

## 45th Biennial Convention (16-20 November 2019)

### Labor Progressive Environment: An Evidence-Based Approach to Primary Vaginal Delivery

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**Background:** The primary cesarean birth rate in low-risk nulliparous women is currently on the rise in the United States. One out of every three women in the U.S. will give birth through cesarean delivery. In 2016, the average rate of cesarean section in the U.S. was as high as 31.9%. This rate surpasses the Healthy People 2020 goal of a national cesarean rate of less than 23.9%. The rise in the rate has shown no clinical benefit or improvement in neither maternal nor newborn outcomes. Cesarean deliveries are often medically indicated and necessary for high-risk pregnancy conditions such as gestational diabetes, maternal obesity, preterm labor, multiple gestation, or preeclampsia. However, more than 50% of recent cesarean deliveries have been performed in otherwise healthy first-time mothers with no risk factors for surgery. These cesarean births are often contributed to modifiable factors such as patient preferences and/or variations in clinical practices. Cesarean delivery is associated with serious maternal/newborn complications such as hemorrhage, infection, blood clots, persistent pain, asphyxia, and respiratory distress. In 2017, the Florida hospital median cesarean rate was 29.4%, one of the highest rates in the nation. The primary cesarean rate among low-risk first-birth deliveries in Florida ranges across the state between 6.6% to as high as 59.5%. This wide variation in cesarean rates across the state suggest that there are dissimilarities in obstetrical clinical practices and may warn of the potential overuse of a service.

Recent study findings demonstrate that increasing women's access to continuous labor support and other non-medical interventions reduces primary cesarean birth rates. The Labor Progressive Environment (LPE) incorporates evidence-based interventions to create an environment in which the utilization of continuous labor support with comfort tools and techniques promote the progression of labor towards vaginal delivery. Although currently underutilized, the presence of continuous labor support has been named as one of the most effective tools to improve labor and delivery outcomes.

**Aim:** The primary goal of this quality improvement project was to utilize a Labor Progressive Environment (LPE) to promote vaginal delivery and to reduce the primary cesarean birth rate in low risk pregnancies at a local women's hospital.

**Methods:** A Labor Progressive environment was piloted on a 16 bed labor and delivery (L&D) unit for an eight week period. Educational training sessions were provided to 26 L&D nurses regarding the LPE including continuous labor support, evidenced based delivery tools, and the Coping with Labor Algorithm. Seven nurses and one nurse midwife were selected as unit-based champions for the project and attended a labor

support skills workshop provided by the Florida Peri-natal Quality Collaborative (FPQC). 16 expectant parents who were enrolled in the hospital's maternity course participated in birthing classes which included information regarding LPE recommendations and tools for comfort and coping during labor. The Coping with Labor Algorithm was placed at the nurses' station and evidence based labor support tools such as peanut balls and additional labor support resources were placed on the units for use by the nurses caring for laboring mothers. Knowledge assessment tests were utilized to measure the knowledge of the nurses and expectant parents pre and post educational training sessions. Data was analyzed using JASP statistical software. A Paired sample T-Test was run to assess knowledge gain for parents and nurses. Numerical reports of the primary cesarean section rates were collected prior to and after project implementation for comparison. Intended outcomes identified for the project included 1) to reduce the primary cesarean section rate; 2) to increase the nurses' knowledge of labor support skills and comfort techniques; 3) and to increase the patient and family's knowledge of non-pharmacologic comfort and coping measures that can be used during labor.

**Outcomes:** Knowledge assessment test results showed an improvement in the knowledge of nurses and expectant parents. Data results indicated an increase in the knowledge of the nurses (pretest,  $M=81\%$ ; posttest  $M= 95\%$ ) in regards to continuous labor support skills. The results were statistically significant ( $p= <.001$ ). A total of 16 parents were present for the labor skills class and completed both pre- and post-knowledge assessment tests. Data results from the tests indicated an increase in the knowledge of the parents (pretest,  $M=87\%$ ; posttest  $M= 91\%$  ; ) in regards to labor comfort and coping measures. These results were also statistically significant ( $p= <0.003$ ). Prior to implementation of the project, the primary cesarean section rate at the facility was 37.5%; the post project cesarean section rates will be released on Dec 23rd 2018.

**Discussion:**

The Labor Progressive Environment is a systematic approach to create an atmosphere that encourages continuous labor support and provides access to evidence-based tools and techniques to advance the progression of labor towards vaginal birth. The project's activities and interventions led to a positive impact on the unit, nurses, patients and family members. Through incorporation of the evidenced based LPE education and resources, nurses increased their knowledge of the concept of continuous labor support and tools that could be utilized to promote labor progress and vaginal delivery. Additionally, the patients and families increased their knowledge of the comfort and coping measures and techniques that can be beneficial during labor. Future implications should include replication of its systematic approach in other healthcare facilities over a longer time frame to further evaluate the effectiveness in reducing the primary cesarean rate in low risk pregnancies. The Labor Progressive Environment empowers the obstetrical nurse during labor, increases the knowledge of patients and families, reduces primary cesarean section rates, and ultimately improves health outcomes for both first-time mothers and their newborns.

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**Title:**

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### Keywords:

Cesarean Section, Pregnancy Outcomes and Vaginal Birth

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### **Abstract Summary:**

The rate of medically unnecessary primary cesarean sections is a growing epidemic in the United States with no measurable improvement in maternal/newborn outcomes. Implementation of a labor progressive environment that utilizes continuous labor support and evidence-based comfort tools and techniques can help promote the progression of labor towards vaginal delivery.

### **Content Outline:**

#### **Labor Progressive Environment Outline**

#### **I. Introduction**

A. Rise in U.S. cesarean section rates in first-time low-risk mothers

1. In 2016, the average rate of cesarean sections in U.S. rose to 31.9%.

a) No documented clinical benefit or improvement in neither maternal nor newborn outcomes.

b) Increases risk of maternal/newborn complications.

2. Majority of cesarean births attributed to modifiable factors.

a) Patient preferences

b) Variation in clinical practices

B. Florida's primary cesarean section rates amongst highest in the U.S.

1. Florida's primary cesarean section rates ranges between 6.6% to 59.5%.

a) Wide variation in rates suggest dissimilarities in clinical practices.

b) Suggests overuse of a service.

C. A Labor Progressive Environment (LPE) utilizes continuous labor support and other non-medical tools to reduce cesarean section rate.

1. Continuous labor support is one of the most effective tools to improve labor and delivery outcomes.

2. Through the utilization of continuous labor support along with comfort tools & techniques, a labor progressive environment promotes the progression of labor towards vaginal delivery.

#### **II. Methods**

A. Nurse Education & Training

1. 26 registered nurses completed educational sessions regarding continuous labor support, evidence-based delivery tools, and the Coping With Labor Algorithm.

2. In addition, eight nurse champions from the unit attended a 2-day labor support skills workshop provided by Florida Perinatal Quality Collaborative (FPQC).

B. Parent Maternity Courses

1. 16 expectant parents enrolled in the hospital's maternity course participated in birthing classes that included information regarding LPE recommendations and use of tools for comfort and coping during labor.

#### C. Unit Resources

1. Evidence-based labor support tools such as peanut balls and additional labor support resources were placed on the units for use by nurses caring for laboring women.
2. The Coping With Labor Algorithm was available at the nurses' station.

#### D. Data Collection & Evaluation

1. Pre and post knowledge assessment tests were utilized to measure the knowledge of nurses and expectant parents.
  - a) Data was analyzed in JASP statistical software.
  - b) Paired sample t-test was utilized to assess for knowledge gain for parents and nurses.
2. Numerical reports of the hospital facility's primary cesarean sections were collected prior to and after project implementation for comparison.

### III. Outcomes

A. Statistically significant increase in scores of knowledge assessment tests for nurses and expectant parents.

#### 1. Knowledge Assessment Test Scores

- a) Nurses: pretest  $M= 81\%$ , posttest  $M=95\%$ ,  $p<.001$
- b) Expectant Parents: pretest  $M= 87\%$ , posttest  $M= 91\%$ ,  $p<.003$

B. Primary cesarean section rates of hospital facility

#### 1. Cesarean Section Numerical Reports

- a) Pre project rate was 37.5%
- b) Post project rate to be released on December 23<sup>rd</sup>, 2018

### IV. Conclusion

A. The Labor Progressive Environment can effectively promote vaginal delivery.

1. A systematic approach is utilized to create an environment that encourages continuous labor support and provides access to evidence based tools and techniques to advance the progression of labor towards vaginal birth.
2. The LPE project's activities and interventions led to a positive impact on the unit, nurses, patients and family members.
  - a) Nurses increased their knowledge of the concept of continuous labor support and tools that could be utilized to promote labor progress and vaginal delivery.
  - b) The patient and family increased their knowledge of comfort and coping measures & techniques that can be beneficial during labor.

B. Implications for Clinical Practice

1. Implementation of a labor progressive environment can effectively empower the obstetrical nurse, increase the knowledge of patients and families, reduce primary cesarean section rates, and ultimately improve maternal/newborn health outcomes.
2. Future plans include replication of the project's systematic approach in other healthcare facilities to further evaluate the effectiveness in reducing the primary cesarean rate in low risk pregnancies.

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