Examining the EVIDENCE

Are sweeping efforts to reduce primary CD rates associated with an increase in maternal or neonatal AEs?

Not measurably, according to this analysis of cross-sectional data from 56 hospitals with more than 119,000 deliveries as part of the California Maternal Quality Care Collaborative (CMQCC) statewide effort to reduce primary cesarean delivery (CD) rates. No significant difference in maternal or neonatal adverse events (AEs) were reported before (2015), compared with after (2017), implementation of the program, suggesting that introduction of this quality improvement bundle did not measurably compromise patient safety.


EXPERT COMMENTARY
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Cesarean delivery can be lifesaving for both mother and infant. When compared with successful vaginal delivery, however, CD is associated with higher maternal complication rates (including excessive blood loss requiring blood product transfusion, infectious morbidity, and venous thromboembolic events), longer hospital length of stay, and higher cost. While the optimal CD rate is not well defined, it is generally accepted that the CD rate in the United States is excessively high. As such, efforts to reduce the CD rate should be encouraged, but not at the expense of patient safety.

Details about the study
In keeping with the dictum that the most important CD to prevent is the first one, the California Maternal Quality Care Collaborative (CMQCC) in 2016 introduced a large-scale quality improvement project designed to reduce nulliparous, term, singleton, vertex (NTSV) CDs across the state. This bundle included education around joint guidelines issued by the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine on reducing primary CDs, introduction of a CMQCC

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The NTSV CD rate decreased from 29.3% to 25% without significantly increasing 6 patient safety measures. The current report suggests that implementing a large-scale quality improvement initiative to reduce the primary CD rate can likely be done safely, without a significant increase in maternal or neonatal morbidity.

Whether or not implementation of the bundle resulted in an inappropriate delay in indicated CDs and, as such, in an increase in maternal or neonatal morbidity is not known. To address this issue, Main and colleagues collected cross-sectional data from more than 50 hospitals with more than 119,000 deliveries throughout California and measured rates of chorioamnionitis, blood transfusions, third-or fourth-degree perineal lacerations, operative vaginal delivery, severe unexpected newborn complications, and 5-minute Apgar scores of less than 5. None of the 6 safety measures showed any difference when comparing 2017 (after implementation of the CMQCC bundle) to 2015 (before implementation), suggesting that patient safety was not compromised significantly.

### Study strengths and weaknesses

Strengths of this study include its large sample size and multicenter design with inclusion of a variety of collaborating hospitals. Earlier studies examining the effect of standardized protocols to reduce CD rates have been largely underpowered and conducted at single institutions.2-6 Moreover, results have been mixed, with some studies reporting an increase in maternal/neonatal adverse events,2-4 while others suggesting an improvement in select newborn quality outcome metrics.5 The current study provides reassurance to providers and institutions employing strategies to reduce NTSV CD rates that such efforts are safe.

This study has several limitations. Data collection relied on birth certificate and discharge diagnoses without a robust quality audit. As such, ascertainment bias, random error, and undercounting cannot be excluded. Although the population was heterogeneous, most women had more than a high school education and private insurance, and only 1 in 5 were obese. Whether these findings are generalizable to other areas within the United States is not known.

### References