample size, and conclusion cannot be drawn (Newhouse et al., 2011, p. 207).

The non-research grading system is separated into two sections, Summative Reviews and Expert Opinions. The Summative Review, grade A, also known as high, consists of reproducible search strategies, consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of scientific strength and quality of included studies, and definitive conclusions. Grade B, also known as good, reasonably through and appropriate search; reasonable consistent results, sufficient numbers of well-designed studies, evaluation of strengths and limitations of included studies, and with fairly definitive results. Grade C, also known as low/major flaws, below par, poorly defined or limited search strategies; insufficient evidence with inconsistent results, conclusions cannot be drawn (Newhouse et al., 2011, p. 211).
The third and final stage of the PET process is translation. During this stage, the individual determines if the practice change recommendations are able to be implemented in their specific setting (Newhouse et al., 2011). To determine if a specific change is feasible, the change must be examined. When implementing a practice change in a specific setting, requirements of the nurses and the potential effects of the change all need to be considered (Newhouse et al., 2011). Once the determination is made to implement the change, then the action plan is developed. The action plan may include a new protocol, guideline, clinical pathway, or changes to existing protocols, guidelines, or clinical pathways (Newhouse et al., 2011). Once the plan has been developed and the proper changes have been approved by organizational leadership, then implementation can occur.

Securing organizational leadership support is a critical factor in implementing any change. To obtain organizational leadership support, the budget must be estimated and the plan must be formulated (Newhouse et al., 2011). The comprehensive implementation plan should be presented to key leadership personnel in an effort to obtain support from the organization (Newhouse et al., 2011). The presentation will help the organization understand the exact plan and the expected outcomes. The organization may decide to implement the change across the whole organization or pilot the change and monitor the outcomes. Usually, organizations pilot the change in a specific area, instead of across the whole organization.

For implementation to occur properly and successfully, all team members have to be informed, educated, and trained on practice changes (Newhouse et al., 2011). Once the change is implemented successfully, evaluation of the change can occur. During the evaluation, the degree to which the goals are met should be determined. Some
outcomes are expected and others are unexpected (Newhouse et al., 2011). The outcomes can help determine if alterations need to be made to the new change.

After the implementation is evaluated, reporting the results and findings to the organizational leaders is next (Newhouse et al., 2011). The organizational leaders will determine if the desired outcomes are supported enough to be implemented across the whole organization. The final step is to communicate the results to external sources (Newhouse et al, 2011). Therefore the findings of this EBP project can help not only a single organization, but multiple ones.

**JHNEBPM applied to EBP project.** Consistent with JHNEBPM, the EBP project began with developing a practice question. The OB unit manager identified that the postpartum mothers were not receiving the Tdap vaccine before discharge from the unit. Stiller (2011) identified that pertussis is being transmitted from close family members to infants without the transmitters even knowing they have it. The Advisory Committee on Immunization Practices (ACIP) strongly recommends the use of pertussis vaccine in postpartum mothers to decrease the transmission of pertussis to the infant (Clark, Adolphe, Davis, Cowan, & Kretsinger, 2006). The clinical problem is clear and concise, but how to fix it is the challenge. The DNP student and the OB nurse manager discussed the current unit policy for administering the Tdap vaccine and the need to increase the number of the vaccines given. After the discussions, the second stage was implemented.

The second stage of the process consisted of conducting a systematic review of the literature to identify the best evidence to answer this clinical problem. Once the evidence was selected, appraisal and synthesis were performed. Appraisal was performed by using the John Hopkins Nursing Evidence-Based Practice Rating Scale thereby determining the level and quality of each piece of evidence. Synthesis of the
evidence was performed and practice recommendations were developed for the EBP project. Recommendations included educating the patients on the harm pertussis can cause through discussion and a handout, and administering the vaccine immediately during the postpartum period.

The third stage is translation. It was determined that giving the Tdap vaccine to postpartum women while on the OB unit is feasible for this practice setting. The outcomes of the EBP project were determined. The main outcome was to monitor the acceptance rate of Tdap vaccinations administered to postpartum women prior to discharge from unit. Prior to implementing the Tdap administration on the postpartum unit, the nurses were educated on the change in the policy. This action plan was then implemented. After the changes were implemented for three months, the Tdap vaccine acceptance rate was calculated. This vaccine acceptance rate was compared to the three month pre-intervention acceptance rate. Once the outcome was evaluated, the final report was shared with the organizational leaders.

**Literature Search**

**Sources of evidence.** A literature search was performed to identify sources of evidence to address the PICOT question “In postpartum mothers, what is the effect of nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery on the Tdap vaccine acceptance rate over a three month period?” Databases used were Cochrane Database of Systematic Review, Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Joanna Briggs Institute Clinical Online Network of Evidence for Care and Therapeutics (JBI COnNECT), MEDLINE, and National Guideline Clearinghouse.
Key words used included pertussis vaccine, pertussis, whooping cough vaccine, whooping cough, and postpartum. Inclusion criteria were age 19-44, English language, and peer reviewed. The searches lead to 34 publications from various databases: Cochrane Library, seven; CINHAL, nine; JBI, zero; MEDLINE, 10; and National Guideline Clearinghouse, eight.

Of the seven articles that resulted from searching the Cochrane Library, all were excluded since they did not pertain to Tdap administration in postpartum women (Altunaiji, Kukuruzovic, Curtis, & Massie, 2007; Bar-On, Goldberg, Hellmann, & Leibovici, 2012; Bettiol, et al., 2012; Chen, Zhuo, Yuan, Wang, & Wu, 2008; Kapoor, Tharyan, Kant, Balraj, & Shemilt, 2010; Oyo-Ita, Nwachukwu, Oringanje, & Meremikwu, 2011; Zhang, Prietsch, Axelsson, & Halperin, 2012). Nine articles resulted from the CINHAL search; five articles were included in the review, thus four of the articles were excluded. The five articles that were included in the literature review discuss recommendations for using Tdap in postpartum mothers (Jackson, 2008; Lee et al., 2005; Stiller, 2011; Tan & Gerbie 2010; Trick et al. 2010). Three articles were excluded because they discussed administering Tdap in pregnant mothers (Gall, 2008; Gall 2012; Shakib et al., 2010). Another article (DeSanto, 2011) was excluded because it was a poster presentation summary and did not include sufficient information to support discussion.

JBI yielded no results when searching the key words. MEDLINE search revealed 10 articles. Three of the articles were included in the literature review because they addressed administering Tdap to postpartum mothers (Cheng et al., 2010; Clark et al., 2006; Krestinger et al., 2006). Two of them were duplicates from CINHAL (Lee et al., 2005; Tan & Gerbie, 2010), and thus already included in the literature review. Four of the publications that were excluded from the study discussed Tdap vaccine pertaining to
kinetic antibodies, cocooning, and administration in health care workers (Halperin et al., 2011; Healy, Rench, & Baker, (2011); Healy, Rench, Castagnini, & Baker, 2009; Tan & Gerbie, 2009). The final publication excluded talked about Tdap in pregnant women (Updated recommendations for use of tetanus toxoid, reduced toxoid and acellular pertussis vaccine in pregnant women and person who have anticipate having close contact with an infant aged < 12 months---- Advisory Committee on Immunization Practices, 2011).

The National Guideline Clearinghouse resulted in eight guidelines. One guideline will be used for the literature review (Murphy et al., 2008). Seven of the guidelines were excluded because they did not discuss Tdap vaccination, and/or they only addressed overall vaccination of adults (ACIP 2012; Akkerman et al., 2012; Department of Veteran Affairs, Department of Defense, 2009; Kroger, Sumaya, Pickering, & Atkinson, 2011; Nordin et al., 2007; University Michigan Health Systems, 2011; Wilkinson et al., 2011). Once the body of literature for review was completed, citation chasing was performed. Two articles were identified, one article was excluded because it was greater than 20 years old (Beiter, Lewis, Pineda, & Cheery, 1993), and the other article was included in the review (Castahnini et al. 2011). Ten articles were reviewed, three non-experimental descriptive studies, three quasi experimental studies, two practice recommendations, and two expert opinion.

Levels of evidence. Once the articles for review were determined, appraisal and synthesis occurred. The John Hopkins Nursing Evidence-Based Practice Evidence Rating Scale was used to rate the strength and quality of evidence. There is one tool for research evidence appraisal and one for non-research evidence appraisal. The strength of the evidence is rated from I to III for research and IV to V for non-research. The highest level of evidence is I and the lowest level of evidence is V. Level I consists of
experimental studies, randomized control trials, or meta-analysis of randomized control trials. Studies may be blind, double blind or non-blind. Level II includes quasi-experimental studies. Level III includes non-experimental studies, qualitative studies, and meta-syntheses. For non-research literature, level IV consists of systematic reviews and clinical practice guidelines based on research evidence or expert panels and level V includes individual expert opinion based on nonresearch evidence. The quality of evidence is rated on a letter scale: A high, B Good, and C Low quality or major flaws.

**Appraisal of relevant evidence.** Literature appraisal is presented in Table 2.1.

Castagnini et al. (2011) did a cross-sectional pre-intervention and post-intervention study comparing the effect of implementing a standing order for Tdap vaccine administration on the maternal postpartum unit at Ben Taub General Hospital in Houston, Texas. There were a total of 5719 births on the unit during the pre-intervention period and 5416 births during the post intervention period. During the study period, 514 infants contracted pertussis; 378 infants contracted the disease during the pre-intervention period and 136 infants contracted pertussis during the post intervention period. The data collection method was clear and concise. The data showed the number of pertussis cases decreased from 378 cases pre-intervention to 136 pertussis cases post intervention, which was a significant decrease of 37%. The authors concluded it may be too late to give the Tdap vaccine to postpartum women for protection against infants. Also programs need to be developed to vaccinate all adults, not just postpartum women.

A national random survey of 400 physicians was performed by Clark et al. (2006). The purpose of the study was to determine views on administration the Tdap vaccine for adults. The survey included all osteopathic and allopathic physicians that where obstetricians and/or gynecologists in the United States. This population was targeted because of their direct contact with women who were in close contact with
<table>
<thead>
<tr>
<th>Author/Year/Title</th>
<th>Purpose</th>
<th>Sample</th>
<th>Design/Measurement</th>
<th>Evidence Rating Strength/Quality</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Castahnini et al./2011/ Impact of Maternal postpartum tetanus and diphtheria toxoids and acellular pertussis immunization on infant pertussis infection</td>
<td>Evaluate routine maternal postpartum Tdap immunization and its effect in preventing infants less than six month old from getting pertussis.</td>
<td>5719 birth pre-intervention 5419 birth post intervention.</td>
<td>Quasi-experimental cross-sectional study using pre intervention and post intervention data from four Texas children hospitals. Compared the effects of implementing a standing order for Tdap on postpartum unit. The study compared the pre intervention periods without a standing order to the post intervention with a standing order.</td>
<td>Level II/ A High</td>
<td>Mean age of diagnosis of pertussis was 77 days old. Maybe too late to implement Tdap in postpartum mothers to help decrease the transmission of pertussis from mother to infant. 378 infants acquired pertussis pre intervention. 136 infants acquired pertussis post intervention</td>
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<tr>
<td>Cheng et al./2010/ Factors influencing women’s decisions regarding pertussis vaccine: A decision-making study in the</td>
<td>Determine what factors influence postpartum mothers to receive Tdap vaccine and if vaccine efficacy and 1398 out of 1519 women who delivered at Chang Gung Memorial hospital</td>
<td>Non-experimental descriptive study. Three page survey with 25 questions. The survey was multiple choice asking about</td>
<td>Level IV/ B Good</td>
<td>Relying on personal recollection of Td cause less mothers to receive the vaccine. Those who declined</td>
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<tr>
<td>Study</td>
<td>Title</td>
<td>Participants</td>
<td>Study Design</td>
<td>Level</td>
<td>Summary</td>
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<td>Clark et al./2006/</td>
<td>Attitudes of US obstetricians towards a combined tetanus-diphtheria-acellular pertussis vaccine for adults.</td>
<td>400 obstetricians</td>
<td>Non-experimental descriptive study. Six specific items addressed in the survey: administration of influenza and MMR vaccines; likelihood of recommending Tdap vaccines to pregnant and postpartum women; barriers encountered when offering Tdap; who is responsible for prompting Tdap vaccines to patients.</td>
<td>Level IV/ B Good</td>
<td>OBGYN's are likely to give Tdap vaccine. Tdap is safe in non-pregnant women and men. Women planning to get pregnant and postpartum women should receive the Tdap vaccine.</td>
</tr>
<tr>
<td>Jackson, S./2008/</td>
<td>Tdap education and administration during</td>
<td>N/A</td>
<td>Expert Opinion</td>
<td>Level V/ B Good</td>
<td>Tdap prevention and education programs are needed to prevent</td>
</tr>
<tr>
<td>Postpartum periods</td>
<td>Pertussis in postpartum mothers, to decrease the rate of transmission to infants.</td>
<td>Pertussis in adults and adolescents, which will help decrease the transmission rate to infants from mothers.</td>
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<td>Kretsinger et al./ 2006 /Preventing tetanus, diphtheria, and pertussis among adults: Use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine</td>
<td>Provide practice recommendations for health care professionals to carry out immunizations for Tdap vaccine.</td>
<td>Education of pertussis to parents and the use of the Tdap vaccine, could help reduce infant pertussis cases.</td>
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<td></td>
<td>Infants less than 12 months of age are more likely to be affected by pertussis and potentially die from it than any other age group.</td>
<td>Infants less than 12 months of age are more likely to be affected by pertussis and potentially die from it than any other age group.</td>
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<td>Tdap should be administered to patient immediately postpartum if they have not had it before pregnancy.</td>
<td>Tdap should be administered to patient immediately postpartum if they have not had it before pregnancy.</td>
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<td></td>
<td>Administering Tdap vaccine postpartum, before the mother leaves the OB unit instead of the first</td>
<td>Administering Tdap vaccine postpartum, before the mother leaves the OB unit instead of the first</td>
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<tr>
<td>Study</td>
<td>Evaluation</td>
<td>Six Vaccination Strategies</td>
<td>Model</td>
<td>Recommendation</td>
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<tr>
<td>Lee et al. / 2005</td>
<td>Evaluate health benefits, risks and cost of a national Tdap program</td>
<td>Six vaccination strategies: no vaccination, one time vaccination after 20, one time vaccination age 11, 10 year booster vaccine of Tdap for adults and adolescents, 10 year booster for adolescents, and postpartum mothers.</td>
<td>Non-experimental Markov Model</td>
<td>Level III / A High</td>
<td></td>
</tr>
<tr>
<td>Murphy et al. / 2008</td>
<td>Update of practice recommendations for health care professionals to carry out immunizations for Tdap vaccine.</td>
<td>N/A</td>
<td>Practice Recommendations</td>
<td>Level IV / A High</td>
<td></td>
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</table>

- Postpartum follow up visit, will help decrease the time frame the mother can transmit pertussis to their infants.

- Development of a hospital mechanism to provide postpartum Tdap is recommended.

- One time adult vaccination would prevent < 8% of cases.

- Adult and adolescent booster would prevent 41% cases.

- One time adolescent vaccine would prevent 36% of cases.

- Administer Tdap vaccine to pregnant women in second or third trimester if benefits outweigh risks.
<table>
<thead>
<tr>
<th>Study</th>
<th>Summary</th>
<th>Participants</th>
<th>Study Design</th>
<th>Evidence Level</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiller /2011/ Preventing neonatal pertussis through maternal immunization.</td>
<td>Explain the effects of immunizing mothers postpartum on the prevention of neonatal pertussis.</td>
<td>N/A</td>
<td>Expert opinion</td>
<td>Level V/ A High</td>
<td>An effective vaccine strategy for pertussis immunizations needs to be developed.</td>
</tr>
<tr>
<td>Tan &amp; Gerbie /2010/ Pertussis and patient safety: Implementing Tdap vaccine in hospitals.</td>
<td>Determine the effects of implementing the Tdap vaccine in postpartum and ER hospital settings.</td>
<td>12,096 postpartum women</td>
<td>Quasi- experimental One group posttest</td>
<td>Level II/ B Good</td>
<td>Hospital based programs to give Tdap vaccine can be implemented successfully as long as the key decision makers within the hospital and hospital personnel who will have a direct impact on giving the vaccine.</td>
</tr>
<tr>
<td>Trick et al. /2010/ Using computer decision support to increase maternal postpartum tetanus, diphtheria, and acellular pertussis Vaccination.</td>
<td>Evaluate the effects of computer-based clinical decision-support algorithm on number of Tdap vaccinations given to postpartum mothers.</td>
<td>Pre intervention group n=183 Post intervention group n=248</td>
<td>Quasi-experimental cohort study</td>
<td>Level II/ A High</td>
<td>Use of computer decision support increased the amount of Tdap vaccines given to postpartum mothers. Out of 67 patients who failed to receive</td>
</tr>
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</table>
the Tdap vaccine, 34 were due to patients order not being carried out and 30 were because patients refused.

Automated computer-based system can significantly help improve patient care.
infants. The survey concluded that 78% of participating physicians would recommend administration of the Tdap vaccine to mothers immediately postpartum. The largest barrier perceived was the patient knowing when they last received a tetanus diphtheria (td) booster. Authors recommended that women who are going to become pregnant and women during the immediate postpartum period receive the Tdap vaccine. Limitations of this study included possible selection bias, as the surveys were mailed. Other limitations included that more respondents were board certified physicians while the majority of those who did not respond to the survey were not board certified. A strength of the study was the use of random sampling, the surveys were mailed out to a randomly selected group, which increased the probability of obtaining a representative sample of obstetrician gynecologist (OBGYN) physicians within the sampling frame.

To determine the effects of six vaccination strategies, Lee et al. (2005) constructed a Markov Model. Researchers determined the health benefits, costs, risks, and cost effectiveness of the strategies. The six strategies were: a) no vaccination, b) one time vaccination at 11 years old, c) adolescent and adult vaccination with a 10 year booster, d) adult vaccination with a 10 year booster, e) one time vaccination at 20 years of age, and f) vaccination at postpartum. A review of literature was performed using Medline database, unpublished information from the CDC, and recent clinical trials on vaccines. Using the modified Delphi process, it was estimated that over a lifetime, approximately 85,000 cases of pertussis would occur if no vaccinations were provided. Immunizing adults and adolescents with a booster vaccine was estimated to be the best prevention of pertussis. One time adolescent vaccination would also prevent numerous cases, approximately 30,800. The rest of the strategies including postpartum vaccination administration reduced approximately 8% of pertussis cases. None of the strategies enabled a net savings for companies.
In a review, Jackson (2008) stated pertussis is highly contagious and transmitted by close contact from person to person. Between 2004 and 2005, over 50,000 pertussis cases were reported in the United States (Jackson, 2008). At Texas Children’s Hospital, greater than 75% of infants infected with pertussis were infected by family members (Jackson, 2008). The author concluded that hospital providers and policymakers must understand the emergence of pertussis and its threat to the infant population (Jackson, 2008). Education to providers and parents was recommended to increase vaccinations of adults and decrease infant pertussis cases.

Trick et al. (2010) used a computer-based clinical-support algorithm when implementing a Tdap vaccine program with postpartum mothers. Researchers performed a cohort study to compare the frequency of Tdap vaccines pre intervention and post intervention. The pre intervention and post intervention periods were 3 months and 15 days. The algorithm targeted women ages 14-45 years who had an order for iron. There were two exclusion criteria in the study, women who had a previous electronic order for Tdap or Td within two years, and women who had an order for phenytoin. The authors concluded that the use of computer-based clinical decision-support dramatically increased the number of Tdap vaccines given postpartum. Researchers in this study identified use of an electronic system as a study limitation; use of such a system is not universal. Some patients may have received the vaccine elsewhere and record of the vaccine would not be within the system. If everyone used the same electronic system, all health care providers could see what kind of care and interventions each person had received. Another weakness of the study was the use of an order for iron to trigger the Tdap algorithm. The use of a trigger may have missed some patients who did not receive iron during or after delivery.

Cheng et al. (2010) performed a survey to determine what factors may influence postpartum women to receive the Tdap vaccine. Women were asked to participate in the
decision making survey during their first postpartum visit. The survey used an 11 item instrument to determine each participant’s perception of Tdap vaccine risk. Survey results of the women who received the Tdap vaccine were compared to those who did not receive the Tdap vaccine. Chi-square analysis was used to determine specific associations to mothers receiving the Tdap vaccine versus not receiving the vaccine. In the survey women selected the most common influence on their decision regarding acceptance of the Tdap vaccine. Researchers identified education during the third trimester as one of the most successful ways to implement the Tdap vaccine in postpartum women. Survey results indicated that the most common reason women received the Tdap vaccine was their belief that they could transmit pertussis to their infant. The second most common reason was the mother’s belief that pertussis was very common among infants, and the third most common reason was fear their infant would develop pertussis. The three main reasons women declined the Tdap vaccine were fear of side effects, mothers thinking their babies would not have a chance at getting pertussis, and the fear of what the Tdap vaccine could do to the infant while the mother was breastfeeding. The health belief model was used in the study to explain health seeking behaviors and how people see themselves contracting a disease. The authors concluded that patients were more likely to receive the Tdap vaccine if they knew about the vaccine risks and benefits. Authors concluded a need for a successful implementation plan to improve Tdap acceptance in postpartum mothers; however, specific recommendations regarding the implementation plan were not provided.

Stiller (2010) authored an expert opinion article on pertussis prevention in neonates. In this article, the author reported that one third of infant cases of pertussis were transmitted from the mother and almost half of infant pertussis cases were transmitted from other family members. Stiller, reiterated the current recommendations which include vaccinating women before they become pregnant if they have not received a Td or Tdap vaccine within the last two
years or vaccinating women during the immediate postpartum. The author recommended implementation of a standing order for Tdap vaccine for postpartum mothers as this intervention may increase the Tdap vaccine acceptance rate. The author identified that hospitals need to develop some mechanism for postpartum mothers to receive Tdap before they are discharged from the OB unit. This could occur by incorporating the Tdap vaccine into existing order sets or through new standing orders.

Tan and Gerbie (2010) implemented a research project that addressed the need to increase Tdap in postpartum and emergency room patients. In 2007, the Chicago Department of Public Health along with the CDC donated Tdap vaccines in an effort to increase the numbers of postpartum mothers who received the vaccine. In the research study, educational sessions for the postpartum staff, labor and delivery staff, and the OB/GYN physicians were held to teach healthcare providers the importance of Tdap administration in postpartum women. During an 18 month period following implementation of the study, 9,540 doses of Tdap were given on the OB unit to postpartum mothers. The authors suggested that hospitals implement programs and initiatives for postpartum mothers to receive the Tdap vaccine before they leave the postpartum unit. A weakness of the study was the lack of baseline data. Data regarding Tdap administration rates prior to project implementation were not provided, thus comparisons pre and post intervention could not be concluded.

ACIP, an advisory committee composed of experts who provide guidance to the Secretary of the US Department of Health and Human Resources and the CDC, developed original practice recommendations and guidelines regarding pertussis vaccination in 2006, with updates in 2008. The categories of the guidelines are management, prevention, and treatment. The intended users are nurses, allied health, advanced practice nurses, hospitals, physician assistants, physicians, and public health departments. The target population for the 2006 guidelines was adults; whereas the 2008 guidelines targeted pregnant and postpartum women
and their infants. The major difference in the guidelines from 2006 to 2008 is the ACIP now recommends that women receive the Tdap vaccine during the second or third trimester of pregnancy if the risks outweigh the benefits.

The 2006 ACIP guidelines included the following recommendations:

1) Adults aged 19–64 years should receive a single dose of Tdap to replace tetanus and diphtheria toxoids vaccine (Td) for booster immunization against tetanus, diphtheria, and pertussis if they received their last dose of Td >10 years earlier and they have not previously received Tdap; 2) intervals shorter than 10 years since the last Td may be used for booster protection against pertussis; 3) adults who have or who anticipate having close contact with an infant aged <12 months (e.g., parents, grandparents aged <65 years, child-care providers, and health-care personnel) should receive a single dose of Tdap to reduce the risk for transmitting pertussis. An interval as short as 2 years from the last Td is suggested; shorter intervals can be used. When possible, women should receive Tdap before becoming pregnant. Women who have not previously received Tdap should receive a dose of Tdap in the immediate postpartum period; 4) health-care personnel who work in hospitals or ambulatory care settings and have direct patient contact should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap. An interval as short as 2 years from the last dose of Td is recommended; shorter intervals may be used. These recommendations for use of Tdap in health-care personnel are supported by the Healthcare Infection Control Practices Advisory Committee (HICPAC) (Kretsinger et al, 2006, p. 3).

In 2008, the ACIP updated the guidelines. These new recommendations included:

1) receive Tdap in the immediate postpartum period before discharge from hospital or birthing center, 2) may receive Tdap at an interval as short as two years since the most
recent Td vaccine, 3) receive Td during pregnancy for tetanus and diphtheria protection when indicated, or 4) defer the Td vaccine indicated during pregnancy to substitute Tdap vaccine in the immediate postpartum period if the woman is likely to have sufficient protection against tetanus and diphtheria. Although pregnancy is not a contraindication for receiving Tdap vaccine, health-care providers should weigh the theoretical risks and benefits before choosing to administer Tdap vaccine to a pregnant woman (Murphy et al., 2008, p. 3).

To appraise the guidelines, the Appraisal of Guidelines for Research and Evaluation II (AGREE II) instrument (The AGREE Collaboration, 2009) was used. The instrument evaluates guidelines in six domains. The scoring for each domain ranges from one, which is strongly disagree, to seven, which is strongly agree. The guidelines scored greater than 85% in four out of six of the domains for the 2006 guidelines: (a) scope and purpose (97%), (b) stakeholder involvement (95%), (c) rigor of development (79%), (d) clarity and presentation (100%), (e) applicability (79%), and (f) editorial independence (86%). The rigor of development received a low score because the authors did not clearly state the strengths or limitations of the guidelines or explain the systematic methods used to search the evidence. The applicability scored low because minimal explanation of barriers to application, advice on how to implement the guidelines, and monitoring and auditing guideline success were provided. Through assessment of the guidelines with the AGREE II instrument, the 2006 guidelines are recommended for use. The updated version, 2008, of the guidelines added situations when the vaccine should be given, but did not address some of the lacking areas in the first set of guidelines. Therefore the second set of guidelines (2008) were not appraised, they just made additional recommendation, not a completely new set of recommendations.

Numerous authors reference the guidelines from the ACIP. The ACIP guidelines recommend giving the Tdap vaccine to mothers immediately postpartum, but do not
recommend ways to implement the vaccine. Cheng et al. (2010) recommended education of both the nurses and patients and a standing order for the Tdap vaccine. More research is needed to determine best practice recommendations and implementation strategies.

**Construct EBP**

**Synthesis of relevant literature.** Researchers have confirmed that Tdap vaccines do not last a life time. Pertussis is one disease that can be controlled and prevented through vaccination, but at present is not (Tan and Gerbie, 2010). The majority of authors support administering the Tdap vaccine during the postpartum period via implementation of a hospital based program (Cheng et al., 2010; Clark et al., 2006; Jackson, 2008; Kretsinger et al., 2006; Lee et al., 2005; Stiller et al., 2011; Tan and Gerbie, 2010; and Trick et al., 2010;). One author did not support the Tdap vaccine administration to postpartum women (Castahnini et al., 2011). All authors reported the need for postpartum women to receive more information about the Tdap vaccine.

Mothers were shown to be responsible for one third of the pertussis transmissions to infants (Stiller, 2010). With the transmission rate being so significant from mothers to infants, Tan and Gerbie (2010) recommended that hospitals implement a vaccine program for postpartum women. The best way to implement Tdap vaccine programs in the hospital setting has yet to be identified. However, there are a several suggestions about ways to increase the Tdap administration rate within hospitals. Computer-based clinical-support was found to drastically increase the administration of Tdap vaccines (Trick et al., 2010). Education of healthcare providers including nursing staff of OB and postpartum units and OBGYN physicians, has been shown to increase the rate of Tdap administration (Cheng et al., 2010). Most OBGYN physicians support administering Tdap to postpartum women, who have not received a Td or Tdap booster within the last two years (Clark et al., 2006). Administration of
the Tdap vaccine can prevent the spread of pertussis from mothers to infants, especially if hospitals develop a Tdap vaccine program.

Best practice recommendations. The current best practice guidelines are from the ACIP. The guidelines were published in 2006 and then updated in 2008. These best practice guidelines were implemented with postpartum mothers, in an effort to address the clinical question, "In postpartum mothers, what is the effect of nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery on the Tdap vaccine acceptance rate over a three month period?"
CHAPTER 3
IMPLEMENTATION OF PRACTICE CHANGE

The purpose of this EBP project was to determine if nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery affected the Tdap vaccine acceptance rate among postpartum women. To implement these practice changes collaboration among all healthcare providers involved in the care of these patients was essential. The ultimate goal of this EBP project was to increase the Tdap vaccine acceptance rate, which in turn would decrease the number of pertussis cases in infants.

Setting

The project took place on the OB unit at a small community hospital in the Midwest. This 120 bed facility is part of a system that consists of three hospitals within 25 miles of each other. The hospital system is administered by the President of the board who oversees all hospitals; each individual hospital has a Chief Executive Officer and Chief Nursing Officer.

The OB unit has 10 private rooms and four triage rooms. Each room on the OB unit is a private suite and allows for visitors 24 hours a day. Ten OB/GYN physicians use the facility for maternity patients. The birthing suites offer water births, midwifery deliveries, and a lactation consultant. The hospital uses electronic medical records for charting and recording purposes. There are 22 registered nurses (RNs), 5 obstetrics technicians, 1 RN fellow, and 2 unit secretaries that make up the staff for the OB unit. The OB unit performs approximately 580 deliveries a year.

Sample

The sample was comprised of women of any age who had recently delivered a baby and was a patient of the OB unit. Patients that meet the following inclusion criteria were offered the vaccine: women who had not received either Tdap or Td booster within the last 2 years,
were not allergic to any components of the Tdap vaccine, were not presently pregnant, and/or did not have any contradiction to the vaccine.

**Outcomes**

The primary outcome of this EBP project was the Tdap vaccine acceptance rate. The vaccine acceptance rate was calculated for a three-month period following the policy implementation. This post intervention rate was compared to the vaccine acceptance rate obtained for a three-month period prior to policy implementation, the pre intervention phase. Secondary analysis investigated relationships between sample characteristics and vaccine acceptance.

**Intervention and Planning**

The first step in the intervention of the EBP project was to revise the current TDAP policy for the OB unit. The Tdap unit policy revision included an educational component for the patients, standardization of when the vaccine was given, and contraindications for the vaccine (see Appendix A). The next step was to develop the educational components. The handout used was developed by the CDC and is titled “Td or Tdap Vaccine (Tetanus-Diphtheria or Tetanus-Diphtheria-Pertussis) What You Need to Know” (see Appendix B). The educational handout consisted of information about who should receive the vaccine, why it should be received, who should not receive it, and what diseases the vaccine protects against. Once the policy change was completed and the educational component was developed, the unit manager then approved the changes and forms. After the changes were approved, the nurses were educated on the new policy and patient education component.

Training sessions for each shift occurred over several days, at different times to ensure all shifts and all nurses were able to attend. During the training sessions, the nurses were introduced to the revised Tdap policy and the patient education component with a handout
Questions were answered and any concerns were addressed during each training session.

When a patient came to the OB unit for admission for labor, complications, or monitoring, the patient was admitted to the unit by one of the nurses. Upon admission to the unit, the nurse asked a set of questions regarding the patient's health and the reason for their visit to the unit. During the intake questions, the nurse educated the patient on the importance of Tdap vaccination and how pertussis can be spread to infants unknowingly. At this time, the patient was also given the educational handout from the CDC on the Tdap vaccine. After delivery, the nurse administered the vaccine as soon as possible. If complications arose, or the mother had to have a C-section, the nurse addressed the vaccine administration once the mother was stable and able to receive the vaccine.

Institution Review Board (IRB) approval was sought from the university and the hospital system. To ensure human right protection, all identifying factors of the patient such as name and medical record number were kept locked in a cabinet until no longer needed and then destroyed by having it shredded. Information was reported as aggregate data only; no identifying information for individual patients was used.

Data

**Measures.** The primary outcome data is nominal level data. The vaccines were either accepted, yes or not accepted, no. The demographic data, age, race, delivery status whether C-section or vaginal delivery, GP status, and type of insurance, are of varying levels. Years of age are ratio level data and race and insurance type are ordinal level data.

**Collection and management.** The data regarding the number of Tdap vaccines administered and patients who delivered on the OB unit were tracked by accessing the OB unit delivery log. The delivery log was kept in the secured cabinet within the OB unit nurses’ station. The report listed both the patients that did and did not receive the Tdap vaccines. The DNP
student accessed the electronic medical record of each patient using a data collection tool to obtain demographic data.

**Management and analysis.** The data collected throughout the study was kept in a locked cabinet within a private office. Chi square analysis was performed to determine if a difference in acceptance rates between the pre and post intervention periods were attributed to the intervention. Demographic data were examined using t-tests and chi-square analyses to determine if subjects in the pre intervention phase were similar to subjects in the post intervention phase. Also, the relationships between demographic characteristics and vaccine acceptance rate were compared.
CHAPTER 4

FINDINGS

The purpose of this EBP project was to determine if nursing education and implementation of a revised Tdap postpartum policy that included a patient education component and standardization of vaccine delivery affected the Tdap vaccine acceptance rate among postpartum women. To assess the effectiveness of the nursing education and revised Tdap policy, the vaccine acceptance rate of postpartum mothers in the pre intervention group was compared to the post intervention group.

Sample Characteristics

Pre intervention group characteristics. The pre intervention group data were compiled from 126 medical records. The sample consisted of postpartum patients, ages 16-37 years who delivered on the OB unit from March 2012 through May 2012. The mean age was 26.39 years ($SD$ 5.07). The mean length of stay was 2.67 days ($SD$ .989). Of the group, 78.6% ($n = 99$) were Caucasian, 14.3% ($n = 18$) were African American, 3.9% ($n = 5$) were Hispanic, 0.8% ($n = 1$) were non-Hispanic, and 2.4% ($n = 3$) did not answer. The majority of patients (51.6%, $n = 65$), had commercial insurance, 44.4% ($n = 56$) had Medicaid, 1.6% ($n = 2$) had Medicare, and 2.4% ($n = 3$) had no insurance. The pre intervention group consisted of 42.1% ($n = 53$) first time mothers and 57.9% ($n = 73$) multiparas. Of the group, 69% ($n = 87$) had vaginal births and 31% ($n = 39$) had cesarean sections. These findings can be seen on Tables 4.1 and 4.2.

Post intervention group characteristics. The post intervention group data were compiled from 109 medical records. The sample consisted of postpartum patients ages 17-43 years who delivered on the OB unit from October 2012 through December 2012. The mean age was 26.50 ($SD$ 5.54). The mean length of stay was 2.58 days ($SD$ .852). These findings can be found on Table 4.1. Just under 78 ($n = 85$) of the group were Caucasian, 11% ($n =
Table 4.1

*Age and LOS*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre M (SD)</th>
<th>Post M (SD)</th>
<th>t</th>
<th>df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>26.39 (5.07)</td>
<td>26.50 (5.54)</td>
<td>-.167</td>
<td>233</td>
<td>.867</td>
</tr>
<tr>
<td>LOS</td>
<td>2.67 (.989)</td>
<td>2.58 (.852)</td>
<td>.730</td>
<td>233</td>
<td>.466</td>
</tr>
</tbody>
</table>
Table 4.2

Demographics of Sample

<table>
<thead>
<tr>
<th></th>
<th>Pre n (%)</th>
<th>Post n (%)</th>
<th>Total n (%)</th>
<th>$X^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>99 (78.6)</td>
<td>85 (77.9)</td>
<td>184 (78.3)</td>
<td>2.88</td>
<td>4</td>
<td>.577</td>
</tr>
<tr>
<td>African American</td>
<td>18 (14.3)</td>
<td>12 (11)</td>
<td>30 (12.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>5 (3.9)</td>
<td>7 (6.4)</td>
<td>12 (5.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-hispanic</td>
<td>1 (0.8)</td>
<td>0 (0)</td>
<td>1 (0.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Answered</td>
<td>3 (2.4)</td>
<td>5 (4.6)</td>
<td>8 (3.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insurance</strong></td>
<td></td>
<td></td>
<td></td>
<td>5.12</td>
<td>4</td>
<td>.275</td>
</tr>
<tr>
<td>Commercial</td>
<td>65 (51.6)</td>
<td>63 (57.8)</td>
<td>128 (54.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>56 (44.4)</td>
<td>45 (41.3)</td>
<td>101 (43)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>2 (1.6)</td>
<td>0 (0)</td>
<td>2 (0.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3 (2.4)</td>
<td>1 (0.8)</td>
<td>4 (1.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td></td>
<td></td>
<td></td>
<td>.303</td>
<td>1</td>
<td>.582</td>
</tr>
<tr>
<td>Primpara</td>
<td>53 (42.1)</td>
<td>42 (38.5)</td>
<td>95 (40.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipara</td>
<td>73 (57.9)</td>
<td>67 (61.5)</td>
<td>140 (59.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delivery</strong></td>
<td></td>
<td></td>
<td></td>
<td>.537</td>
<td>1</td>
<td>.464</td>
</tr>
<tr>
<td>Vaginal</td>
<td>87 (69)</td>
<td>80 (73.4)</td>
<td>167 (71.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-section</td>
<td>39 (31)</td>
<td>29 (26.6)</td>
<td>68 (28.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12) were African American, 6.4% \((n = 7)\) were Hispanic, none identified themselves as non-Hispanic, and 4.6% \((n = 5)\) did not answer their ethnicity. The majority of patients had commercial insurance \((57.8\%, n = 63)\), 41.3% \((n = 45)\) had Medicaid, none had Medicare, and 0.8% \((n = 1)\) had no insurance. Of the post intervention group, 38.5% \((n = 42)\) were first time mothers, while 61.5% \((n = 67)\) were multiparas. Of the group, 73.4% \((n = 80)\) had vaginal births and 26.6% \((n = 29)\) had cesarean sections. These findings can be found on Table 4.1.

**Group comparison.** Pre and post intervention group characteristics were compared using chi-square and t-test analyses. No significant differences between groups were noted for race \(\chi^2(4) = 2.88, p = .577\), insurance \(\chi^2(4) = 5.122, p = .275\), parity \(\chi^2(1) = .303, p = .582\) or delivery \(\chi^2(1) = .537, p = .464\). Results can be found on Table 4.2. Independent sample t-tests were calculated to examine the variables of age \((t(233) = -1.167, p > .05)\) and LOS \((t(233) = .730, p > .05)\) and no significant differences between groups were identified (see Table 4.1). The mean LOS for pre intervention group \((M = 2.67, SD = .989)\) was not significantly different from the mean LOS for the post intervention group \((M = 2.58, SD = .852)\). The mean age for pre intervention group \((M = 26.39, SD = 5.07)\) was not significantly different from the mean age post intervention group \((M = 26.5, SD = 5.54)\).

**Changes in Outcomes**

**Vaccine acceptance.** To answer the PICOT question “In postpartum mothers, what is the effect of nursing education and implementation of a revised Tdap postpartum policy that includes a patient education component and standardization of vaccine delivery on the Tdap vaccine acceptance rate over a three month period” a chi-square test for independence was performed. There was a significant difference in Tdap vaccine acceptance between postpartum mothers in the pre group as compared to the post group. The pre group acceptance rate was 11.1% \((n = 14)\). The post group acceptance rate was 65.1% \((n = 71)\). The percentage of acceptance can be found in Figure 4.1. Chi square of independence analysis
Figure 4.1 Vaccine Acceptance

Pre Intervention, 11.10
Post Intervention, 65.10
revealed a significant difference ($\chi^2(1) = 68.93$, $p = .000$). Mothers who received the education during admission accepted the vaccine significantly more than mothers prior to implementation of the EBP project. The chi square analysis can be found on Table 4.3.

**Vaccine documentation.** As displayed in table 4.4, chi square analysis revealed a significant difference in the number of patients that had Tdap education documented by nurses ($\chi^2(1) = 41.280$, $p = .000$). None of the mothers in the pre intervention group had vaccine education documented by the nurses as compared to the post group where 13.2% ($n = 31$) of the mothers had the education documented.

**Secondary outcomes**

To determine if there were relationships between the variables of race, insurance, parity, and delivery method with Tdap vaccine acceptance, phi coefficients were calculated. Weak correlations that were not significant were found between race and vaccine acceptance ($\phi = .111$, $p = .577$), insurance and vaccine acceptance ($\phi = .148$, $p = .275$), parity and vaccine acceptance ($\phi = .036$, $p = .582$), and delivery method and vaccine acceptance ($\phi = -.048$, $p = .464$). Phi coefficients are displayed in table 4.5. To determine if age or length of stay were related to vaccine acceptance, point biserial correlations were performed. There was no relationship between patient age and vaccine acceptance ($'pb = -.016$, $p = .809$) or LOS and vaccine acceptance ($'pb = .003$, $p = .963$). Point biserial correlations are displayed in Table 4.6.
Table 4.3

Vaccine Acceptance

<table>
<thead>
<tr>
<th></th>
<th>Pre n (%)</th>
<th>Post n (%)</th>
<th>$X^2$</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine acceptance</td>
<td>16 (11.1)</td>
<td>71 (65.1)</td>
<td>68.93*</td>
<td>1</td>
<td>.000</td>
</tr>
</tbody>
</table>

*p < .05
Table 4.4

**Education Documentation**

<table>
<thead>
<tr>
<th></th>
<th>Pre n (%)</th>
<th>Post n (%)</th>
<th>Total N</th>
<th>$X^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation</td>
<td>0 (0)</td>
<td>31 (28.4)</td>
<td></td>
<td>41.280*</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>No Documentation</td>
<td>126 (100)</td>
<td>78 (71.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$
Table 4.5

*Phi Coefficients for Demographic Characteristics and Vaccine Acceptance*

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>$\phi$</th>
<th>$p$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>.111</td>
<td>.577</td>
</tr>
<tr>
<td>Insurance</td>
<td>.148</td>
<td>.275</td>
</tr>
<tr>
<td>Parity</td>
<td>.036</td>
<td>.582</td>
</tr>
<tr>
<td>Delivery</td>
<td>-.048</td>
<td>.464</td>
</tr>
</tbody>
</table>
Table 4.6

*Point Biserial Correlations for Demographic Characteristics and Vaccine Acceptance*

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>rpb</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.016</td>
<td>.809</td>
</tr>
<tr>
<td>LOS</td>
<td>.003</td>
<td>.963</td>
</tr>
</tbody>
</table>
Table 4.7

*Point Biserial Age and LOS*

<table>
<thead>
<tr>
<th></th>
<th>pb</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.016</td>
<td>.809</td>
</tr>
<tr>
<td>LOS</td>
<td>.003</td>
<td>.963</td>
</tr>
</tbody>
</table>
CHAPTER 5
DISCUSSION

The purpose of an EBP is to answer a clinical question, while the goal is to determine information (Schmidt, 2012, p.283). The purpose of this EBP project was to determine if nursing education and implementation of a revised Tdap postpartum policy, that included a patient education component and standardization of vaccine delivery affected the Tdap vaccine acceptance rate among postpartum women.

Explanation of Findings

Implementation of a revised Tdap policy significantly increased the acceptance of Tdap vaccines among postpartum women. The overall Tdap vaccine acceptance prior to implementation was 11.1%. After implementation, vaccine acceptance increased to 65.1%.

One of the largest contributors to increasing the vaccine acceptance rate among postpartum mothers was education of the nurses. The nurses did not realize the risk of pertussis transmission from mother to baby or how critically ill an infant could become when infected with pertussis. Education of the nurses reinforced the importance of educating the patients about the Tdap vaccine and helped the nurses understand how they could influence a positive outcome. This finding is consistent with Jackson (2008) who also showed that educating providers increases vaccinations of adults and decreases infant pertussis cases.

Not only did educating the nurses about the vaccine increase vaccine acceptance, but educating the mothers also facilitated acceptance of Tdap vaccine among postpartum mothers. When the mothers were educated about pertussis prevention, they were more likely to accept the vaccine. In a non-experimental descriptive study, Cheng et al. (2010) aimed to determine what factors influence postpartum mothers to receive the Tdap vaccine. Researchers found relying on personal recollection of Tetanus Diphtheria (Td), when their last Td vaccine was, cause less mothers to receive the vaccine. Those who declined the Tdap vaccine thought
themselves and their babies were at low risk of getting pertussis, thus Cheng et al. (2010) concluded to help increase the acceptance of the vaccine, women of childbearing age should be educated on the risk of infants contracting pertussis and on ways to prevent the disease. Once the nurses were reeducated on the importance of the vaccine, they were then able to educate the mothers. For three months prior to educating the nurses, the acceptance of Tdap vaccine among postpartum mothers was only 11.1%, the three month period after education reflected an acceptance of 65.1%.

In addition to education about the Tdap vaccine, the nurses were educated about the importance of documenting Tdap vaccine education of the mothers. The nurses used the Tdap VIS form as an educational handout. This form was developed by the CDC to educate people about specific vaccines. Documentation of vaccine education given was a struggle for the nurses at first. During the initial education sessions, documentation of the vaccine was addressed broadly. Documentation was not addressed in detail because the nurses had been previously documenting other vaccine education in the EMR. The documentation for all nursing education in the EMR is very similar, whether it is about a vaccine, procedure performed, or medication. The documentation for the nursing education in the EMR has education sets built in for the nurses to use as reminders and guidance for the education. Therefore it was assumed the nurses already knew how to document education. After implementation of the project, it was apparent that some nurses did not know how to properly document the vaccine education in the EMR.

During the first month of implementation, only four (11.8%) charts had vaccine education documented. A plan was then formulated to address the lack of documentation. The unit manager sent out an e-mail reminding the nurses of the Tdap documentation procedure which included how and where to document the information. During the second month, 13 (31.7%) charts included proper documentation of the vaccine. Halfway through the second
month, another e-mail reminder was sent out. After the second month of low education documentation, an intervention holding each nurse accountable for documentation was implemented. Patient charts that did not have the properly documented vaccine education were reported to the unit manager. The unit manager held each nurse accountable for his or her actions by addressing them individually, instead of addressing the entire group. According to Gabel (2001), it is helpful to speak with and explain to individuals or small groups within the organization about specific issues and the decisions made as it relates to them personally, instead of large groups or issues they cannot relate to personally. During the third month, 15 (44.8%) charts had proper vaccine education documentation. Month to month comparison of vaccine education documentation can be seen in Figure 5.1. Overall, holding each nurse accountable and addressing each one individually helped increase the documentation of vaccine education.

**HBM Theoretical Framework**

The HBM is one of the most commonly used conceptual frameworks for health promotion and health education (Hayden, 2009). Both health promotion and health education are key components for vaccine acceptance among postpartum mothers. The HBM model worked well as a guide and framework for this EBP project. The HBM attributes health behavior changes to the initiation of readiness for action. The nurses on the OB unit helped prepare the postpartum mothers for this action to receive the Tdap vaccine.

**Seriousness.** In this EBP project, the nurses helped the mothers understand the severity of pertussis. It was critical to the project not only to educate the mothers, but to educate the nurses about the severity of pertussis. In the training sessions, nurses were shocked to discover the severity of pertussis outcomes in infants younger than 1 year of age. Educating nurses about the dire consequences of pertussis motivated them to educate the
Figure 5.1 Documentation of Vaccine Education

![Graph showing the documentation of vaccine education in different months.

- October: 11.8%
- November: 31.7%
- December: 44.8%]
mothers and fathers and increased mothers’ acceptance of the vaccine. Roden (2004) also found that nurses can facilitate health promotion using the HBM model. In their study they also showed there is a need for nurses and their ability to help with health promotion practice. The study concluded that families from lower socioeconomic groups were less able to receive health promotion and education from nurses that those from higher socioeconomic status. If the nurses were able to provide health promotion and illness prevention to all socioeconomic groups, parents would put more priority in activities that would improve children’s health (Roden, 2004).

**Susceptibility.** Rosenstock et al. (1974) showed that one’s likelihood to engage in a preventative health behavior depends not only on severity, but also susceptibility. A second author Carolyn (2011) performed a study to see if using patient education based on HBM would increase the likelihood of patients adopting a recommendation to wear graduated elastic compression stockings (GECS) for prevention of post-thrombotic syndrome (PTS). Researchers found that educating the patients about wearing stockings to reduce the risk of DVT increased the likelihood of patients wearing stockings. When the nurse gave each mother admitted to the unit education on the vaccine, mothers learned how susceptible they were to getting the disease, and passing it onto their infant. Once the mothers understood how easy it was to pass pertussis to their newborn child, without even knowing they have the disease, it helped to increase the mother’s acceptance of the vaccine.

**Perceived benefits.** By educating postpartum mothers admitted to the unit about the susceptibility and seriousness of pertussis, the nurses helped the mothers understand the perceived benefits of the vaccine. Roden (2004) demonstrated that each mother must understand and perceive the vaccine will offer a positive benefit. Each mother was able to understand the positive benefit of the vaccine, which impacted the vaccine acceptance among postpartum mothers.
Perceived barriers. For the mothers to accept the vaccine, it was important they understood that the benefits of receiving the vaccine outweighed the risks. They also had to overcome barriers that could stop them from receiving the vaccine. Barriers are affected by three different key concepts (a) variables, (b) action cues, and (c) self-efficiency (Glanz, Rimer, & Viswanat, 2008).

Each perception can be modified by different variables and can influence personal perceptions and thoughts. Variables that could have influenced vaccine acceptance among postpartum mothers included age, race, LOS, parity, type of delivery, and insurance. Correlational analysis determined that there was no relationship between any of these variables and the acceptance of the Tdap vaccine among postpartum mothers.

In previous research studies using the HBM model, actions cues were utilized as reminders (i.e., poster or pictures) for patients. In this EBP project, the action cues were directed at the nurses instead of the patients. Signs in the nursing station, medication room, and break room were action cues reminding nurses to offer the vaccine. Other action cues aimed at nurses were email reminders about the vaccine and importance of vaccine education documentation. The email reminders increased the vaccine education documentation by the nurses. The signs also prompted the nurses to offer the vaccine to their patients. Action cues were also used with the patients, one on one patient education about the vaccine, and an educational handout.

The third and final key component of the HBM model is self-efficiency. Self-efficiency was not addressed in this EBP project. No intervention used during implementation of the project focused on self-efficiency. The project implementation did not require the mothers to make long-term changes, nor require them to make action changes continuously, which are key components to self-efficiency.
Some researchers have identified the main weakness of the HBM as inconsistency in predicting behaviors (National Institute for Health and Clinical Excellence, 2007). Most of the research on the HBM focuses directly on the four perceptions of the model and results regarding the ability of the perceptions to predict behavior are not always consistent. Lack of research on specific components of the model has been noted by researchers (Eisen, Zellman, & MacAlister, 1992; Roden, 2004). A limitation of using the HBM model to guide this EBP project was the lack of details provided by previous researchers. Typically authors described the model and how they used it, but authors failed to discuss research findings related to the HBM.

Overall the HBM model worked well for the EBP project. The model allows for successful implementation of health promotion and education. The nurses were an important component in promoting the health of each mother and in turn the health of the infants. The nurses providing education to the mothers promoted the health and wellbeing of not only the mother, but also the baby. The nurses successfully used the seriousness of the disease to help motivate the postpartum mother to receive the vaccine. They addressed the susceptibility component of the HBM by ensuring the mothers realized their susceptibility in contracting the disease and transmitting it to their infant. Once the mothers understood how easy it was to infect their newborn, mothers elected to accept the vaccine. The nurses also successfully helped the mother realize the benefits of the vaccine and overcome barriers to vaccine acceptance. The HBM model was a great fit for the EBP project. It allowed the nurses to increase the acceptance rate among postpartum mothers by using each component of the model.

**JHNEBPM Model**

The JHNEBPM uses the three stages of the PET process to translate evidence into practice, (a) practice question, (b) evidence, and (c) translation. The EBP project began with
developing a practice question. The practice question developed was, “insert question here.” Stiller (2011) identified that pertussis is being unknowingly transmitted from close family members to infants. ACIP strongly recommends the use of pertussis vaccine in postpartum mothers to decrease the transmission of pertussis to infants (Clark et al., 2006). The second stage of the process, evidence, consisted of conducting a systematic review of the literature. During the third stage, translation, administering the Tdap vaccine to postpartum women on the OB unit was determined feasible and the main outcome to monitor was identified, Tdap vaccine acceptance rate of postpartum women.

“Initial response to JHNEBP model has been positive by researchers, but since its inception in 2001, minimal research on the model has been conducted (Otten, 2008; Crawford, 2009). The JHNEBPM worked well for this EBP project. The framework guided the actual process of the EBP project. It allowed for the clinical question to be translated into practice. The model facilitated the development of the practice question. The evidence stage was very useful in appraising the literature. The tools associated with the model addressed the level and quality of each piece of evidence. Successful synthesis of the evidence was performed and practice recommendations where developed for the EBP project. The overall use of the JHNEBPM was a great fit for this EBP project; it facilitated the translation of evidence into practice.

**Strengths of the EBP project**

The willingness of the nurses to participate, the support from management, and a strong project leader were major strengths of the project. The nurses were not only willing to help make a change, but they were motivated to implement the change. Education about the effects of pertussis on the infant motivated the nurses to implement the EBP project. The motivation process begins when an individual notices a deficit within themselves (Burns, Bradley, & Weiner, 2012). The nurses were motivated to implement the change by facilitating
patient education and thus impacting Tdap vaccine acceptance. When the nurses were willing
to facilitate the change, it was much easier for that change to occur. The nurses are
stakeholders in the organization. A stakeholder is a person or group of people who are affected
by your ideas and for change in an in any organization to occur, stakeholders must be vested
in that change (Burns, Bradley, & Weiner, 2012, p.167). In a study done by Roussel et al.
(2012) to determine how nurses (stakeholders) commit to effecting change. Researchers found
that stakeholder’s are more willing to adapt and implement change when they are able to see
the change and understand the change that is occurring.

Project support from the unit manager and the Chief Nursing Officer (CNO) also
influenced the nursing staff and facilitated the project. According to Burns et al. (2012) studies
need the support of administrative and clinical leadership for the success of organizational
change. Nurse leaders have to face the challenges of taking their team through uncertainty
with change (Salmela, Eriksson, & Fagerstrom, 2012). In a qualitative study by Salmela,
Eriksson, and Fagerstrom (2012), researchers aimed to describe nurse leaders’ perceptions of
their role in change. They showed nurse leaders play important roles in change by directing,
guiding, motivating, supporting, and communicating with their staff (Salmela et al., 2012). The
unit manager was a key player to the success of this project. The manager helped guide,
educate, remind, and implement the policy change. She was the key person that held the
nurses accountable for their actions. Change is much easier to implement when management
is prepared, supportive, and communicates with their staff during change.

Evidence has shown nurses may have difficulty implementing new knowledge into
clinical practice (Buonocore, 2004). APNs have advanced clinical training and advanced
knowledge of the change process, which allows them to be perfect agents of change
(Buonocore, 2004). The APN guided the project through all phases, the evidence search and
appraisal, Tdap policy revision, and educational training of nurses. The APN established
credibility with the nursing staff by providing a revised policy based on the best evidence and an organized plan for implementation. Having expertise allows for the APN to have the power to be a great change agent. Change is needed within an organization to improve patient outcomes and improve patient care (Buonocore, 2004).

**Weakness of EBP**

One limitation of this EBP project was the lack of knowledge of EBP among nurses. When the nurses were in the education sessions before implementation of the project, they appeared very uncomfortable discussing EBP. Once the project was fully explained and the nurses better understood the project, they were more at ease. Several barriers have been identified which prevent the use of EBP among nurses. Two of the barriers are time constraints and lack of confidence with research utilization skill (Drenning, 2006). In the training sessions, there was a wide range of experience among nursing staff. Some of the staff had numerous years and some were newer graduates. One weakness of veteran nurses is the lack of education of EBP. When someone is unfamiliar with the topic at hand, they usually are more uncomfortable accepting it and allowing for change. The various levels of education and experience of nurses within a unit can be a weakness. A study done by Estabrooks et al. (2005) showed hospitals that had a higher ratio of baccalaureate degree prepared nurses and a richer skill mix had a lower 30 day mortality rate. Therefore, the higher the education and skill levels of the nurses, the better the outcomes for the patients.

Another weakness for the EBP project was the organizational structure of the system where the EBP project was performed. There are a number of hospital facilities within the organizational system where the EBP project was implemented. Approval of the EBP project required, not only hospital approval, but organizational approval. Communicating project ideas at times was difficult. The different levels of the organization did not always agree with each other and thus, the approval process was time consuming.
One of the main problems with multiple organizational levels is potential miscommunication between the various levels. In the initial phases of approval to implement the EBP project, the unit manager wanted to implement a written consent, but when attempting to gain organizational approval, it was discovered that the organization, as a whole, was not supportive of implementing consents for vaccines. This was a lack of communication between the upper administration and the unit manager. All communication was written as opposed to face to face meetings. When organizations do not have good communication within all layers of the organization, then miscommunication occurs and problems arise.

**Implications for the Future**

Change is always a struggle within organizations. It is important that advance practice nurses and staff nurses work together to support change within an organization. The burden of EBP implementation should not fall on one person or discipline, but should be shared with nurses involved in direct patient care, practitioners, the unit manager, and those in clinical research (Drenning, 2006). It is imperative that both nurses and APNs work together to ensure more patients receive Tdap vaccines by educating patients both on OB units and in doctors’ offices. APNs can guide nurses on EBP practices and help increase positive outcomes for patients. Combining the skills of nurses and APNs, can facilitate change in clinical practice to improve patient outcomes (Drenning, 2006). The APN can begin the education process with the patient during an office or outpatient visit, and the nurse can reinforce the education once the patient is admitted to the hospital. APNs can continue to teach the patients with the nurses within the hospital setting as well. The nurse can also refer those patients that need extra education to the APN in the inpatient setting.

Overall, further research is needed to determine best practice guidelines for increasing Tdap acceptance among postpartum mothers. More research should be conducted to determine the efficacy of Tdap vaccine administration during pregnancy. Currently, the
recommendations are for the vaccine to be given before pregnancy occurs, immediately postpartum, or during pregnancy in cases when benefits outweigh risks. There currently is ongoing research to determine exactly when the Tdap vaccine should be given during pregnancy. Methods of Tdap vaccine implementation within hospitals is another area needing further research. There are no recommendations on the best way to implement these programs. Researchers should compare implementation methods of hospital-based vaccine programs and evaluate which program results in the best outcomes for patients. The original hospital Tdap policy that was implemented on the OB unit did not focus on educating the nursing staff prior to implementation and the policy was not followed. Implementation of the revised policy focused on educating the nurses and staff of the OB unit on the new policy before implementation, which showed a significant increase in the nurses administering the vaccine immediately postpartum. Educating the postpartum mothers on the vaccine will increase the acceptance rate of Tdap vaccines and in turn decrease the transmission of pertussis to infants. It is imperative for hospitals, doctors’ offices, and nursing schools to educate all nurses, APNs, and physicians on the importance of vaccination against pertussis.

**Conclusion**

APNs play a key role in implementing EBP within an organization. Not all evidence will work successfully in every setting. Determining translation of the evidence and the support of the organization will help allow for change. Increasing the acceptance rate of Tdap vaccine among postpartum mothers was supported by educating the nurses before implementing the revised Tdap policy and educating the patients on the Tdap vaccine. To have a successful change in an organization, the organization needs strong leadership, change agents, organizational support, and willingness of staff to allow for change.
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Mrs. Burns-Scharnke graduated from Indiana University Purdue University Indianapolis (IUPUI) with a Bachelor of Science in Biology in 2003. While attending IUPUI she obtained her EMT-B certification. She worked as a Chemist in 2004 for Microbac Laboratories and also worked as an EMT-B from 2004-2006 for Superior Ambulance, while continuing her education in nursing. In 2005, she did relief work as an EMT-B for Hurricane Katrina victims in Louisiana. Amie received her Bachelor of Science in Nursing from Purdue University Calumet in 2006. She worked full time as an ER nurse and continued her education at Purdue University Calumet for her Master of Science and Family Nurse Practitioner, which she achieved in 2008. Since 2008, she has been practicing as a Family Nurse Practitioner in several different clinical and hospital settings and is certified through the ANCC. Mrs. Burns-Scharnke worked full time for Takecare clinic as a FNP and was clinic coordinator from 2008-2011, and continues to work PRN. Currently, she is employed at Franciscan in Dyer as a Nurse Practitioner. She has also works as an International Medical Escort for AXA insurance. Mrs. Burns-Scharnke has been a preceptor for several nurse practitioner students and also teaches clinical for Valparaiso University, College of Nursing. Currently, she is a student in Valparaiso University’s Doctor of Nursing Practice program with an estimated date of completion of May, 2013. Amie is a member of Sigma Theta Tau International. Currently, Amie is working to help create a palliative care resource for the local area and community.
ACRONYM LIST

ACIP: According to the Advisory Committee on Immunization Practices
APN: Advanced Practice Nurse
CDC: Centers for Disease Control
CINAHL: Cumulative Index to Nursing and Allied Health Literature
CNO: Chief Nursing Officer
EBP: Evidence Based Practice
GECS: Graduated Elastic Compression Stockings
HBM: Health Belief Model
IRB: Institution Review Board
JBI: the Joanna Briggs Institute Clinical Online Network of Evidence for Care and Therapeutics
JHNEBPM: John Hopkins Nursing Evidence-Based Practice Model
LOS: Length of stay
PTS: Post-thrombotic syndrome
Td: Tetanus Diphtheria
Tdap: Tetanus, Diphtheria and Pertussis
Appendix A

Tdap Policy

Purpose: To meet the Advisory Committee on Immunization Practices (ACIP) guidelines for Tdap vaccinations for postpartum patients. The ACIP is an advisory committee to the Centers for Disease Control and Prevention (CDC).

General Information:

1.0 Upon admission to the unit, Tdap vaccine status will be evaluated on all OB patients. If no contraindications exist, the Tdap (Tetanus, diphtheria and pertussis) vaccine will be offered to those who have not had the Tdap vaccine in the last 2 years.

2.0 Contraindications to Tdap include:
   - 2.1 A previous immunization of Tdap within the last two years
   - 2.2 Allergy to components of the vaccine

3.0 All Patients will receive teaching about the vaccine upon admission to the unit.

4.0 The Vaccine Information Sheet (VIS) entitled, “Td or Tdap (tetanus-diptheria or tetanus-diphtheria-pertussis) Vaccine: What You Need to Know” will be provided to all patients.

5.0 Tdap dose is 0.5 ml IM and is a onetime dose.

6.0 The vaccine will be taken into the delivery area and administered during the immediate postpartum period.
Appendix B

Vaccine Information Sheet

VACCINE INFORMATION STATEMENT

Td or Tdap (Tetanus-Diphtheria or Tetanus-Diphtheria-Pertussis) Vaccine

What You Need to Know

1. Why get vaccinated?
   Tetanus, diphtheria and pertussis can be very serious diseases.
   TETANUS (Lockjaw) causes painful muscle spasms and stiffness, usually all over the body.
   • It can lead to tightening of muscles in the head and neck so the victim cannot open his mouth or swallow, or sometimes even breathe. Tetanus kills about 1 out of 5 people who are infected.

   DIPHTHERIA can cause a thick membrane to cover the back of the throat.
   • It can lead to breathing problems, paralysis, heart failure, and even death.
   PERTUSSIS (Whooping Cough) causes severe coughing spells which can lead to difficulty breathing, vomiting, and disturbed sleep.
   • It can lead to weight loss, incontinence, rib fractures and passing out from violent coughing. Up to 2 in 100 adolescents and 5 in 100 adults with pertussis are hospitalized or have complications, including pneumonia and death.

   These three diseases are all caused by bacteria. Diphtheria and pertussis are spread from person to person. Tetanus enters the body through cuts, scratches, or wounds.

   The United States saw as many as 200,000 cases a year of diphtheria and pertussis before vaccines were available, and hundreds of cases of tetanus. Since then, tetanus and diphtheria cases have dropped by about 99% and pertussis cases by about 92%.

   Children 6 years of age and younger get DTaP vaccine to protect them from these three diseases. But older children, adolescents, and adults need protection too.

2. Vaccines for adolescents and adults: Td and Tdap

   Two vaccines are available to protect people 7 years of age and older from these diseases:
   • Td vaccine has been used for many years. It protects against tetanus and diphtheria.
   • Tdap vaccine was licensed in 2005. It is the first vaccine for adolescents and adults that protects against pertussis as well as tetanus and diphtheria.

   A Td booster dose is recommended every 10 years. Tdap is given only once.

3. Which vaccine, and when?

   Ages 7 through 18 years
   • A dose of Tdap is recommended at age 11 or 12. This dose could be given as early as age 7 for children who missed one or more childhood doses of DTwP.
   • Children and adolescents who did not get a complete series of DTwP shots by age 7 should complete the series using a combination of Td and Tdap.

   Age 18 years and Older
   • All adults should get a booster dose of Td every 10 years. Adults under 65 who have never gotten Tdap should get a dose of Tdap as their next booster dose. Adults 65 and older may get a booster dose of Tdap.
   • Adults (including women who may become pregnant and adults 65 and older) who expect to have close contact with a baby younger than 12 months of age should get a dose of Tdap to help protect the baby from pertussis.
   • Healthcare professionals who have direct patient contact in hospitals or clinics should get one dose of Tdap.

   Protection After a Wound
   • A person who gets a severe cut or burn might need a dose of Td or Tdap to prevent tetanus infection. Tdap should be used for anyone who has never had a dose previously. Td should be used if Tdap is not available, or for:
     - anybody who has already had a dose of Tdap,
     - children 7 through 8 years of age who completed the childhood DTwP series, or
     - adults 65 and older.

   Pregnant Women
   • Pregnant women who have never had a dose of Tdap should get one, after the 20th week of gestation and preferably during the 3rd trimester. If they do not get Tdap during their pregnancy they should get a dose as soon as possible after delivery. Pregnant women who have previously received Tdap and need tetanus or diphtheria vaccine while pregnant should get Td.

   Tdap or Td may be given at the same time as other vaccines.

4. Some people should not be vaccinated or should wait

   • Anyone who has had a life-threatening allergic reaction after a dose of any tetanus, diphtheria, or pertussis containing vaccine should not get Td or Tdap.
   • Anyone who has a severe allergy to any component of a vaccine should not get that vaccine. Tell your doctor if the person getting the vaccine has any severe allergies.
   • Anyone who had a coma, or long or multiple seizures within 7 days after a dose of DTP or DTaP should not get Tdap, unless a cause other than the vaccine was found. These people may get Td.
• Talk to your doctor if the person getting either vaccine:
  - has epilepsy or another nervous system problem,
  - had severe swelling or severe pain after a previous dose of DTaP, DTap, DT, Td, or Tdap vaccine, or
  - has had Guillain–Barre Syndrome (GBS).

Anyone who has a moderate or severe illness on the day the shot is scheduled should usually wait until they recover before getting Tdap or Td vaccine. A person with a mild illness or low fever can usually be vaccinated.

5 What are the risks from Tdap and Td vaccines?

With a vaccine, as with any medicine, there is always a small risk of a life-threatening allergic reaction or other serious problem.

Brief fainting spells and related symptoms (such as jarring movements) can happen after any medical procedure, including vaccination. Sitting or lying down for about 15 minutes after vaccination can help prevent fainting and injuries caused by falls. Tell your doctor if the patient feels dizzy or light-headed, or has vision changes or ringing in the ears.

Getting tetanus, diphtheria, or pertussis disease would be much more likely to lead to serious problems than getting either Td or Tdap vaccine.

Problems reported after Td and Tdap vaccines are listed below.

Mild Problems
(Noticable, but did not interfere with activities)

Tdap
- Pain (about 3 in 4 adolescents and 2 in 3 adults)
- Redness or swelling at the injection site (about 1 in 5)
- Mild fever of at least 100.4°F (up to about 1 in 25 adolescents and 1 in 100 adults)
- Headache (about 4 in 10 adolescents and 3 in 10 adults)
- Tiredness (about 1 in 3 adolescents and 1 in 4 adults)
- Nausea, vomiting, diarrhea, stomach ache (up to 1 in 4 adolescents and 1 in 10 adults)
- Chills, body aches, sore joints, rash, swollen glands (uncommon)

Td
- Pain (up to about 8 in 10)
- Redness or swelling at the injection site (up to about 1 in 3)
- Mild fever (up to about 1 in 15)
- Headache or tiredness (uncommon)

Moderate Problems
(Interfered with activities, but did not require medical attention)

Tdap
- Pain at the injection site (about 1 in 20 adolescents and 1 in 100 adults)
- Redness or swelling at the injection site (up to about 1 in 16 adolescents and 1 in 25 adults)
- Fever over 102°F (about 1 in 100 adolescents and 1 in 250 adults)
- Headache (1 in 300)
- Nausea, vomiting, diarrhea, stomach ache (up to 3 in 100 adolescents and 1 in 100 adults)

Td
- Fever over 102°F (rare)
- Tdap or Td
  - Extensive swelling of the arm where the shot was given (up to about 3 in 100).

Severe Problems
(Unable to perform usual activities; required medical attention)

Tdap or Td
- Swelling, severe pain, bleeding and redness in the arm where the shot was given (rare).

A severe allergic reaction could occur after any vaccine. They are estimated to occur less than once in a million doses.

6 What if there is a severe reaction?

What should I look for?
Any unusual condition, such as a severe allergic reaction or a high fever. If a severe allergic reaction occurred, it would be within a few minutes to an hour after the shot. Signs of a severe allergic reaction can include difficulty breathing, weakness, hives, nausea, vomiting, diarrhea, stomach ache, swelling of the face, lips, tongue, or throat.

What should I do?
- Call a doctor, or get the person to a doctor right away.
- Tell your doctor what happened, the date and time it happened, and where the vaccination was given.
- Ask your provider to report the reaction by filing a Vaccine Adverse Event Reporting System (VAERS) form. Or you can file this report through the VAERS website at www.vaers.hhs.gov. or by calling 1-800-822-7967.

VAERS does not provide medical advice.

7 The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) was created in 1986. Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling 1-800-338-2382 or visiting the VICP website at www.hrsa.gov/vaccinecompensation.

8 How can I learn more?

- Your doctor can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call 1-800-232-4636 (1-800-CDC-INFO) or
  - Visit CDC’s website at www.cdc.gov/vaccines

Vaccine Information Statement (interim)

Td & Tdap Vaccines

1/24/2012

42 U.S.C. § 300aa-26
Appendix C

Nurses Information Sheet

Pertussis

Why is Tdap important?

In 2009, there were more than 16,000 cases of pertussis in infants less than 6 month of age (National Network for Immunizations and Information, 2011).

50 out of every 10,000 children less than one who develop pertussis will die from it!

In June 2011 to June 2012 the unit administered 59 vaccines.

What can we do?

We can help stop the spread of pertussis by vaccination. The CDCs “primary goal of pertussis outbreak control efforts is to decrease morbidity (amount of disease) and mortality (death) among infants; a secondary goal is to decrease morbidity among persons of all ages”.

ACIP recommends administration of Tdap immediately postpartum.

Project implementation

First, educate the patient on the importance of the vaccine and what it is, using the CDC VIS upon admission to the OB unit. Document patient teaching and receiving the VIS form in the EMR.

Next upon patient going into active labor, take vaccine into patient’s room and administer the vaccine as soon as possible postpartum.

Finally, document administration of vaccine in EMR. If patient does not want the vaccine, then state why they do not want the vaccine.