

Hospital management practices may put women at risk for C-sections during childbirth

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The way certain hospital labor and delivery units are managed may put healthy women at greater risk for cesarean deliveries and hemorrhage, according to a new study from Harvard T.H. Chan School of Public Health researchers and colleagues.

The study, which will be published online July 11, 2017 in *Obstetrics & Gynecology*, is the first to link [management](#) of unit culture, nursing, and patient flow to maternal health outcomes.

"It is hard to predict when women will go into labor, how long labor will take, and which women may require critical resources like the operating room or blood bank. The way managers address this uncertainty appears to be an independent risk factor for a woman getting a C-section," said senior author Neel Shah, an obstetrician and Harvard Chan School researcher who leads the Delivery Decisions Initiative at Ariadne Labs, a joint center of Harvard Chan School and Brigham and Women's Hospital.

Maternal health outcomes vary dramatically across hospitals, including 10-fold variation in cesarean delivery rates. Previous research has demonstrated that this hospital-level variation is not well explained by women's health or preferences. In just one generation, the U.S. has seen a 500% increase in the number of C-sections, placing women at significant risk for surgical complications. Cesarean deliveries are

associated with increased rates of severe morbidity (such as hemorrhage or infection), longer hospitalizations, and greater average costs than vaginal deliveries—and approximately 45% of these procedures may be avoidable, according to the study.

To conduct the study, lead author Avery Plough, an Ariadne Labs researcher, interviewed 118 nurse and physician managers at 53 diverse hospitals about three areas of management: (1) unit culture management, including practices that facilitate communication and collaboration among staff; (2) nursing management, including practices that ensure appropriate nurse staffing levels; and (3) patient flow management, including practices that adjust resources to accommodate surges in patient arrival. Hospitals were categorized as having either "reactive" management practices that address management problems as they occur or "proactive" management practices that pre-emptively mitigate challenges before they arise.

The study looked at how those management practices affected the health of low-risk women having their first child. The results showed that [women](#) receiving care at hospitals with the most proactive unit culture management had a higher risk of cesarean [delivery](#), postpartum hemorrhage, blood transfusion, and prolonged [hospital](#) length of stay. These counterintuitive findings may indicate that managers at these hospitals are focused on achieving different goals, such as neonatal outcomes or financial performance, which are not always aligned with maternal wellbeing.

The research is an important cornerstone of Shah's Delivery Decisions Initiative at Ariadne Labs to identify the key drivers of dangerously high C-section rates and to develop a [health](#) system-level solution to the problem.

More information: Avery C. Plough et al, Relationship Between

Labor and Delivery Unit Management Practices and Maternal Outcomes, *Obstetrics & Gynecology* (2017). DOI: [10.1097/AOG.0000000000002128](https://doi.org/10.1097/AOG.0000000000002128)

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