

# New intervention decreases cesarean rate and improves maternal blood loss

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New research from Boston Medical Center suggests that hourly patient evaluation and documentation of the birthing plan in the second stage of labor decreases the second-stage of labor duration, the rate of cesarean sections, maternal blood loss, and rates of hemorrhage and transfusion. Published in the *Journal of Maternal-Fetal and Neonatal Medicine*, the team identify hourly second stage documentation as a uniquely non-

medical intervention performed proactively before delivery. Current interventions to reduce blood loss are typically done reactively post-delivery and there have been no proven interventions to decrease cesarean rates.

Patients with hourly evaluation and documentation had a likelihood of cesarean delivery of 8.2 % on average, down from 20.3 % without the intervention. This intervention also improved:

- The duration of the second-stage of [labor](#), reducing the average time by more than half to 98 minutes from 178 minutes
- The total [blood loss](#), reduced to an average of 514 mL from 668 mL
- The hemorrhage rate, reduced by 7.4 % to an average of 12.5 % compared to 19.9 %
- The transfusion rate, reduced to 3.2 % from 5.6 %

These differences in outcomes were also observed when the evaluation was performed and documented within every 75 minutes.

Every patient who delivers a baby vaginally experiences this "pushing" stage of labor. Cesarean rates and maternal morbidity typically increase with the duration of the second stage of labor. As part of a quality improvement project, the obstetrics team ensured that delivery providers were working closely with patients as they pushed. Results show that patients who had hourly evaluations had a decreased time to delivery, which may be part of the reason for the other improved outcomes.

"We are continually looking for ways to improve maternal outcomes and better understand how attention to patients during labor can improve cesarean rates and blood loss," says Ronald E. Iverson, Jr, MD, MPH, Director of Quality and Safety and Vice-Chair of Obstetrics in the Department of Obstetrics and Gynecology at Boston Medical Center,

and an assistant professor of obstetrics and gynecology at Boston University School of Medicine. "Evaluating and communicating with our patients in the second stage is something we can all improve upon, so my hope is that these findings will give us more reason to be with our laboring patients during this time."

This [retrospective cohort study](#) included 1,498 women who delivered at an urban, tertiary care hospital and underwent a second stage of labor greater than 60 minutes between June 2016 and May 2019. The study compared 440 patients who had hourly evaluation and documentation throughout the second stage of labor with 1,058 who did not. The cesarean delivery rate, second-stage duration, quantitative blood loss, hemorrhage and blood transfusion rates, and fetal outcomes were analyzed. This diverse study included 32 % of patients who identify as Black or African American, 36 % Latinx or Hispanic, and 17 % white.

"Standardizing care practices improves outcomes for all patients," says Katharine White, MD, the vice chair of academics in the Department of Obstetrics and Gynecology at Boston Medical Center and an associate professor of obstetrics and gynecology at Boston University School of Medicine. "Improving our attention to patients during this important stage of labor involves the entire care team, and seeing the improvement in patient outcomes has really motivated us to continue this process and stay committed to finding new areas to improve upon for the benefit of our patients."

**More information:** Ronald E. Iverson et al, The association of hourly second-stage documentation with cesarean delivery and maternal blood loss, *The Journal of Maternal-Fetal & Neonatal Medicine* (2022). [DOI: 10.1080/14767058.2022.2044776](https://doi.org/10.1080/14767058.2022.2044776)

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