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Overview Report

LABOR INDUCTION AND AUGMENTATION IN INDIA

How the Use of Uterotonic Medications Affects Stillbirth, Neonatal Mortality, and Use of Cesarean Deliveries

OVERMEDICALIZATION OF CHILDBIRTH IS A GROWING GLOBAL PROBLEM, increasing the use of medical interventions and costs without a clear health benefit and often putting both mother and baby at risk for harm and additional health complications.¹ The overuse of cesarean deliveries has received the most global attention,² but the related practice of overusing uterotonic medications for labor induction and augmentation is also a significant concern, especially in settings without adequate safeguards and staffing.^{3,4} This brief serves as a complement to the [Labor Induction and Augmentation Practices in India story deck](#); it outlines how that resource can be used as well as the next steps for engagement in this work.

WHAT IS THE PROBLEM?

Labor induction and augmentation with uterotonic medications are common practices used to manage childbirth; however, they also increase the risk of complications for mothers and newborns (see table 1). Safeguards to reduce the risk of complications are limited in many settings. Such safeguards include frequent and routine monitoring of fetal heart rate and uterine contractions during labor; ensuring adequate skilled staff to monitor and recognize danger signs and take action as needed;^{5,6} ensuring staff adherence to evidenced-based protocols that guide timing and dose of medication;^{7,8} and, for labor induction, having access to accurate gestational dating.⁹

The use of uterotonics for induction and augmentation is widespread, and the prevalence varies extremely among settings.¹⁰ Evidence suggests pervasive uterotonic use during labor occurs in many settings even without a medical indication and when safeguards are lacking.^{11,12}

OPPORTUNITIES AND CHALLENGES IN INDIA

India is the most populous country in the world, and nearly 1 in 5 babies globally are born in India.¹³ The country has made great strides in increasing in-facility deliveries and improving the quality of care and continues to work to reach ambitious targets in reducing both maternal and perinatal mortality. However, stillbirth, early birth asphyxia, and neonatal death remain major concerns; at the same time, the growing cesarean delivery rate puts a growing burden on resources with diminishing returns for health. The documented association between these health outcomes and the use of uterotonics to induce and augment labor is an important topic to explore, with potentially wide-ranging impacts on maternal and perinatal mortality.

Existing research has shown high rates of labor augmentation in India (>50% of births),¹⁴ and a wide variation of the use of labor induction, ranging from 3% to 84%.¹⁵ India is not unique in the pervasiveness of uterotonics use during childbirth. However, given India's commitment to quality and reducing maternal and neonatal mortality, it is poised to lead the world in developing sustainable strategies to ensure the safe, rational use of uterotonics.

A recent systematic review on labor induction and augmentation in India found 64 publications since 2011;¹⁶ however, varied measurement and data collection methods as well as small sample sizes make it difficult to compare results across studies, facility types, regions, or time periods. Most of these studies were conducted in public health facilities, with fewer performed in the private sector or in community settings.

Table 1. Maternal and Perinatal Complications Associated With Pharmaceutical Labor Induction and Augmentation in Low-Resource Settings

Labor induction	<p>Definition: Stimulating the uterus to start labor^A</p> <p>Risks: Fetal distress, meconium aspiration, premature birth, uterine rupture,^B and subsequent need for cesarean delivery</p>
Labor augmentation	<p>Definition: Stimulating the uterus to increase the frequency, duration and intensity of contractions during labor^C</p> <p>Risks: Stillbirth, Day 1 neonatal death, need for newborn resuscitation, low Apgar score, neonatal encephalopathy, and uterine hyperstimulation and rupture^D</p>
<p>Sources:</p> <p>A. World Health Organization. (2018). Recommendations on induction of labour, at or beyond term.</p> <p>B. Vogel, J.P., Souza, J.P., & Gülmezoglu, A.M. (2013). Patterns and outcomes of induction of labour in Africa and Asia: A secondary analysis of the WHO global survey on maternal and neonatal health. <i>PLoS One</i>, 8(6), e65612.</p> <p>C. World Health Organization. (2014). Recommendations for augmentation of labour.</p> <p>D. Kujabi, M.L., et al. (2022). Labor augmentation with oxytocin in low- and lower-middle-income countries</p>	

MOMENTUM Knowledge Accelerator has been exploring the normative overuse of uterotonics throughout the Indian health system and in communities. As part of these efforts, we conducted a literature review and a grey literature search to identify gaps in our current knowledge of the unindicated use of uterotonics for labor induction and augmentation. Given the typical delay in publishing formal studies, coupled with the dynamically changing health system in India, we also sought to solicit current voices on the topic of labor induction and augmentation. We conducted key informant interviews with a range of external partners, including obstetricians, nurses, accredited social health activists, private sector practitioners, researchers, and implementers, and used a convenience sampling approach based on experts familiar with the field. With the results, we created a story deck to outline the importance of this issue and to promote a common understanding of what is known about these longstanding practices to enable key stakeholders to strategically consider next steps to address this gap in quality of care.

CALL TO ACTION

The *Labor Induction and Augmentation Practices in India* story deck is intended to serve as an advocacy tool to mobilize the necessary stakeholders on a broader campaign addressing birth asphyxia, stillbirth, and other poor neonatal and maternal outcomes related to unindicated and non-protocolized use of labor induction and augmentation. It is intentionally designed to be accessible and relevant for a variety of audiences, from those with no medical background to those working in labor and delivery settings.

The story deck can help build momentum for additional targeted research on this issue and highlight policy and training gaps that need addressing. While the World Health Organization has published guidelines on the use of non-protocolized uterotonics in both labor induction and labor augmentation, the Government of India has published guidelines only on labor augmentation. Further details for a comprehensive, evidenced-based protocol on optimal medications, doses, titration schedules, and timing, as well as standardized documentation, are needed to eliminate ambiguities surrounding appropriate induction and augmentation practices.

Although existing evidence of the unindicated and non-protocolized use of uterotonics is growing, proven, sustainable strategies to reduce these practices and ensure safeguards are still lacking. India is well positioned to lead the development of strategies and efforts to reduce unnecessary and non-protocolized uterotonics use during labor to improve the safety and quality of childbirth care and to work toward the important goals of reducing neonatal mortality, birth asphyxia, and overuse of cesarean deliveries.


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