

# Florida Perinatal Quality Collaborative

AT THE LAWTON AND RHEA CHILES CENTER FOR HEALTHY MOTHERS AND BABIES



Partnering to Improve Health Care Quality  
for Mothers and Babies

## Literature E-Bulletin on Non-Medically Indicated Deliveries <39 Weeks Gestation

Dear Perinatal Care Providers: Below is a list of recent literature on the issue of non-medically indicated deliveries <39 weeks gestational age. These references are provided to you by the Florida Perinatal Quality Collaborative through the generous support of a grant from the March of Dimes. You can click on the reference and go directly to the PubMed abstract for the article and access available full text articles. If you have any questions, please contact us at [fpqc@health.usf.edu](mailto:fpqc@health.usf.edu) or by phone at 813-974-8888.

[Jensen JR, White WM, Coddington CC. Maternal and Neonatal Complications of Elective Early-Term Deliveries. Mayo Clinic Proc. 2013;88\(11\):1312-1317.](#)

A detailed review that outlines the maternal and neonatal risks of early elective delivery and summarizes the evidence for effective strategies to reduce the rates of <39 week non-medically indicated deliveries. Approximately 10-15% of all deliveries in the US are performed before 39 completed weeks without a true medical indication for an early delivery, despite ACOG's longstanding recommendation against this practice. The health risks associated with early elective delivery before 39 completed weeks for the neonate include: increased mortality rates; greater risk of respiratory morbidity such as transient tachypnea of the newborn, pneumonia, ventilator requirement, and oxygen and surfactant use; increased risk of cerebral palsy (1.9 times higher at 37 weeks and 1.3 times higher at 38 weeks than at 39 or 40 weeks); and higher rates of NICU admission. Even after a positive fetal lung maturity test, the risks are still higher for the newborn, because other organ systems may not be fully mature. In addition, each additional week of gestation confers an increase in scores on the Mental Development Index and the Psychomotor Development Scale in the Bayley Scales of Infant Development, for which increases in scores still persist after adjusting for birth weight and SES. Maternal complications of early elective deliveries include: longer labors (when the cervix is unfavorable), more interventions during labor (increased use of vacuum and forceps in electively induced labors), and higher rates of cesarean delivery (OR 1.89 when labor is electively induced). Additionally, each cesarean section increases risks for future pregnancies with a higher incidence of adhesion formation, greater risk of uterine rupture, and abnormal placentation such as placenta accreta (RR of 1.3 during second cesarean delivery and an RR of 2.4 during the third). Strategies to reduce NMI deliveries are effective in reducing the rate of early-term elective deliveries, with a hard-stop approach being the most effective. With a national quality benchmark of less than 5% for early elective deliveries and required reporting for Medicaid, The Joint Commission and other authorities, many hospitals and practices will need to implement a strategy to reduce EED rates.



[Womack LS, Sappenfield WM, Clark CL, Hill WC, Yelverton RW, Curran JS, Detman LA, Bettegowda VR. Maternal and hospital characteristics of non-medically indicated deliveries prior to 39 weeks. \*Matern Child Health J.\* 2014 DOI 10.1007/s10995-014-1433-z](#)

This study was conducted using Florida's 2006 and 2007 linked birth certificate and inpatient record files to better understand maternal and hospital characteristics correlated with non-medically indicated (NMI) early delivery in Florida. Only births considered 'at-risk' for NMI delivery were included, preterm births prior to 37 weeks gestation and births to mothers or infants with medical conditions present prior to and during pregnancy that might require early delivery (as defined by TJC) were excluded. The analysis, calculated using generalized estimating equation for multinomial logistic regression, indicated that NMI deliveries before 39 weeks' occurred in 8.8% of births to women without a previous cesarean and in 43.7% of births to women with a previous cesarean. In women without a prior cesarean, NMI deliveries occurred more often to: non-Hispanic white (ARR: 1.41, 95% CI 1.31-1.52) and privately insured (ARR: 1.42, 95% CI 1.26-1.59) women, and to those who delivered in hospitals with <500 births per year. NMI primary cesareans were more likely in women who were: older than 35 years (ARR 2.96, 95% CI 2.51-3.50), non-Hispanic white (ARR: 1.44, 95% CI 1.30-1.59), and privately insured (ARR: 1.43, 95% CI 1.17-1.73). Hospital characteristics associated with increased NMI primary cesarean deliveries included: <30% nurse-midwife births, <500 births per year, and hospitals in large metro areas. This study was the first to examine hospital characteristics associated with NMI early delivery and demonstrates the importance of education and quality improvement initiatives for decreasing NMI delivery, particularly for those hospitals that meet the study characteristics, such as small volume obstetrical hospitals and hospitals with less than 30% nurse-midwife attended deliveries.

[Clark SL, Meyers JA, Milton CG, Frye DR, Horner S, Baker A, Perlin JB. Validation of the joint commission exclusion criteria for elective early-term delivery. \*Obstetrics & Gynecology.\* 2014;123\(1\):29-33.](#)

In an effort to validate the Joint Commission's exclusion criteria for elective early-term deliveries, the authors conducted a thorough review and critical analysis of all "non-compliant" cases that occurred in a large healthcare system in the second half of 2012. With a sample size of 107,145 deliveries, 205 (.2%) were reported as noncompliant with PC-01. Upon further review of the non-compliant "fallout" cases, 55% were found to be for reasons that are not generally recognized as valid medical indications for an early-term delivery and the distribution of the outliers was skewed with 57% of cases originating in 7% of facilities. Ten percent of fallouts resulted from valid indications for delivery not included on the JC exclusion list and were primarily unusual, extreme variations of these conditions. Twenty-five percent of fallouts represented valid indications not represented by ICD-9-CM code. Eight percent of fallouts were a result of imprecise physician charting; only 2% represented chart abstraction errors. The authors discuss the validity of the PC-01 measure and considering the complexity of this issue feel that an approximate 98-99% capture rate in a coding-based system is remarkable. They discuss the need to further evaluate benchmarks, however, because many facilities may not reach 'accepted' benchmarks due to low delivery volume on a quarterly basis – leading to low denominators for PC-01 measure calculations. In that light, however, it is very possible for most facilities to have a 100% compliance rate in most quarters. The authors discuss the importance of a hard-stop approach to effectively reducing elective early-term deliveries.



Hoffmire CA, Chess PR, Saad TB, Glantz JC. Elective delivery before 39 weeks: the risk of infant admission to the neonatal intensive care unit. *Matern Child Health J.* 2012;16:1053-1062

A retrospective cohort study was conducted for all singleton deliveries that occurred between 360/7 and 386/7 weeks' gestation from 2006-2007 in a large New York State hospital. The objective was to estimate the rate of early elective deliveries occurring between 360/7 and 386/7 weeks and to compare NICU admission rates between elective and non-elective deliveries. Their results indicated that 32.8% of all births before 39 weeks were considered elective; 20.7% of vaginal births and 55.7% of cesarean deliveries. Electively delivered infants were 46% more likely to be admitted to the NICU compared to infants born non-electively. The results indicated that babies born electively or by non-elective cesarean, were at greater risk of NICU admission than babies born via non-elective vaginal delivery. The adjusted relative risks (RR) were: elective vaginal RR 1.40 (95% CI: 1.00 – 1.94), elective cesarean RR 2.05 (95% CI: 1.53 – 2.76), and non-elective cesarean RR 2.00 (95% CI: 1.50 – 2.66). The authors conclude, "Elective delivery status remained an independent predictor of NICU admission after accounting for maternal, infant, and delivery characteristics known to increase the risk of NICU admission." Elective delivery before 39 weeks poses significant, unnecessary risk to the neonate.

Safe prevention of the primary cesarean delivery. *Obstetric Care Consensus No.1. American College of Obstetricians and Gynecologists. Obstet Gynecol* 2014; 123:693-711.

The American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM) have published a joint consensus concerning the need to safely prevent primary cesarean sections for the improvement of maternal and infant health. For example, a woman's risk of amniotic fluid embolism is 3.3-7.7:100,000 for a vaginal birth and increases to 15.8:100,000 for a cesarean delivery; her risk of maternal mortality is 3.6:100,000 for a vaginal birth and 13.3:100,000 for a cesarean. In addition, because the risks of cesarean deliveries increase with each subsequent cesarean, it is crucial to reduce the rate of primary cesarean sections. This in-depth review addresses various factors that contribute to the high rate of primary cesarean section in the United States and makes recommendations for evidence-based care that will serve to decrease this rate. Included in the report are evidence-based recommendations about topics such as, defining and managing the first and second stage of labor, fetal heart rate monitoring, induction of labor, fetal malpresentation, twin gestation, and other management approaches to reduce primary cesareans. Labor support professionals, such as doulas, are also recommended as an effective cesarean reduction strategy. Also addressed is the importance of using systemic interventions to facilitate local culture and attitudinal change of providers regarding the issue of obstetrical management and care, especially regarding cesarean surgeries. Waiting until at least 39 weeks to induce or schedule a non-medically indicated cesarean is an additional factor that can reduce the primary cesarean section rate and benefit maternal and infant health.

To learn more about the FPQC, please visit us at <http://health.usf.edu/publichealth/chilescenter/fpqc>

Compiled by FPQC Research Assistant Randi McCallian, MPH, CLC, CD(DONA)

The FPQC is pleased to provide additional resources to help reduce rates as part of Florida's Campaign to Reduce Early Elective Deliveries, including our "Making It to 39 Weeks" Newsletter, Tools for Dialogue, and "We Just Haven't Gone Far Enough" Video.

Please visit us at <http://health.usf.edu/publichealth/chiles/fpqc/EED> or contact us at [FPQC@health.usf.edu](mailto:FPQC@health.usf.edu) for more information.



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