

The Annie E. Casey Foundation

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**CESAREAN SECTION DELIVERY NOT ALWAYS MORE  
EXPENSIVE THAN VAGINAL DELIVERY**  
**Study looks beyond delivery trends to mother and baby health**

BALTIMORE, MD – A new study in the *Journal of Evaluation in Clinical Practice* found that contrary to popular belief, Cesarean section deliveries are not always more costly than vaginal deliveries. By combining total hospital charges for mother and her newborn, the report authors found that a greater percentage of births in Maryland by vaginal delivery cost more than a Cesarean section delivery. The study can be found at <http://www.blackwell-synergy.com/doi/full/10.1111/j.1365-2753.2006.00690.x>

This finding emerged when the researchers compared total charges for babies born vaginally versus babies born through Cesarean section and whether or not those babies were transferred to the hospital's neonatal intensive care unit (NICU). The linked mother-baby records showed that for the highest cost cases – the top 25 percent of all cases by cost – the mean charges for a vaginal delivery were statistically significantly higher than the mean charges for a Cesarean delivery (\$17,624 versus \$13,805).

The Maryland-based study – the first stage of a three-year project on birth outcomes and costs – also found that maternal race had a significant influence on the cost through its association with mode of delivery and NICU utilization patterns. While there were no differences in the rates of Cesarean delivery by race, the authors found that the presence of maternal co-morbidities – especially hypertension and diabetes in African American women – was associated with higher hospital and NICU charges for newborns following either vaginal or Cesarean section deliveries

“Our findings seem to indicate, for the first time in Maryland, that linking maternal and newborn records is fundamental for understanding prenatal care and clinical practice,” said principal investigator Dr. Vahé Kazandjian. “From a policy and payment point of view, one should not assume that the true cost of delivery is always higher for a Cesarean section.”

This evidence comes at a time when rates of Cesarean section – one of the most frequently performed surgical procedures on women – are steeply rising. In fact,

Cesarean section deliveries are at an all-time high in the United States, with almost one in three deliveries now conducted through this procedure. Starting in 1991 in Maryland, a six-year decline in the rates of Cesarean section procedures was followed by a steep five-year increase – 24 percent in 1991, 22 percent in 1998, and almost 30 percent in 2004 – that mirrored the overall U.S. trend.

While these rising rates of Cesarean section delivery have in turn raised health care cost containment issues, this study suggests that the real focus for cost containment might be on management of maternal co-morbidities and early prenatal care rather than simply reducing the number of Cesarean deliveries.

“Too often the focus on delivery trends fails to include the whole health of mother and baby. This study demonstrates the importance of prenatal care and moves the discussion beyond the rising Cesarean trend and cost of vaginal delivery versus C-section,” said Paula Broderick, American Hospital Association maternal and child health section chair and chief nursing officer at Nemours/Alfred I. duPont Children's Hospital in Wilmington, Del. “These initial findings will help the field revisit ideas around costs as drivers and the necessity of prenatal care.”

The study used 2004 data and was conducted with three urban Baltimore hospitals that voluntarily enrolled in the study. A retrospective, often manual, review of 400 mother-newborn records from each hospital was conducted. The total sample was 1,201 records.

The project was funded by the Annie E. Casey Foundation, located in Baltimore, Maryland.

“This study raises significant questions about demographic variables, mode of delivery and costs,” said Dr. C. Patrick Chaulk, Senior Associate for Health at the Annie E. Casey Foundation, and co-author of the paper. “We hope that the ‘true cost’ findings of this study will compel policy makers and payors to ask new questions about mode of delivery, prenatal care, maternal demographics, and NICU utilization in Maryland,” said Dr. Chaulk.

The next phase of the project will focus on additional, detailed clinical variables of both mother and newborn, as well as the importance of prenatal care, with a larger number of Baltimore hospitals participating in this second study.

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