7.25—7.36), base deficit of 3.4 (IQR, 6.10—2.40), and 1- and 5-minute Apgar scores of 9/9 (IQR, 8—9 and 9—10, respectively), followed by the causative events that occurred hours to days after birth (median, 76 hours; IQR, 13.0—306.5). Drs Evans and Britt’s FRI covers only 1 hour after birth. Therefore, our postnatal cases could have been prevented by other methods, such as intensive antibiotic therapy and more optimal blood glucose monitoring.

As mentioned by the authors of the letter, we must continue our efforts to improve perinatal management. Further work is ongoing to identify the appropriate timing of intervention during labor to clarify how we can deal with NR-NR, unclassified, and R-R FHR patterns to reduce brain injury.

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REFERENCES

TO THE EDITORS: We read with great interest Chinn et al’s report on the Eunice Kennedy Shriver National Institute of Child Health and Human Development’s (NICHD) workshops to identify priorities for maternal health research. We strongly agree with their recommendation for investments in research to identify policies and practices that address unacceptably high rates of maternal morbidity and mortality in the United States and racial disparities in these outcomes. However, we note a major omission in the stated research priorities: implementation research—the scientific study of strategies to promote the effective, equitable uptake of evidence-based practices into routine care. Implementation research seeks to shorten the large lag—estimated at 17 years—between a clinical advance and its incorporation into routine care. Given this lag, research investments that identify effective practices will not yield population-level improvements without complementary investments in implementation research.

The need for implementation research in maternal healthcare is demonstrated by strikingly unwarranted variation. For example, a recent study reported large differences in cesarean delivery rates after induction of labor between hospitals and physicians. State perinatal quality improvement collaboratives are working to minimize such outcome variation by standardizing the use of evidence-based practices, but the success of such collaboratives is inconsistent. In California’s collaborative to reduce severe maternal morbidity from hemorrhage, one-third of participating hospitals did not succeed in reducing morbidity. Variability in both clinical outcomes and quality improvement success suggests that maternal health initiatives could be greatly enhanced by research identifying barriers, facilitators, and effective strategies for implementing evidence-based practices in routine care delivery in maternity settings.

The conditions are right for rapid advances in implementation research for maternal health. In such diverse fields as mental health, oncology, and surgery, research incorporating rigorous implementation frameworks and outcome measures has demonstrated success in accelerating the use of evidence-based practices in routine care. Among maternal health researchers, there is growing interest and expertise in implementation science. At the 2020 Annual Conference on...
the Science of Dissemination and Implementation in Health, more than 100 individuals registered to participate in a special adjunct session on maternal health. The NICHD is prepared to fund implementation research studies and capacity building through 2 implementation research program announcements and training grant mechanisms. Adding implementation research to the list of maternal health research priorities is urgently needed to ensure that evidence generated by research investments is more efficiently and effectively translated into real-world improvements for patients and communities.

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Prioritize implementation research to effectively address the maternal health crisis

We thank Callaghan-Koru and colleagues for their thoughtful and thought-provoking comments in the Letter to the Editors. Although we did not explicitly mention implementation research in our publication, we strongly agree with the authors that prioritization of and investments in implementation research are essential components necessary for a complete research agenda on maternal health.

The intent of the report of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) workshops was to summarize the workshops’ presentations and discussions. At the Community Engagement Forum for Improving Maternal Health, implementation research was among the topics identified as integral to mitigating maternal morbidity and mortality. Specifically, forum participants mentioned that few implementation research studies are being conducted to determine why effective interventions may not reach patients or segments of the patient population. The difficulty in executing these studies partially stems from the high variability and complexity of hospital cultures and the closing of many labor and delivery units. We appreciate the opportunity to bring greater attention to these remarks.

The NICHD recognizes the role of implementation science in improving the health of pregnant and postpartum individuals. In 2020, the National Institutes of Health (NIH) (led by the NICHD, the NIH Office of the Director, and the Office for Research on Women’s Health) launched the Implementing a Maternal Health and Pregnancy Outcomes Vision for Everyone (IMPROVE) initiative to support research to reduce preventable causes of maternal deaths and improve health for women before, during, and after delivery. The IMPROVE initiative explicitly highlights identifying barriers and opportunities and design strategies for implementing clinical guidelines on blood pressure management, physical activity, and diet tailored to high-risk communities as an area of specific research interests. The NICHD is supporting 4 awards in response to the Notice of Special Interests published under the IMPROVE initiative, totaling about $1 million. Moreover, the NIH overall encourages research in implementation sciences. Specifically, the NICHD Office of Global Health will hold a virtual meeting addressing dissemination and implementation science on February 24, 2021. These panel discussions and presentations will be recorded and available for future viewing at https://www.nichd.nih.gov/