

**DNP PROJECT:**

Increasing the Rate of Patient Education Regarding Maternal Postpartum Complications in  
Hospital Affiliated Outpatient Obstetric/Gynecologic clinics

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### **Abstract**

There are mothers today that are experiencing symptoms post-partum but will not report them to their health care providers for fear of overreacting or because they do not recognize the dangers of these signs (Preeclampsia Foundation, 2022). This inability to recognize warning signs for postpartum complications or the hesitancy to act on them can lead to increased adverse events for mother and baby. The point of this quality improvement project was to increase the awareness of postpartum complications by giving specific information about post birth warning signs to pregnant women. The review of literature identified that educational tools, handouts, videos, and counseling in the perinatal period increased knowledge retention of postpartum complications in mothers prenatally. An educational PowerPoint was developed to introduce and reeducate staff on the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) Post Birth Warning Signs handout, and why it should be utilized in clinics. Copies of the PowerPoint and the AWHONN Post Birth Warning Signs were made available to staff. An auditing tool was created for a retrospective chart audit to evaluate use of the educational tool five weeks post intervention and again three weeks post intervention.

*Key words:* post birth warning signs, postpartum symptoms, prenatal, AWHONN, educational tool, education

## **A DNP Project: Increasing the Rate of Patient Education Regarding Maternal Postpartum Complications in Hospital Affiliated Outpatient Obstetric/Gynecologic clinics**

In the United States each year millions of pregnant persons (which for the sake of conciseness will be referred to as women in this paper, however the authors understand that trans and nonbinary persons with uteruses give birth and we acknowledge them as birthing persons) give birth to healthy infants without complications; however, this is not the case for a growing number of women. Maternal morbidity is classified as any maternal death during pregnancy or within 42 days after completion of pregnancy (which includes live birth, still birth, spontaneous abortion, or abortion), has increased from 17.4 in 2018, to 20.1 in 2019, and again in 2020 to 23.8 (Centers for Disease Control and Prevention (CDC), 2022). In the CDC 2022 reported 861 maternal deaths in 2020 compared to 751 in 2019 (Hoyert, 2022). This data shows the incidence of persons in the United States who are suffering from postpartum complications that cause chronic disease, disability, or even lead to death, is increasing. The incidence of hypertensive disorders, postpartum hemorrhage, and pulmonary embolism are all increasing (2019). The data also indicated a huge disparity in those impacted, with black women and those over 40 years of age as having the highest risk of maternal morbidity when compared to their younger white counterparts. Black women were cited as having 2.9 times the risk of their White and Non-Hispanic counterparts of dying; and all women aged 40 and older, regardless of race, are 7.8 times more likely to die than their counterparts under 25 years of age (Hoyert, 2022).

Largely, these pregnancy complications and deaths are preventable. According to the World Health Organization (WHO), the main complications that account for 75% of all maternal mortality involve severe bleeding, infections, hypertensive complications, complications from delivery, and unsafe abortions (WHO, 2019). The WHO (2019) also addresses why many

women are prevented from or do not seek care for these conditions such as lack of information or education, poverty, distance to facilities, and inadequate services.

### **Problem Statement**

At the Maternal Fetal Medicine (MFM) High Risk OB/GYN and Women's Health (WH) clinics in Mid-Michigan a deficit in anticipatory guidance regarding prevention of these adverse outcomes has been identified by the practitioners working there (B. Burns-King NP, personal communication, 2022). Inconsistent post partum education is being provided to patients in this clinic about red flags for emergent situations that can occur postpartum. These experienced complications have been known to increase costs of healthcare, and damage the health, safety, and relationship of mother and baby.

### **Gap Analysis**

The cause-and-effect diagram, also known as an Ishikawa or "fishbone" diagram, is a visual tool used to explore and display the potential causes of a certain effect (Institute for Healthcare Improvement, 2020). A gap analysis using the fishbone diagram was used to analyze the rates of postpartum preeclampsia symptoms and complications (See Appendix B). Areas explored using the fishbone analysis were personnel, materials, and measurement (or lack thereof) of data collected on patient outcomes, current processes, systems, and the environment. Findings from the analysis included a lack of staff training, patient education, materials, time, staff engagement, and prioritization of women's health during the postpartum period. All are core issues at the center of the "gap" in the MFM and WH clinics.

### **Clinical Site Description/ Project Site and Population**

MFM is a mid-western urban clinic that specializes in high-risk OB/GYN patients. MFM manages high risk prenatal patients such as those with gestational diabetes, multiparous pregnancies, advanced maternal age, and those with hypertensive disorders (Bridget Burns-King NP, personal communication, 2022). The health care team includes one doctor of obstetric (DO), two medical doctors (MD's) and one nurse practitioner (NP) as well as six registered nurses, three receptionists, one geneticist, one office manager, and one patient care technician (PCT). Although the clinic primarily follows women throughout pregnancy, they also continue to care for them postpartum for a brief period of time (data coming from the data analysts for the clinics). Following up regarding their transition out of pregnancy and the changes affecting their diabetes, hypertension, depression, etc. as well as inserting intrauterine devices (IUD's) and other forms of birth control. MFM manages its own base of high risk maternal and fetal clients and co-manages care of patients with other local OB/GYN clinics.

The MFM site has a partner clinic, which is a Women's Health (WH) clinic. WH is an office providing care to patients requiring routine GYN care and low-normal risk pregnancy management. Similar to the Maternal Fetal Medicine Clinic, they serve all pregnant persons, and provide their prenatal, and post-natal care. This office consists of five attending physicians, 12 resident physicians, one physician assistant (PA), one office manager, six registered nurses, and three receptionists.

Specific data about the populations served at the hospital affiliated clinics, MFM and WH, was not available to the DNP students and not listed on a public source, such as the clinic websites. However, state data was available to the DNP students. The Michigan Department of Health and Human Services (MDHHS) also includes the Michigan Pregnancy Risk Assessment Monitoring System (MI PRAMS) which reports maternal characteristics. In Michigan 33.3% of

pregnant women are 30-34 years old, 30% are 25-29 years old, and 18.6% are 20-24 years old, and then 12.4% are 34-39 years old (MDHHS, 2020). Maternal race in Michigan is primarily White at 66.8%, then Black at 18.7 %, and Hispanic at 6.3% (MDHHS, 2020). Most mothers in Michigan have a college degree, 31.4%, or some college, 29.1% (MDHHS, 2020). According to PRAMS report, the majority of pregnant persons have private insurance before pregnancy at 59.8% while 33.2% have Medicaid/Public insurance before pregnancy (MDHHS, 2020). This may be skewed by Medicaid eligibility requirements, which change once a person is pregnant and is more accessible to pregnant persons. March of Dimes (2022) states that 39.7% of births in Michigan were covered by Medicaid in 2020.

## **Review of the Literature**

### ***Search Strategies***

A literature review was performed to identify educational methods that have been effective to increase knowledge of postpartum complications. The databases used were PubMed and the Cumulative Index to Nursing and Allied Health Literature PLUS (CINAHL PLUS). Only articles based in the United States (U.S.) and less than 10 years ago were included in the review. Types of studies included retrospective cohort studies and randomized control trials. The keywords used through CINAHL PLUS were “postpartum complications” AND “preeclampsia” AND “education” which resulted in two articles; “maternal morbidity” AND “preeclampsia” AND “education” which resulted in three articles; “maternal mortality” AND “hypertension” AND “education” which resulted in 17 articles; “maternal mortality” AND “eclampsia” AND education which resulted in ten articles. In PubMed, the search was limited to randomized control trials, systemic reviews, or meta-analysis. The keywords “maternal mortality” AND “preeclampsia” AND “education” were repeated and resulted in 19 articles; also repeated were

key words “maternal morbidity” AND “preeclampsia” AND “education” which resulted in seven articles. Doctorate Nursing Practice (DNP) students analyzed the seven articles and four were chosen for the literature review.

### ***Selection Criteria***

These articles were selected with specific search criteria in mind. The studies had to be based in the United States, and in the English language. Another inclusion criterion involved a population which was specific to pregnant women, all others were excluded. Studies published greater than ten years ago were excluded. At the end of the literature review, a total of six articles (see Appendix C) were chosen. The main themes identified were educational tools that have been effective in increasing knowledge regarding postpartum complications. Three educational methods were identified for this review: preeclampsia education pamphlets/tools, a video, and counseling sessions.

### ***Effect of Education on Postpartum Complications***

**Use of an educational tool.** Three of the studies focused on different formats for education and the effect they would have on outcomes, healthy lifestyles, and understanding of complications. In the study by You et al., (2012) they used a newly developed preeclampsia educational tool, and a standard pamphlet on preeclampsia created by the American College of Obstetrics and Gynecology (ACOG) as the intervention. The newly developed tool included concepts of pre-eclampsia regarding signs and symptoms, potential consequences, and patient-initiated actions that should be taken if suspected. These key points were translated into graphics with simple text (You et al., 2017). The pamphlet by ACOG was similar and included an explanation of preeclampsia, warning signs, risk factors, and future health (ACOG, 2022). All

patients were given the same questionnaire regarding preeclampsia at two different time intervals (You et al., 2012). Initially the highest scores came from the group that received the new educational tool, however at the second testing the difference between the new tool and ACOG's standard pamphlet were insignificant (You et al., 2012). This new educational tool included graphics-based information, which is assumed to be the cause of the higher initial retention scores (You et al., 2012). Additionally, both educational tools were found to have significantly greater results than those who did not receive any education (You et al, 2012).

Another educational tool is the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) POST-BIRTH Warning Signs (PBWS) that helps educate postpartum persons and their families on the warning signs of a postpartum complication and when to seek care. The PBWS handout was created by AWHONN to ensure that all postpartum parents are empowered to recognize and act on signs of potentially life-threatening postpartum complications (AWHONN, 2021). This educational program aimed to prevent maternal morbidity and mortality in the United States. In Bowles et al., they recommend using this educational intervention in the perinatal period to increase receptiveness to the teaching versus in the postpartum period when mothers are exhausted and overwhelmed (2020).

**Use of educational video.** The study by Strassberg et al., (2022) compared the outcomes of receiving a graphic card, an educational video, and no intervention/routine care. The graphic card contained signs and symptoms of preeclampsia, after the education was complete patients were able to keep the card (Strassberg et al., 2022). The video focused on symptoms that all women should know could be dangerous in post-partum moms (Strassberg et al., 2022). Both tools were created by the Preeclampsia Foundation whose mission is to ensure that women are recognizing and reporting their symptoms post-partum (Preeclampsia Foundation, 2022). In this

article the survey was administered twice, and it was found that neither the graphic card nor the educational video was more effective at improving preeclampsia knowledge retention (Strassberg et al., 2022). The group that received routine counseling had the lowest increase in knowledge score, however the difference was not substantial (Strassberg et al., 2022). Based on this studies results, adult learners can benefit from the addition of visual education tools.

**Counseling Sessions.** In the third study by Ugurlu et al., (2021) four counseling sessions during pregnancy, one postpartum, and a preeclampsia booklet were received by the intervention group. The education provided in the counseling sessions included healthy lifestyle behaviors, self-efficacy, and maternal/ neonatal outcomes (Ugurlu et al., 2021). The counseling focused on ways to cope with stress, increase physical activity, and follow appropriate nutrition advice with the goal being to prevent preeclampsia and raise awareness in pregnant women (Ugurlu et al., 2021). The booklet included illustrations and simple language that defined pre-eclampsia, reviewed risk factors, possible effects on mother and fetus, and recommendations for prevention such as diet, rest, and exercise (Ugurlu et al., 2021). The pamphlet also provided education regarding how women could self-monitor any symptoms via checking blood pressure, weight, counting fetal movement, and edema (Ugurlu et al., 2021). After receiving both forms of teaching, there was no significant effect on self-efficacy scores, or those regularly monitored symptoms (Ugurlu et al., 2021). The intervention group did have an increase in healthy lifestyle behaviors including increases in physical activity and breathing exercises compared to the regular antenatal care group (Ugurlu et al., 2021).

## **Summary/Purpose**

Education prenatally is the most identified method for the prevention of complications and decrease in associated adverse outcomes in the postpartum period. The studies used had a wide variety of sample populations, sizes, and settings to better grasp how to help the majority of women. Each study reviewed utilized a different educational tool, and evaluated the effectiveness of different teaching modalities video, pamphlets, and counseling. In all four of the studies, a pamphlet or card with signs and symptoms of preeclampsia was utilized as a teaching modality used in all of the applicable studies reviewed for this project. Although a certain educational format was not found to be most effective, any form of education was found to benefit the patient compared to no education (You, 2012; Strassberg, 2022; Ugurlu, 2014). To decrease adverse outcomes and increase prompt diagnosis and care of pre-eclampsia, education on signs and symptoms is vital (You, 2012; Strassberg, 2022; Ugurlu, 2021)..

## **Methods**

### **Ethical Considerations and Protection of Human Subjects**

Michigan State University Internal Review Board (IRB) approval was obtained prior to initiating the DNP Project. Data was collected, deidentified and aggregated to assess the success of the intervention. Health Insurance Portability and Accountability Act (HIPAA) regulations were maintained. No protected health information was removed from the clinical setting. The IRB reviews protocols to ensure appropriate safeguards exist in a project proposal that will protect the rights and privacy of research subjects (Brigham Young University, (2022). An agency agreement letter was obtained from the project's MFM Community Agency Partner/Provider (CAPP), Bridget Burns-King-NP, on August 16, 2022 (Appendix H), and was submitted with the IRB application. A facility agreement letter was signed once the organization's clinical research institute administrative approval is granted. Prior to

implementing the intervention, the IRB carefully considered risks, benefits, and patients' right to privacy, and confidentiality before approval was granted. The official IRB Determination Form was submitted to the hospital affiliated Quality Improvement (QI) Office as soon as the IRB approved the proposal. The hospital QI Office approved the project on December 29, 2022.

### **Intervention and Data Collection Procedure**

#### **Intervention**

To improve outcomes of maternal health in the postpartum period, an educational resource was implemented into practice. After discussion with the CAPP, the AWHONN's PBWS handout (Appendix A) was picked to be utilized for staff dissemination and patient education. Although the AWHONN PBWS tool is intended for use at hospital postpartum discharge, childbirth educators can introduce the topic in the prenatal period when expectant parents are more receptive to information (Bowles et. al., 2020). After prolonged attention during pregnancy and birth, there is relatively little attention to the mother's health and well-being in the postpartum period (Bowles, et. Al., 2020). An educational PowerPoint was developed and presented to healthcare staff to reeducate and focus on using the PBWS handout in the perinatal period. See Appendix G for PowerPoint. Through healthcare staff implementation of the PBWS teaching tool, pregnant persons received education regarding signs and symptoms of complications post birth.

The 'POST-BIRTH' in AWHONN's PBWS handout is an acronym for the leading causes of maternal morbidity and mortality.

P: Pain in the Chest

O: Obstructed Breathing or Shortness of Breath

S: Seizures

T: Thoughts of hurting yourself or someone else

B: Bleeding, soaking through more than one pad per hour, or blood clots that are the size of an egg or larger

I: Incision that is not healing

R: Red or swollen leg, that is painful or warm to touch

T: Temperature of 100.4 F or higher

H: Headache that does not get better, even with medicine or that has vision changes with it.

(AWHONN, 2021)

This tool is free to the public and can be printed on a single sheet of paper. This tool is part of a paid educational program for providers that is offered by AWHONN and not made to be a standalone product, however, it is free for use if using the handout to educate patients (AWHONN, 2021). AWHONN's PBWS handout has a Flesch-Kincaid Reading Score of 8.1, which is equivalent to an eighth grade reading level, this level is appropriate for a large majority of the adult population to understand (Social Security Administration, 2015). This pamphlet has interlingual translation in 23 languages, including English, Spanish, Arabic, Burmese, Dari, and Swahili, plus many more. Having access to the handout in 23 languages, clinicians can print copies and hand them out as part of the patient care process to patients in their preferred language. Multi language document allows for empowering all postpartum patients to recognize

and act on signs of post birth complications, the main one being pre-eclampsia (AWHONN, 2021).

Prior to implementation of the AWHONN PBWS tool, providers, and staff of both the MFM and WH clinics were educated on the use of the PBWS tool via an educational PowerPoint. The proposed workflow was discussed during this educational event with the staff of the two clinics to best identify proper integration. It was proposed by the DNP students that workflow would begin with the AWHONN handout being distributed by either a PCT or nurse and given out to every patient at 28- and 36-weeks' gestation. The provider would then review the warning signs with the patient and document that the education was provided. A .dot phrase was created to ease the burden of documentation of the tool and education content. Providers and staff were educated on the use of this .dot phrase at the time of PBWS education to the clinics. After five weeks and eight weeks of the educational intervention the DNP students completed chart reviews to evaluate the utilization of the education intervention by measuring number of visits versus the documentation with the .dot phrase.

### **Data Management Plan**

The data utilized for this QI project was de-identified to ensure HIPPA compliance. This project used data from the electronic medical record (EMR) to determine healthcare staff compliance with the AWHONN PBWS educational tool. The electronic health record was audited by the two DNP students. The number of providers who implemented the tool in conjunction with the number of handouts documented, by use of the .dot phrase, helped determine the success of the intervention. Patients' names or any identifiable factors were not used in any part of the project. Healthcare staff personal information was not included in the

project apart from the projects CAPP, Bridget Burns, NP, whose permission was obtained to be recognized in the project.

### **Facilitators and Barriers**

The strengths, weaknesses, opportunities, and threats (SWOT) analysis template is used as a business plan, decision making tool, and examination of an organization's internal and external environment (Gretzky, 2010). SWOT was utilized in this project to interpret the various components of the project and its viability (efficacy), see Appendix C for the full SWOT diagram.

One of the main strengths of the project is having access to the free AWHONN's PBWS handout for patient education. Another core strength of the project is having a supportive CAPP in Bridget Burns-King, NP; was able to set up times during mandatory staff meetings that allowed the DNP students to present their educational PowerPoint to staff. She also created a .dot phrase that she shared with the office for efficient documentation. Having the ability to be able to incorporate the intervention in both a WH and MFM clinic so that the intervention reaches a larger more diverse population was also a strength. WH clinic focuses on generalized GYN care and low-normal pregnancy risk while MFM focuses on medical conditions that may increase risk in a pregnancy such as diabetes, preeclampsia, or a concern for fetal health (B. Burns-King NP, personal communication, 2022). The two clinics work closely together and the familiarity between staff made for optimal collaboration. The care team at both clinics were knowledgeable, engaging, and eager to close the care gap and improve outcomes for their patients, which was another strength for implementation.

The weaknesses identified were the lack of a standardized policy and procedures for education of postpartum complications signs and symptoms. The lack of consistent patient education program often lead to either no education given, or a quick lesson given at the end of a prenatal visit. The inconsistency in delivering patient education can be hard for soon to be mothers as they are already taking in a large amount of information, and it is hard to focus on postpartum teachings when they have not given birth.. Another weakness is that the AWHONN PBWS has an educational training program for providers, which is recommended as a companion to the educational handout. However, due to budget concerns this training was not completed by providers.

The most prevalent opportunity for this clinic to improve maternal health outcomes is by providing a standardized education using an evidence-based tool via AWHONN's PBWS handout. The MFM and WH clinic both serve a widespread and diverse population of pregnant women with the opportunity to impact the rates of morbidity, mortality, and the health of women postpartum. Additionally, having both low risk (patients from the Women's Health Clinic) and high-risk pregnant women (patients from the Maternal Fetal Medicine Clinic) in the data collection and implementation was optimal for expanding the project.

Threats to the clinic included short staffing, not having enough nurses or PCTs to staff each patient and complete full intakes or provide education before going to get the next patient. Additionally, many of the primary care providers staff are residents, who rotate in and out of the clinic each semester, which makes for inconsistency in care givers. These frequent staff changes also made delivering the educational PowerPoint to every staff member difficult, as not everyone was able to attend the staff meetings that the education was presented. Additionally, providers have been taking on more patients which decreases the time allowed for appointments. Most

appointment times allocated 20 minutes, this was often just enough time to gather history, manage symptoms, or chronic conditions, and talk about the developing fetus or provide education. Leaving minimal to no time for education regarding what to expect postpartum. Considering this, the AWHONN educational intervention is expected to take approximately five minutes.

The resistance to change and the request for an additional task to be added to the staff's lengthy list of responsibilities were contributing barriers to implementation. In addition to these barriers mentioned is a lack of education given on the importance of the intervention, which could motivate employees to want to make the change. While having a Clinical Agency Partner in the MFM clinic was a strength, not having one in the WH clinic was a weakness. There were no volunteers to take on this role. Lastly, due to the current supply chain, a lack of paper and ink supplies to print the educational materials was a threat in maintaining the intervention.

### **Theoretical Framework/QI Method**

The doctoral students utilized the Plan, Do, Study, Act method for project implementation, review of results, and revisions. The Plan, Do, Study, Act method consists of testing an intervention by developing a plan to test the intervention (Plan), carrying out the test (Do), observing and learning from the results (Study), and determining what modifications should be made (Act) (IHI, 2022). The doctoral students planned to present their educational PowerPoint regarding AWHONN PBWS handout during a mandatory staff meeting with both the MFM and WH clinics, to teach them the importance of implementing the evidence-based education tool and their roles (Plan). Staff included nurses, patient care techs, and providers. The AWHONN handout provided in the clinic was available in English, Spanish, Arabic, Swahili,

Pashto, and Burmese. These handouts were printed by the DNP students and made readily available to staff. At both offices they also have access to translators via a secured healthcare app. The intervention was done (Do) through delivery by the nurses and techs of the educational tool at 28 and 36 weeks. Providers may reiterate certain points or answer any questions patients have after receiving the educational tool during the clinic visit for routine prenatal care. Once the education to the patient is complete, healthcare staff documented the provided .dot phrase into their charting. Next, the DNP students reviewed (Study) the data collected by completing chart reviews to make sure that the education was being provided, with the use of the .dot phrase by the healthcare staff, to determine the success of the quality improvement intervention. Data collected includes the number of staff participating in the utilization of the tool as well as the number of documented .dot phrases in the EMR. Finally, action (Act) was taken to share the results of this clinical intervention and discuss possible, immediate, and future recommendations for the continuation of the educational intervention.

### **Budget**

The main costs associated with this project were human resources and materials. Human resources, being the cost of staff time to implement the educational intervention. Materials include the resources used to print the educational handout- i.e., paper, ink, etc. The AWHONN handout is a free resource for healthcare staff to utilize, so no cost is associated with the use of the handout. The minimal costs associated with staff time and materials were outweighed by the potential benefits of educating pregnant persons on post birth warning signs to prevent complications- including injury and even death. See Appendix F for budget breakdown.

### **Timeline**

Project Proposal began in May of 2022 and was completed by the doctoral students in the fall semester of 2022. The project was then submitted for IRB review by Michigan State University College of Nursing. Prior to approval, in November 2022, the DNP students joined a staff meeting with MFM and WH clinics to present an educational PowerPoint on the PBWS Handout. IRB approval was obtained through MSU on December 6, 2022, and the study was deemed non-research. Then the Mid-Michigan Institution for MFM and WH then, reviewed the MSU IRB approval and approved the project on December 29, 2022. After all approvals were obtained, the doctoral students again met with the MFM and WH clinics. This meeting took place on January 31, 2023, in which the DNP students dispersed the educational PowerPoint regarding the Post Birth Warning Signs handout, which included a .dot phrase for staff to use once they provided the patients with the handout. During the presentation to staff, it was recommended that the PBWS educational handout be given twice during the prenatal period to all pregnant persons. Retrospective chart audits were completed at five weeks and again eight weeks post intervention to evaluate use of the educational tool. The data collected was then analyzed by the doctoral students and presented to the College of Nursing DNP cohort in April of 2023.

### **Barriers to Implementation**

To implement the PBWS handout, the DNP students had two in person meetings. At the first scheduled meeting in November 2022, the students were given five minutes by the clinic manager in the monthly staff zoom meeting. At this time, the project was not approved yet therefore the DNP students could only present their educational PowerPoint and answer any questions. Once the project was approved, the students attempted to arrange an intervention date, however scheduling conflicts and poor weather delayed the in person educational intervention to

the end of the month. After a month of communication between the CAPP and office manager, a date was decided. However, the staff meeting was canceled due to the majority of the clinic's staff being ill or working from home due to the weather. The DNP students worked with the CAPP to disperse the educational PowerPoint and tool to those present and encouraged them to start utilizing the PBWS handout. The lack of staff presence was a major barrier as well as not being able to set up a mandatory time in which staff would listen to the presentation.

Identifiable barriers as the DNP students were collecting data included the lack of staff incentive to utilize the .dot phrase once they handed out the PBWS handout. Not being present for the PowerPoint education or forgetting the .dot phrase could have also factored into the underutilization of the .dot phrase. The cycling through of residents was also a factor affecting the number of staff receiving the education and distribution of the pamphlet.

### **Measurement Instrument(s)/Tools**

The main objective of this quality improvement project was to educate the staff and provide them with an evidence based educational tool that would teach pregnant women about their postpartum birth risks. The goal would be that the intervention could be completely implemented by the clinical staff in both clinics. To measure the effectiveness of implementation, retrospective chart audits were performed to evaluate the staff's provision of the AWHONN PBWS handout. The two DNP students evaluated the charts for the .dot phrase provided to the clinic's staff during the educational PowerPoint. The chart audits were completed on two occasions, five weeks into the intervention and then again at eight weeks.

### **Data Analysis**

## Indicators

Implementation of the project began on January 31, 2023, at MFM and WH clinics. A successful intervention will be measured at 50% of all eligible patient visits of pregnant persons 28-40 weeks receiving the educational intervention, as well as healthcare staff using the .dot phrase in the chart. The Project took place during an eight-week period, ending on March 30, 2023.

## Analysis

For the project, the CAPP at MFM clinic, Bridget Burns-King, made a point to implement this intervention with the patients that she provided direct care to. As a key stakeholder, CAPP had a stronger affinity for the project's implementation. Other clinicians, however, did not have the same drive to complete the intervention both at MFM and especially at WH, where there was not a CAPP. One out of 11 staff members at the MFM clinic distributed the handout and documented it. In the WH clinic, zero out of 24 staff members distributed the handout and documented use of the tool. A significant barrier to completing chart reviews was lack of use of the .dot phrase. In the WH clinic the .dot phrase was not implemented at all, but the handout was given out. The charge nurse at WH estimated 20 pregnant persons received the PBWS tool during the first five weeks of the intervention. In the MFM clinic, 163 charts were audited after approximately five weeks of implementation. Out of 163, 86 (52%) were excluded due to being less than 28 weeks gestation, having a telehealth visit (either video or phone call), or postpartum visits. The remaining 77/163 (47%) were viable patients for the PBWS handout, in 29/77 (37%) of those patients, the .dot phrase was used to signify they had received the PBWS

handout. See Appendix K for data analysis breakdown. The 29 patients whose chart were audited were from one provider, the MFM clinic's CAPP.

The second chart audit, performed at eight weeks, there was no change in staff contribution to the intervention. Only one provider in the MFM clinic was both giving the pamphlet to patients and using the .dot phrase to document it. The WH clinic was only able to estimate that 50 pregnant persons received the PBWS tool between 28-40 weeks, because the .dot phrase was not utilized. In the MFM clinic, 92 charts were audited between the fifth and eighth week of implementation. Out of 92, 48 (51%) were excluded due to the patient being less than 28 weeks gestation, a video visit, postpartum visit, or a no show. There were a significant amount of no shows/cancellations in this period of time versus the prior period of chart reviews at five weeks. This left 44 viable patients for the PBWS handout, in 15 (33%) of those patients, the .dot phrase was used to signify they had received the PBWS handout. The 15 Audited charts were from one provider in the MFM clinic, which was the CAPP, Bridget Burns, NP.

Overall, 94 patients received the educational intervention between the MFM and WH clinics. The DNP students set a goal of 50% of the patient population to receive the educational intervention, at five weeks 38% of the population received the educational intervention at least one time, and at eight weeks 34% of the population received the educational intervention at least one time. This project intervention was moderately successful with 34-38% out of the goal of 50% receiving the educational handout at least one time.

### **Interpretation**

There is room for improvement since the project did not reach the projected goals, however any education provided is a step in the right direction and our MFM CAPP stated that

patients were receptive to having something tangible, i.e. the handout, to take home along with the education provided (Bridget Burns-King, NP, personal communication, 2022). The project did not reach the number of healthcare staff or patients as projected. The identified barriers were low staff turnout during the educational sessions for the QI project, lack of healthcare staff implementation, staff scheduling conflicts, and the WH clinic not using the .dot phrase. The CAPP was the only provider to utilize the handout and document it. Having a CAPP in the MFM clinic ensured proper use of the educational tool and utilization of the .dot phrase in the EMR. The project not having a CAPP in the WH clinic may have been a contributing factor to the poor uptake of the intervention.

### **Dissemination Plan**

The projects information was disseminated to the College of Nursing during the Doctoral Project Presentation on April 19<sup>th</sup>, 2023. After this initial presentation the information was shared with the MFM and WH clinics where the intervention took place. The final DNP Paper is available online through MSU's library in the DNP Project Repository.

### **Implications for Nursing**

This project brought to light the need for further education into the importance of post birth warning signs. In Michigan alone, there are 80-90 maternal deaths each year, and nearly 50% of pregnancy related maternal deaths are preventable (MDHHS, 2020). Disparities exist in maternal mortality and include race, age, economics, and education level. It is the healthcare provider's responsibility to teach patients about their health and safety in ways they understand. Nurse practitioners have one of the fastest growing careers in the United States, with an 54% growth rate projected for the next decade (Mosher, 2023). This means advanced practice nurses

play a significant role in working towards closing this gap in care. Further awareness on the morbidity and mortality that postpartum complications have on women as well as education by healthcare staff members needs to occur in order to see change.

### **Sustainability Plan**

This intervention is a simple and cost-effective way for staff to educate their patients regarding vital signs and symptoms of post-partum complications. By doing so, it could improve the health outcomes of postpartum individuals at risk for these complications. To continue to make changes in postpartum health, the clinic needs ongoing education regarding the importance of the PBWS handout, as well as occasional reminders to utilize the tool. Frequent visits to staff at the WH and MFM clinics would be necessary to reach all the staff stakeholders and provide them with the educational PowerPoint. Posting the PBWS tool and educational PowerPoint throughout the clinics could also be beneficial in reminding the staff to hand them out and how to document that they did so. An additional contribution could be implementing an electronic version of the AWHONN handout to be distributed through the patient portal. This would be helpful for telehealth/ video visits, and for attaching patients after visit summaries. Another tool to assist with sustainability would be to place a reminder into the EMR for staff and providers to disseminate the education and handout during telehealth or video visits. There were many patients, 35/163 (21%), not included in this quality improvement project due to not having the availability to access the AWHONN tool electronically related to their telehealth visits. Therefore, an electronic version of the AWHONN handout would be another way to increase access for patients and healthcare staff. It would be helpful to the clinic if future doctoral students were to continue this project and improve dissemination of the education. Additionally,

if future students were to continue this project, getting another CAPP in the WH clinic would assist in implementation at that clinic.

### **Conclusion**

The main objective of this project was to educate healthcare staff members about the AWHONN Post Birth Warning Signs so that they could integrate this into their practice and in doing so improve their patient's knowledge of post-partum complications. Upon implementation of the education to healthcare staff in the two clinics, barriers such as rotating staff, weather, lack of a CAPP in the WH clinic, and canceled meetings infringed on the student's ability to emphasize the intervention. Lack of repeated exposure to the education and inability to talk with every staff member face to face played a role in the outcomes for implementation. There was not a CAPP in the WH clinic, as there was in the MFM clinic, that was invested in the success of the intervention. The interest of the CAPP in MFM had an immense impact on proper utilization of the handout and .dot phrase in the EMR. There was only one provider to correctly utilize the education provided by the DNP students in both clinics. However, a total of 94 patients received the intervention which demonstrated moderate success in healthcare staff dissemination. Although documentation was not completed by all staff, the pamphlet was still being handed out by various staff members. This information and data were distributed to the clinics to discuss improvement going forward. There were several identified ways to improve education distribution and participation from staff. In doing so, this may decrease the incidence of hypertensive disorders, postpartum hemorrhage, and pulmonary embolism occurrence in postpartum mothers and/or increase the frequency of postpartum mothers seeking care for these conditions.

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[Z-tgTjKvIwdn6qtCaajDTrdaApviiu0~s~wt1RS0e9s8JucryHKbCrz1UXjGiSO-M50UFCgxdv31deg7cOhMi4rDv5wrs0kcfYZK~4xzFwIeXOsGt4h-bpkrGDwUOY~GRJJ2TI6pLQju6Suksq5Q9YETzwMjbe5Q &Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA](https://doi.org/10.15620/cdc.113967)

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## Appendix A: AWHONN Post-Birth Warning Signs (2021).

# SAVE YOUR LIFE:

## Get Care for These POST-BIRTH Warning Signs

Most women who give birth recover without problems. **But any woman can have complications after giving birth.** Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

<b>Call 911</b> if you have:	<input type="checkbox"/> <b>Pain in chest</b> <input type="checkbox"/> <b>Obstructed breathing or shortness of breath</b> <input type="checkbox"/> <b>Seizures</b> <input type="checkbox"/> <b>Thoughts of hurting yourself or someone else</b>
<b>Call your healthcare provider</b> if you have: <small>(If you can't reach your healthcare provider, call 911 or go to an emergency room)</small>	<input type="checkbox"/> <b>Bleeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger</b> <input type="checkbox"/> <b>Incision that is not healing</b> <input type="checkbox"/> <b>Red or swollen leg, that is painful or warm to touch</b> <input type="checkbox"/> <b>Temperature of 100.4°F or higher</b> <input type="checkbox"/> <b>Headache that does not get better, even after taking medicine, or bad headache with vision changes</b>

**Tell 911 or your healthcare provider:**

"I gave birth on \_\_\_\_\_ and  
(Date)

I am having \_\_\_\_\_"  
(Specific warning signs)

These post-birth warning signs can become life-threatening if you don't receive medical care right away because:

- **Pain in chest, obstructed breathing or shortness of breath** (trouble catching your breath) may mean you have a blood clot in your lung or a heart problem
- **Seizures** may mean you have a condition called eclampsia
- **Thoughts or feelings of wanting to hurt yourself or someone else** may mean you have postpartum depression
- **Bleeding (heavy)**, soaking more than one pad in an hour or passing an egg-sized clot or bigger may mean you have an obstetric hemorrhage

- **Incision that is not healing, increased redness or any pus** from episiotomy or C-section site may mean you have an infection
- **Redness, swelling, warmth, or pain** in the calf area of your leg may mean you have a blood clot
- **Temperature of 100.4°F or higher, bad smelling vaginal blood or discharge** may mean you have an infection
- **Headache (very painful), vision changes, or pain in the upper right area of your belly** may mean you have high blood pressure or post birth preeclampsia

**GET HELP**

My Healthcare Provider/Clinic: \_\_\_\_\_  
Hospital Closest To Me: \_\_\_\_\_

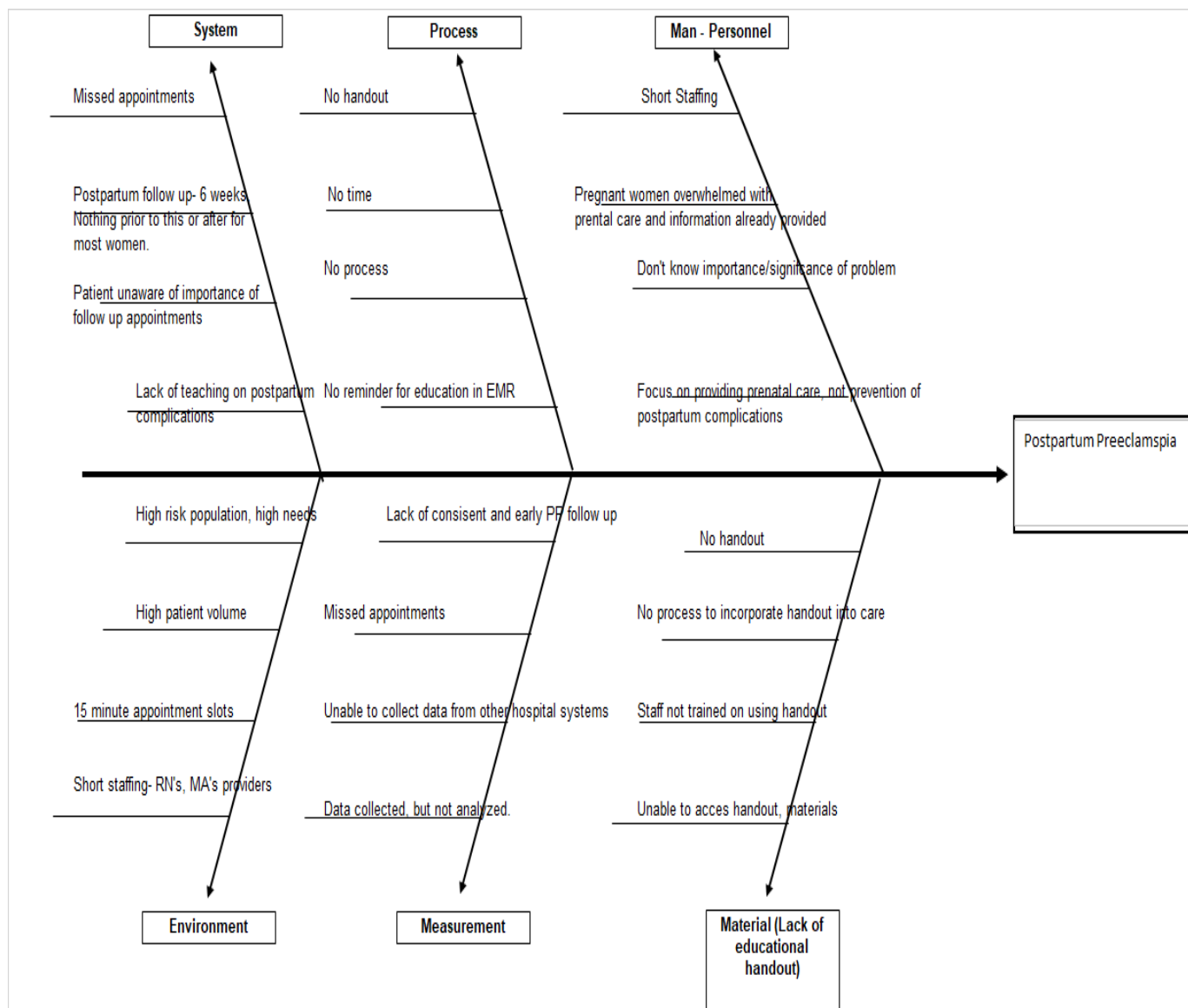
Phone Number: \_\_\_\_\_

This program is supported by funding from Merck, through Merck for Mothers, the company's 10-year, \$300 million initiative to help create a world where no woman dies giving life. Merck for Mothers is known as MSD for Mothers outside the United States and Canada.

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AWHONN (2021) permits clinicians to print copies of the Save Your Life handouts free of charge if the handout is being used as part of patient care and/or patient discharge or post-discharge education. This handout is not meant to be used as a standalone product.

## Appendix B: Fishbone Diagram



## Appendix C: Literature Review Table

Citation	Design/Level of Evidence/ Purpose	Sample	Intervention	Measurement: Variables and Instruments	Findings	Strengths/Limitations/ Implications
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<p>Article 1: Bowles, B. C., Gibson, M., &amp; Jansen, L. (2020). Continuing Education Module-The Childbirth Educator's Role in Teaching Post-Birth Warning Signs. <i>The Journal of perinatal education</i>, 29(2), 90–94.</p> <p><a href="https://doi.org/10.1891/J-">https://doi.org/10.1891/J-</a></p>	N/A	N/A	<p>Educate mothers and families on how to recognize post-birth warning signs to reduce maternal morbidity and mortality in the United States.</p>	N/A	<p>Although the AWHONN POST-BIRTH tool is intended for use at hospital postpartum discharge, childbirth educators can introduce the topic in the prenatal period when expectant parents are more receptive to information. They can emphasize the importance of mothers, and their families, recognizing warning signs and promptly and appropriately reporting them.</p>	<p>Strengths:</p> <p>Recommends AWHONN's POST-BIRTH handout to educate mothers and families on postpartum complications.</p> <p>Limitations:</p> <p>N/A</p>
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PE-D-19-  00008						
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Article #2 Ugurlu, M., Yavan, T., Karasahin, E. K. (2021)	Randomized Control Trial Level 1	Included 132 pregnant women at risk for preeclampsia and attending an antenatal clinic for routine care.	Effect of education given regarding preventing preeclampsia which included a preeclampsia booklet.	Data gathered with the Health Promoting Lifestyle Profile-II, the Self Efficacy Scale (SES), pregnant woman and fetal follow up forms, and a post-partum data collection form	The intervention had a statistically significant effect on healthy lifestyle behaviors. Preeclampsia developed in 4 of the pregnant women in the control group and none of the women in the intervention group.	Strengths: Randomized control trial. Identified need for additional research and trials in regard to this care gap. Limitations: Small sample size. Short time frame to identify outcomes for women post-partum.
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Article #3  Strassburg, E. R., Fisher, S., Mackeen, A.D., Sun, H., Paglia, M. (2022).	Randomized Control Trial  Level 1	179 primigravi d patients at a tertiary care center.	Preecla mpsia educati on with a graphic card, and an educati onal video.	Survey at 18- 25 weeks gestatio n and again at 32-37 weeks gestatio n	The results were not largely significant, however the routine counseling group had the lowest increase in knowledge. Anxiety was not impacted.	Strengt h: Rando mized control trial, and educati on method s were visual, so no blinding required . Patient demogr aphics in each were similar. Surveys were validate d tests for anxiety and pre- eclamps ia knowle dge.  Limitati on: Exposur e to the research study
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						itself may have influenced patient awareness of preeclampsia. Individual anxiety levels and response will likely differ with each patient and can be influenced by life situation, current health problems and her health literacy. Most of the study populati
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						on identifie d as married white women with at least a high school educati on.
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<p>Article #4</p> <p>You, W., Wolf, M. S., Bailey, S.C., Grobman, W.A. (2012)</p>	<p>Randomized Control Trial</p>	<p>120 women from a university-based obstetrics and gynecology clinic that serves low-income patients.</p>	<p>Assigned to a newly developed preeclampsia educational tool, a standard pamphlet addressing preeclampsia by American College of Obstetricians and Gynecologists OR no information</p>	<p>Knowledge assessed with use of a validated questionnaire</p>	<p>Patients who received an educational tool scored significantly better on the preeclampsia questionnaire. Found that knowledge deficits do exist and require educational initiatives.</p>	<p>Strengths: Randomized control trial. Included diverse populations.</p> <p>Limitations: Loss of participants in follow up. Conducted at a single institution. Study did not investigate outcomes.</p>
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## Appendix D: SWOT Table

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Collaboration between Sparrow MFM clinic and Sparrow WH clinic</li> <li>• Network of knowledgeable Doctors, Advanced Practice Nurses, Physician's Assistants, and Nurses at Sparrow Clinics.</li> <li>• Evidence Based Tool: AWHONN's Post Birth Warning Signs handout.</li> <li>• AWHONN's Post Birth Warning Signs is a free tool for public use.</li> <li>• AWHONN's Post Birth Warning Signs handout comes in 23 different languages: including English, Spanish, and Arabic.</li> <li>• AWHONN's Post Birth Warning Signs are already in use inpatient at facility to educate postpartum parents.</li> </ul>	<ul style="list-style-type: none"> <li>• No standardized tool to educate prenatally on postpartum complications and what to look for currently in use.</li> <li>• Patients currently receive inadequate, insufficient, or inequitable information on postpartum complications based on the specific teaching the individual provider or clinic at Sparrow provides</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• MFM clinic patient population is primarily high-risk pregnancies, increasing the need for a proper education tool.</li> <li>• Opportunity to improve maternal health outcomes by providing standardized evidence-based information via AWHONN's Post Birth Warning Signs handout.</li> <li>• MFM and WH clinics see a large and diverse population of pregnant persons in Ingham County</li> </ul>	<ul style="list-style-type: none"> <li>• Short staffing</li> <li>• Residents rotating through the clinic each semester.</li> <li>• Short appointment times for prenatal visits</li> <li>• Staff Burnout</li> <li>• Resistance to implementation/change</li> <li>• Lack of education</li> <li>• Possible supply issues with paper and ink due to supply shortages</li> </ul>

## Appendix E: GANTT Table

	Start Date	End Date	Timeline	Status
DNP Project	May 16, 2022	May 1, 2023		Active
Proposal Draft #1	May 16, 2022	June 5, 2022		Complete
Proposal Draft #2	June 6, 2022	July 3, 2022		Complete
Proposal Draft #3	July 5, 2022	July 17, 2022		Complete
Final Project Proposal	July 18, 2022	August 18, 2022		Active
IRB Review- CON	August 18, 2022	September 1, 2022		Upcoming
IRB Review-Sparrow	September 1, 2022	September 15, 2022		Upcoming
Historical Data Review	September 15, 2022	September 30, 2022		Upcoming
Education	September 30, 2022	October 1, 2022		Upcoming
Project Implementation	October 1, 2022	January 15, 2023		Upcoming
Data Analysis	January 15, 2023	March 1, 2023		Upcoming
Project Review	March 1, 2023	April 1, 2023		Upcoming
Results and Interpretation	April 1, 2023	May 1, 2023		Upcoming
Presentation	May 1, 2023	May 1, 2023		Upcoming

## Appendix F: Budget

Michigan State University College of Nursing						
ACOG Education Implementation						
Financial Plan						
FY 2022-23						
<b>EXPENSE</b>						
<b>Personnel Expense with Fringes</b>						
Sparrow Data Analysts					\$0	
Providers					0	
Nurses					0	
Patient Care Techs					0	
<b>SALARY &amp; FRINGE SUBTOTAL</b>						\$0
<b>Supplies</b>						
Ink					\$100	
Printer repairs					\$100	
Paper					\$20	
<b>OTHER EXPENSES SUBTOTAL</b>						\$220
<b>Total Program Expense</b>						<b>\$220</b>
<b>REVENUE</b>						
Tuition	(2 students)					\$18,000
<b>Total Program Revenue</b>						<b>\$18,000</b>
<b>DIFFERENCE</b>						<b>\$17,780</b>

## Appendix G: PowerPoint



**SAVE YOUR LIFE:**

**Get Care for These POST-BIRTH Warning Signs**

Most women who give birth recover without problems. But any woman can have complications after the birth of a baby. Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

**POST-BIRTH WARNING SIGNS**

<p><b>Call 911</b> if you have:</p>	<input type="checkbox"/> Pain in chest <input type="checkbox"/> Obstructed breathing or shortness of breath <input type="checkbox"/> Seizures <input type="checkbox"/> Thoughts of hurting yourself or your baby
<p><b>Call your healthcare provider</b> if you have: (If you can't reach your healthcare provider, call 911 or go to an emergency room)</p>	<input type="checkbox"/> Bleeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger <input type="checkbox"/> Incision that is not healing <input type="checkbox"/> Red or swollen leg, that is painful or warm to touch <input type="checkbox"/> Temperature of 100.4°F or higher <input type="checkbox"/> Headache that does not get better, even after taking medicine, or bad headache with vision changes

**Trust your instincts. ALWAYS get medical care if you are not feeling well or have questions or concerns.**

**Tell 911 or your healthcare provider:**

"I had a baby on \_\_\_\_\_ (Date) and I am having \_\_\_\_\_ (Specific warning signs)"

**These post-birth warning signs can become life-threatening if you don't receive medical care right away because:**

- Pain in chest, obstructed breathing or shortness of breath (trouble catching your breath) may mean you have a blood clot in your lung or a heart problem
- Seizures may mean you have a condition called eclampsia
- Thoughts or feelings of wanting to hurt yourself or your baby may mean you have postpartum depression
- Bleeding (heavy), soaking more than one pad in an hour or passing an egg-sized clot or bigger may mean you have an obstetric hemorrhage
- Incision that is not healing, increased redness or any pus from episiotomy or C-section site may mean you have an infection
- Redness, swelling, warmth, or pain in the calf area of your leg may mean you have a blood clot
- Temperature of 100.4°F or higher, bad smelling vaginal blood or discharge may mean you have an infection
- Headache (very painful), vision changes, or pain in the upper right area of your belly may mean you have high blood pressure or post birth preeclampsia

**GET HELP** My Healthcare Provider/Clinic: \_\_\_\_\_ Phone Number: \_\_\_\_\_  
Hospital Closest To Me: \_\_\_\_\_

**AWHONN**  
PROMOTING THE HEALTH OF WOMEN AND NEWBORNS

This program is supported by funding from Merck, through Merck for Mothers, the company's 10-year, \$100 million initiative to help create a world where no woman dies giving life. Merck for Mothers is known as MSD for Mothers outside the United States and Canada.

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## SPARTANS WILL.

### Intervention

- Review important signs of post-partum complications and educate patients at 28 and 36 weeks
- Give patient and their family the AWHONN Post-Birth Warning Signs Handout and encourage to call their provider or go into the Emergency room if having a complication.
- Use .dotphrase produced by DNP students to include in patient chart



## SPARTANS WILL.

### WHY IS THIS IMPORTANT?

Per CDC maternal deaths are increasing in the United States (Hoyert, 2022). Black women and women aged 40 years and older are the most at risk for death due to a postpartum complication.

According to the Centers for Disease Control and Prevention (CDC), the incidence of hypertensive disorders, postpartum hemorrhage, and pulmonary embolism are all increasing (2019).

Stress of pandemic and assaults on reproductive rights may exacerbate rates of postpartum complications and deaths.

Using a simple evidence-based handout can help improve outcomes for patients!

Research shows any educational intervention is better than no education (You, 2012; Strassberg, 2022; Ugurlu, 2021)



## SPARTANS WILL.

### Main Educational Points from Handout:

Symptoms after birth that could be serious:

Pain in chest

Shortness of breath

Seizure

Bleeding; soaking through more than one pad per hour OR blood clots bigger than the size of an egg

Incision that is not healing (redness, pain, pus)

Bad smelling vaginal blood or discharge

Pain, redness, warmth, or swelling in the legs

Temperature of more than 100.4 degrees

Very painful headache, changes in vision, or pain in right upper side of belly

**Notify your health care provider for any of the above symptoms.**



## SPARTANS WILL.

### WHY IS THIS IMPORTANT?

Per CDC maternal deaths are increasing in the United States (Hoyert, 2022). Black women and women aged 40 years and older are the most at risk for death due to a postpartum complication.

According to the Centers for Disease Control and Prevention (CDC), the incidence of hypertensive disorders, postpartum hemorrhage, and pulmonary embolism are all increasing (2019).

Stress of pandemic and assaults on reproductive rights may exacerbate rates of postpartum complications and deaths.

Using a simple evidence-based handout can help improve outcomes for patients!

Research shows any educational intervention is better than no education (You, 2012; Strassberg, 2022; Ugurlu, 2021)



## **SPARTANS WILL.**

Dot Phrase to be used for EHR Documentation

**Dot phrase:**

**Education on postpartum complications completed. AWHONN Post-Birth Warning Signs handout given to patient. All questions answered.**



## **SPARTANS WILL.**

### **Summary**

- Number of women with postpartum complications is increasing which can lead to chronic disease, disability, or death (CDC, 2019)
- No standard educational tool to teach women about signs and symptoms of postpartum complications
- The main objective is the implementation of the AWHONN POST BIRTH Warning Signs into practice as a regular care measure
- Using .dotphrase after education has been given to the patient



## SPARTANS WILL.

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## Appendix H: Agency Agreement Letter



Improving the health of the people in our communities by  
providing quality, compassionate care to everyone, every time

Date: August 16, 2022

To the Michigan State University College of Nursing:

I am familiar with the quality improvement project being conducted by Sierra Harns and Bailee Secord entitled "Educational Intervention to Improve Maternal Postpartum Outcomes in a Hospital affiliated OB/GYN clinic". I understand that Maternal Fetal Medicine & Women's Health units at Sparrow involvement will include the mentorship of the above-named students and will require the application of the proposed process including: reviewing our current processes and/or practice, accessing records for review, protocols and practices related to the project, participation in improvement team meetings, educating staff, access to benchmark and performance data, revising current policy/procedures related to this can add additional information here as pertinent and education of staff or providers impacted by the development of the project.

I have read the project's proposal and am comfortable with the project as describe being conducted at our institution. I understand that this project will be carried out following sound, ethical principles. The Sparrow Maternal & Fetal Medicine and Women's Health Units gives permission for the students to disseminate project data and outcomes at Michigan State University College of Nursing for the purpose of academic course completion and any other place they would approve of dissemination such as department meetings etc. Therefore, as a representative of the Sparrow Maternal & Fetal Medicine and Women's Health Units I agree that Sierra Harns and Bailee Hanover's evidence-based project may be conducted at our institution.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Burns-King', written over a horizontal line.

Bridget Burns-King NP-BC

SMG Maternal Fetal Medicine

**SMG Maternal Fetal Medicine**  
*An outpatient department  
of E.W. Sparrow Hospital*

Steven Roth, M.D.  
Ali Alhousseini, M.D.  
Abigail Ramseyer, D.O.  
Bridget Burns-Kin, NP

1200 E. Michigan Ave.  
Suite 345  
Lansing, MI 48912

T 517.364.5610  
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**Sparrow.org**

## Appendix I: CITI Certificates

		Completion Date 23-Apr-2019 Expiration Date N/A Record ID 31391219
This is to certify that:		
<b>Sierra Marie Harns</b>		
Has completed the following CITI Program course:		
<div>Responsible Conduct of Research (RCR) 3 (Curriculum Group) MSU Graduate School RCR Program (Course Learner Group) 1 - Basic Course (Stage)</div>		
<div>Not valid for renewal of certification through CME.</div>		
Under requirements set by:		
<b>Michigan State University (MSU)</b>		
 Collaborative Institutional Training Initiative		
Verify at <a href="http://www.citiprogram.org/verify/?w8d85f213-379c-4f5d-aa0c-c6d87d4953be-31391219">www.citiprogram.org/verify/?w8d85f213-379c-4f5d-aa0c-c6d87d4953be-31391219</a>		



Completion Date 12-Jul-2020  
Expiration Date N/A  
Record ID 37358563

This is to certify that:

**Bailee Lynn Secord**

Has completed the following CITI Program course:

**Responsible Conduct of Research (RCR) 3**

(Curriculum Group)

**MSU Graduate School RCR Program**

(Course Learner Group)

**1 - Basic Course**

(Stage)

Not valid for renewal of  
certification through CME.

Under requirements set by:

**Michigan State University (MSU)**

**CITI**  
Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?w27fa86ab-0bdd-4f54-8b9d-310588365a7a-37358563](http://www.citiprogram.org/verify/?w27fa86ab-0bdd-4f54-8b9d-310588365a7a-37358563)

## Appendix J: MSU IRB Non-Research Approval

**MICHIGAN STATE  
UNIVERSITY****DETERMINED NOT "RESEARCH"  
Revised Common Rule**

December 6, 2022

To: Sierra Marie;Sierra Harns

Re: **MSU Study ID:** STUDY00008534  
**Principal Investigator:** Sierra Marie;Sierra Harns  
**Determination Date:** 12/6/2022

Title: A DNP Project: Increasing the Rate of Patient Education Regarding  
Maternal Postpartum Complications in Hospital Affiliated Outpatient  
Obstetric/Gynecologic Clinics

The activity described in this submission was determined not to be "research" as defined by the Common Rule as codified in the U.S. Department of Health and Human Services (DHHS) regulations for the protection of human research subjects.

**Definition of Research**

For DHHS, "*Research*" means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research:

- (1) Scholarly and journalistic activities (e.g., oral history, journalism, biography, literary criticism, legal research, and historical scholarship), including the collection and use of information, that focus directly on the specific individuals about whom the information is collected.
- (2) Public health surveillance activities, including the collection and testing of information or biospecimens, conducted, supported, requested, ordered, required, or authorized by a public health authority. Such activities are limited to those necessary to allow a public health authority to identify, monitor, assess, or investigate potential public health signals, onsets of disease outbreaks, or conditions of public health importance (including trends, signals, risk factors, patterns in diseases, or increases in injuries from using consumer products). Such activities include those associated with providing timely situational awareness and priority setting during the course of an event or crisis that threatens public health (including natural or man-made disasters).
- (3) Collection and analysis of information, biospecimens, or records by or for a criminal justice agency for activities authorized by law or court order solely for criminal justice or criminal investigative purposes.



**Office of  
Regulatory  
Affairs**  
Human Research  
Protection Program

4000 Collins Road  
Suite 136  
Lansing, MI 48910

517-355-2180  
Fax: 517-432-4503  
Email: [irb@msu.edu](mailto:irb@msu.edu)  
[www.hrpp.msu.edu](http://www.hrpp.msu.edu)

(4) Authorized operational activities (as determined by each agency) in support of intelligence, homeland security, defense, or other national security missions." [45 CFR 46.102(l)]

#### Determination

The point of this quality improvement project was to increase the education given to pregnant women regarding postpartum birth warning signs. The review of literature identified that educational tools, handouts, videos, and counseling in the perinatal period increased knowledge retention of postpartum complications in mother prenatally. An educational PowerPoint was developed to introduce and reeducate staff on the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) Post Birth Warning Signs handout, and why it should be utilized in clinic. Copies of the PowerPoint and the AWHONN Post Birth Warning Signs were made available to staff. An auditing tool was created for a retrospective chart audit to evaluate use of the educational tool 3 weeks post intervention and 6 weeks post intervention.

Hence, the activity does not involve research.

Therefore, the federal regulations for the protection of human subjects would not apply to this activity and Michigan State University (MSU) Institutional Review Board (IRB) approval is not needed to proceed. However, please note that while MSU IRB approval is not required, other federal, state, or local regulations or requirements or ethical or professional standards may still be applicable based on the activity.

**Modifications:** If any of the activities described in this submission change, please contact the IRB office as the activity may involve human subject research and require IRB approval. For example, this determination is not applicable to activities that may be regulated by U.S. Food & Drug Administration (FDA), such as those involving drugs, medical devices, human food additives, color additives, electronic products, or any other test articles regulated by the FDA.

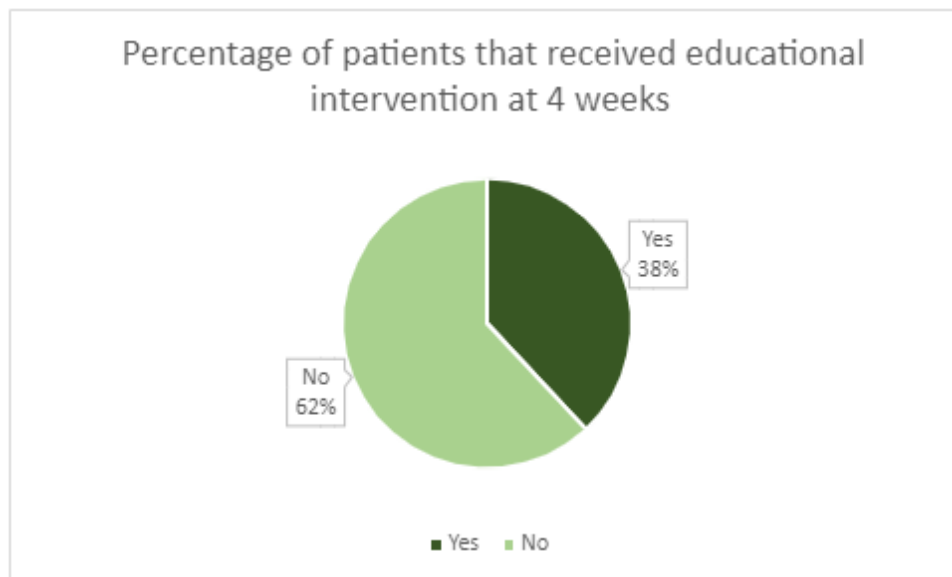
**Modifications to Funding:** Changes in funding may alter this determination. For example, MSU IRB review and approval is required if MSU receives an award through a grant, contract, or cooperative agreement directly from a federal agency, even where all non-exempt research involving human subjects are carried out by employees or agents of another institution. In addition, the new funding source may have additional or different requirements.

**For More Information:** See HRPP Manual Section 4-3, Determination of Human Subject Research (available at [hrpp.msu.edu](http://hrpp.msu.edu)).

**Contact Information:** If we can be of further assistance or if you have questions, please contact us at 517-355-2180 or via email at [IRB@msu.edu](mailto:IRB@msu.edu). Please visit [hrpp.msu.edu](http://hrpp.msu.edu) to access the HRPP Manual, templates, etc.

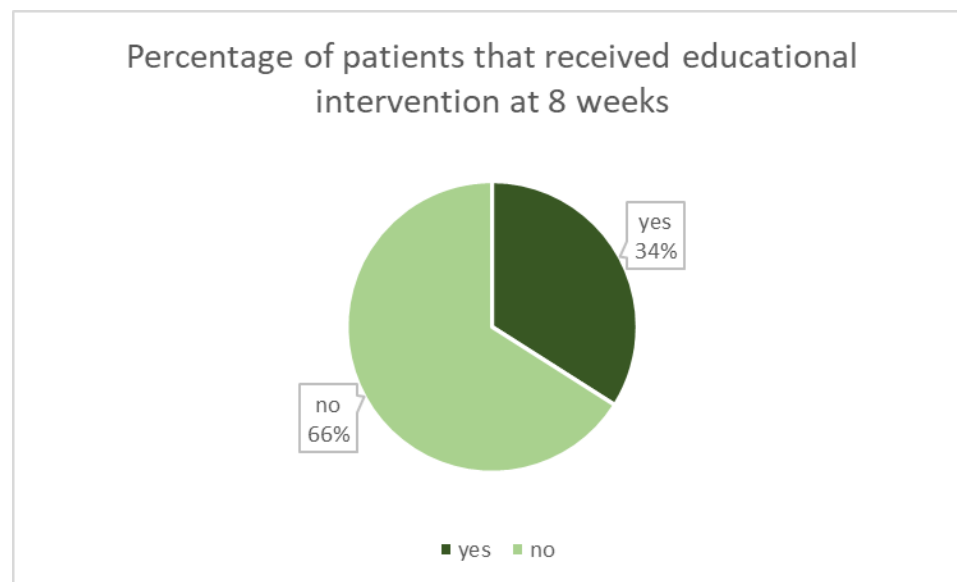
## Appendix K: Data Table/Graph 5 weeks

Gestational Weeks	28	36	All patients
Yes	16 (47%)	13 (30%)	29 (38%)
No	18 (53%)	30 (70%)	48 (62%)
Total	34	43	77



## Appendix L: Data Table/Graph 8 weeks

Gestational Weeks	28	36	All patients, all gestational ages
Yes	13 (36%)	2 (25%)	15 (34%)
No	23 (64%)	6 (75%)	29 (66%)
Total	36	8	44



## Appendix M: Data Table/Graphs (Combined)

Gestational Weeks	28	36	All patients, All gestational ages
Yes	29 (41%)	15 (29%)	44 (36%)
No	41 (59%)	36 (71%)	77 (64%)
Total	70	51	121

