

Early Elective Delivery

Executive Summary

The final few weeks of a pregnancy are critical for a baby's development. Cesarean section (C-section) deliveries before 39 weeks, and induction without medical indication, also known as early elective delivery (EED), are both public health concerns that affect birth outcomes and infant wellbeing. EEDs cause significant risks to babies and pose a documented risk of potential complications for the mother. Despite longstanding recommendations from the American Congress of Obstetricians and Gynecologists (ACOG) against the practice, research indicates about 10-20 percent of all deliveries are induced labor or C-section before 39 weeks without medical indication.¹ There are no known benefits to EEDs.

National and state public health programs focused on reducing infant mortality and improving birth outcomes now include efforts to reduce rates of EEDs. At the national level, ASTHO's Healthy Babies Initiative brought infant mortality and preterm birth to the forefront within each state and territorial health agency (S/THA). Grants from the Centers for Medicare and Medicaid Services (CMS) have enabled providers to educate patients and each other about the effects of EEDs, in addition to stimulating quality improvement efforts. HRSA's Collaborative Improvement & Innovation Network (CoIIN) to Reduce Infant Mortality has enabled states to work together to achieve common goals in reducing EEDs. S/THAs are also working with numerous partners including ACOG, March of Dimes, Hospital Engagement Networks, hospital associations, and insurance companies to change physician and patient behavior around EEDs. National rates of EEDs are declining due in part to much of the work done by these and other organizations.

What is Early Elective Delivery?

EEDs, or non-medically indicated early deliveries, are births that occur before 39 weeks of pregnancy (usually between 37-38 weeks) for no specific medical reason.² EEDs are performed via induced labor or C-section. ACOG supports the implementation of policies that decrease the rate of EEDs and has released [guidance](#) on medical conditions which indicate that early delivery is appropriate.³

Why do EEDs Happen?

Due to a number of non-medical reasons, a woman and her physician may decide to induce labor or schedule a C-section before the full term of her pregnancy. Physicians may schedule deliveries for convenience reasons, scheduling conflicts, or because of perceived liability concerns.⁴ In addition, physicians may perform EEDs to relieve symptoms during the final stages of pregnancy.⁵ A patient's request for an EED may also be influenced by a lack of personal knowledge; specifically about the risks of delivering early for non-medical reasons, the benefits of carrying a healthy pregnancy to 39-40 weeks, and the lack of decision making between physician and patient.⁶ The decision to perform a C-section may also be influenced by a number of factors, including insurance incentives and efficiencies for providers, casual attitudes about surgery, and lack of risk awareness.⁷

EED is a Public Health Concern

There are no known benefits for EEDs, but the health risks for the baby and mother are significant. Infants born before 39 weeks are at risk for many serious health complications because vital organs, such as the brain, lungs, and liver have not been fully developed.⁸ Approximately 50 percent of cortical volume growth occurs between 34 and 40 weeks.⁹ At 37 weeks, the infant brain is only 80 percent of the

weight of an infant's brain who is born at 40 weeks.¹⁰ Infants born between 37 and 39 weeks are at risk of¹¹:

- Increased neonatal intensive-care unit (NICU) admissions.
- Increased transient tachypnea of the newborn.
- Increased respiratory distress syndrome.
- Increased rate of suspected and proven sepsis.
- Increased newborn feeding problems and other transition issues.
- Increased risk of infant mortality.¹²

Labor induction can cause maternal complications such as increased risk of infection and postpartum hemorrhage due to prolonged labor; increased risk of C-section (which often results in repeat C-sections in subsequent pregnancies); and increased use of instruments such as forceps or vacuum during delivery.¹³ Additionally, invasive internal fetal monitoring devices are used more often during elective inductions as opposed to low-risk spontaneous labor.¹⁴ The use of an internal fetal monitoring device may increase the risk of infection and can cause bruising where the device is placed, and discomfort for the mother upon insertion.¹⁵ Medications to induce labor and to alleviate pain can interfere with the body's natural ability to respond to labor and recover after delivery. Medications can also affect breastfeeding post-delivery.¹⁶

The risks of EEDs are less frequent among infants born between 37 and 39 weeks, but are similar in nature to those of preterm infants and any complications can lead to increased medical costs. The average cost of medical care in the first year of life for a preterm baby covered by the Medicaid program is \$20,000, versus \$2,100 for full-term babies.¹⁷ Medicaid pays for slightly less than half of the nation's births each year. A 10 percent reduction in deliveries occurring before 39 weeks would save more than \$75,000,000.¹⁸ Studies conducted by the March of Dimes show that average employer expenditures for premature/low weight births are over \$50,000, compared to uncomplicated births which cost, on average, less than \$5,000.¹⁹

Rates of Labor Induction, C-Section, and Early Elective Deliveries

Today, about 10-20 percent of all deliveries scheduled as C-section or induced before 39 weeks are not medically indicated.²⁰ Labor induction rates for all singleton births reached an all-time high in 2010 (23.8%) before declining in 2011 (23.7%) and 2012 (23.3%).²¹ The rate of C-sections rose nearly 60 percent between 1996 (20.7%) and 2009 (32.9%) and has since remained at the 2009 rate.²²

The rate of deliveries that occur between 37 and 38 weeks rose nearly 50 percent between 1990 (19.7%) and 2006 (28.9%) but have been on the decline ever since; in 2012, the rate was 24.7 percent.²³ Furthermore, births at 39 weeks rose 17 percent from 2006 to 2012 (25.4% to 29.8%)²⁴ possibly due to national, state, and local efforts to reduce EEDs.

Healthy Babies Initiative, Strong Start, and CoIIN

In 2011, **ASTHO President David Lakey (TX)** issued the ASTHO [President's Challenge: The Healthy Babies Initiative](#) to improve birth outcomes by reducing infant mortality and preterm births in the U.S. The goal of the challenge, issued in partnership with the March of Dimes, is to decrease prematurity by eight percent by 2014. A common strategy for reaching this goal is to reduce EEDs across states. As of December 2013, 11 states and the District of Columbia have met the goal of the initiative, including

Alaska, Arizona, Colorado, Delaware, Indiana, Massachusetts, New York, Rhode Island, Utah, Vermont, and Wyoming. ASTHO shares best practices focused on reducing preterm birth with its members and state health agencies through the [Healthy Babies Clearinghouse](#).

Led by HRSA's Maternal and Child Health Bureau, the [Collaborative Improvement & Innovation Network \(CoIIN\) to Reduce Infant Mortality](#) is a public-private partnership to reduce infant mortality and improve birth outcomes. States from HHS Regions IV, V, and VI learn through technology-enabled teams that tackle common issues and track progress toward shared benchmarks. CoIIN has selected major priority areas by region to reduce infant mortality and improve birth outcomes, including reducing elective delivery before 39 weeks. CoIIN participants include representatives from the state health and state Medicaid agencies. Together with national and federal partners, including ASTHO, CMS, and March of Dimes, CoIIN participants work to address the issue of EEDs and to discuss top priorities that affect infant mortality in their states. In summer 2014, CoIIN will roll out to additional national regions, including I-III, VII-X, and the Pacific Islands.

Other national initiatives that focus on improving birth outcomes and incorporate components to reduce EEDs include, CMS grants to improve prenatal care through the [Strong Start for Mothers and Newborns](#), the National Governor's Association [Learning Network to Improve Birth Outcomes](#), and the March of Dimes [Prematurity Campaign](#).

Policy Options

Hospitals, payers, medical groups, and others enforce different types of approaches or policy options to reduce EED rates. A "hard-stop" policy specifically prohibits or denies payment for elective inductions and C-sections before 39 weeks. "Hard-stop" policies can empower hospital staff to refuse scheduling of any such deliveries. A chain of command, such as a department chair or local/regional maternal-fetal medicine specialist, should be available for cases where indications for early delivery are ambiguous. A "soft-stop" policy is similar to a "hard-stop" policy, however, elective deliveries before 39 weeks are allowed if ordered by the attending physician after a peer review evaluation. An "education-only" policy involves the education and recommendation against EED, but there is no formal policy adopted by medical staff. A recent [study](#) published in the American Journal of Obstetrics and Gynecology found that of the three approaches, a "hard-stop" policy is the most effective at reducing EED rates.²⁵ In addition to the three approaches, there are several other types of hospital policies employed to reduce EEDs. Some states have implemented payment incentives and payment based factors to encourage quality patient care and hospital performance.

Data

Defining the data elements is a critical step in ensuring accurate data collection and reporting on EEDs. To ensure accurate reporting, state health departments must obtain real-time data from hospitals, information about medical indications and gestational age. It is important for states to accurately report data, so any decreases seen in EEDs are actual decreases and not just reflective of a change in the coding. In coordination with their integrity offices, some states have begun conducting universal audits and hospital chart reviews to ensure accuracy of reporting. In addition, states and their integrity offices are working on developing strategies to share this data with hospitals.

Attempting to compare data across states is challenging, as many states have different approaches for tracking medical conditions and documenting EEDs. Additionally, several national data sets exist, and could contain biases depending upon how the data were collected.

State Stories

State health agencies play an essential role in the effort to reduce EEDs. They are neutral conveners and field experts, and provide reach across the state and into multiple agencies. Together, with state and local partners, state health agencies are working to implement programs and policies that address EEDs on an insurance and hospital level. These key strategies will impact the Institute for Healthcare Improvement's [Triple Aim](#) to improve the patient experience of care, improve the health of populations, and reduce per capita cost of healthcare.

Louisiana

The Birth Outcome Initiative (BOI) at the Louisiana Department of Health and Hospitals aims to create a sustainable infrastructure for addressing birth outcomes that lead to healthy babies through healthy mothers. Since the launch in 2010, BOI has partnered with the Louisiana State Medical Society, Louisiana Hospital Association, and the Louisiana Chapter of ACOG on the [39 week initiative](#) to end the practice of EEDs in Louisiana's birthing hospitals.²⁶ As part of the initiative, hospitals sign on for 39 weeks and participate in trainings to receive premium reductions in their malpractice insurance.²⁷ Fifteen of the largest hospitals in Louisiana have received the "Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age" [toolkit](#) to implement these policies. The policies contain data collection and quality improvement tools for measuring and tracking effectiveness overtime.^{28,29}

Massachusetts

The [Massachusetts Perinatal Quality Collaborative](#) was formed in May 2011 to address ongoing perinatal safety and quality issues in the commonwealth, including EED. The collaborative is comprised of the Massachusetts Department of Public Health, Massachusetts Chapter of ACOG, March of Dimes, and healthcare providers. The goal of the collaborative is to reduce the amount of non-medically indicated early deliveries by having member hospitals use a hard-stop approach. The efforts of the collaborative have been successful, as Massachusetts has reduced non-medically indicated EED from 15 percent in 2010 to one percent in 2013.

Oklahoma

In April 2011, the Oklahoma Hospital Association and the University of Oklahoma Health Sciences Center's Office of Perinatal Quality Improvement launched the [Every Week Counts Initiative](#). The quality improvement collaborative is funded by the March of Dimes and Oklahoma State Department of Health. Fifty-two hospitals (90 percent of birthing hospitals in the state) are participating in the effort to eliminate non-medically indicated scheduled cesarean births and inductions before 39 weeks. "The collaborative enables hospitals to identify areas for improvement and compare progress with other hospitals. Many hospitals have shown a strong commitment to reduce non-medically necessary deliveries by instituting hard-stop policies supported by the medical and executive leadership," said **State Health Commissioner Terry Cline**.³⁰ Data collected from the initiative show an 81 percent decrease in total scheduled deliveries between the first quarter of 2011 and the first quarter of 2013.³¹

[South Carolina](#)

In 2011, the [South Carolina Birth Outcomes Initiative](#) (BOI) was formed to improve the health outcomes for newborns throughout South Carolina. Partners included South Carolina Department of Health and Human Services (SCDHHS), South Carolina Hospital Association, South Carolina Obstetrical and Gynecological Society, South Carolina Chapter of the March of Dimes, South Carolina Department of Health and Environmental Control, maternal-fetal medicine physicians from all five regional perinatal centers, BlueCross BlueShield of South Carolina (BCBSSC), and other stakeholders. All 43 birthing hospitals in the state committed to ending EED practices and within one year South Carolina saw a 50 percent reduction in EED.³² As part of the BOI, state Medicaid and BCBSSC eventually stopped paying for non-medically necessary EED. Together, Medicaid and BCBSSC cover 85 percent of the state's births and South Carolina is the first state to create a public-private partnership to address birth outcomes. It is estimated that one million in taxpayer dollars will be saved from delivery costs and seven million from fewer hospitalizations.³³

[Tennessee](#)

In September 2012, the Tennessee Department of Health (TDH) formed [Tennessee Healthy Babies are Worth the Wait](#), a public-private joint collaborative to tackle EED through public awareness campaigns, hospital policies, and real-time data reporting. The collaborative included representatives from TDH, March of Dimes, Tennessee Hospital Association (THA), and the Tennessee Initiative for Perinatal Quality Care (TIPQC). The March of Dimes supported the public awareness campaign and directed its resources toward educating expecting parents. TIPQC, TDH, and THA maternal-fetal medicine leaders sent a joint letter to all Tennessee hospital CEO's asking them to sign a public commitment to enact hard-stop policies. All state hospitals signed the pledge and reported aggregate data to the hospital association. TDH would not have had access to this type of data without the collaborative.

[Texas](#)

In 2011, **Texas Health Commissioner David Lakey** launched the [Healthy Texas Babies Initiative](#). This initiative draws from emerging best practices and involving multiple partners for a comprehensive approach to improving birth outcomes. In the same year, the state legislature enacted [House Bill 1983](#) to prohibit Medicaid reimbursements to hospitals for early non-medically necessary deliveries. More than 55 percent of all births in Texas are paid by Medicaid, costing \$2.2 billion per year in birth and delivery-related services for moms and infants through their first year.³⁴ State and local health agencies worked with local hospitals, obstetrical providers, and families to increase awareness of the benefits of delivery at full term. The states early-term birth rate decreased from 31 percent to 28 percent between 2010 and 2012, saving \$5.4 million; full-term deliveries increased from 43 percent to 48 percent during the same time (Dr. David Lakey, personal communication, June 17, 2014).

[Washington](#)

During the 2009-2010 legislative session, Washington State passed the [safety net assessment law](#) which gives hospitals incentives to change their practice. Hospitals can earn a one percent quality incentive based on five Medicaid quality measures, including elective delivery before 39 weeks. The program is funded through hospital contributions to the safety net assessment and federal matching dollars.³⁵ In 2011, the state legislature passed [House Bill 2058](#), which appropriated \$300,000 for the state Health Care Authority to develop guidelines for the appropriate and effective role of C-sections and early

induced labor.³⁶ These measures have been successful and the EED rate has since dropped from 15.3 percent in 2010 to 7.2 percent in 2012.³⁷

¹ Clark SL, Miller DD, Belfort MA, Dildy GA, Frye DK, Meyers JA. Neonatal and maternal outcomes associated with elective term delivery. *American Journal of Obstetrics & Gynecology*. 2009. 200(2):156. Accessed 3-10-2104.

² ACOG. Nonmedically indicated early-term deliveries. 2013. Available at http://www.acog.org/Resources_And_Publications/Committee_Opinions/Committee_on_Obstetric_Practice/Nonmedically_Indicated_Early-Term_Deliveries. Accessed 3-10-2104.

³ *Ibid.*

⁴ CMS. Reducing early elective deliveries in Medicaid and CHIP. 2012. Available at <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Downloads/EED-Brief.pdf>. Accessed 3-10-2014.

⁵ Childbirth Connection. Induction of labor: what you need to know. 2011. Available at <http://childbirthconnection.org/article.asp?ck=10650#experience>. Accessed 3-6-2014.

⁶ *Ibid.*

⁷ Childbirth Connection. Cesarean Section: Why is the national U.S. Cesarean section rate so high? 2013. Available at <https://www.childbirthconnection.org/article.asp?ck=10456>. Accessed 3-11-2014.

⁸ March of Dimes. Why at least 39 weeks is best for your baby. 2012. Available at <http://www.marchofdimes.com/pregnancy/why-at-least-39-weeks-is-best-for-your-baby.aspx>. Accessed 3-10-2014.

⁹ Guihard-Costa AM, Larroche JC. Differential growth between the fetal brain and its infratentorial part. *Early Human Development*. 1990. 23(1):27-40. Accessed 1-10-2104.

¹⁰ *Ibid.*

¹¹ Clark SL, Miller DD, Belfort MA, Dildy GA, Frye DK, Meyers JA. Neonatal and maternal outcomes associated with elective term delivery. *American Journal of Obstetrics & Gynecology*. 2009. 200(2):156.

¹² Reddy UM, Ko CW, Raju TN, Willinger M. Delivery indications at late-preterm gestations and infant mortality rates in the United States. *Pediatrics*. 2009. 124:234-40.

¹³ Jensen J, White W, Coddington C. Maternal and neonatal complication of elective early-term deliveries. *Mayo Clinic Proceedings*. 2013. 88:1312-17. Available at <http://www.mayoclinicproceedings.org/article/S0025-6196%2813%2900607-1/fulltext>. Accessed 3-13-14.

¹⁴ *Ibid.*

¹⁵ Johns Hopkins Medicine. External and Internal Heart Rate Monitoring of the Fetus. Available at http://www.hopkinsmedicine.org/healthlibrary/test_procedures/gynecology/external_and_internal_heart_rate_monitoring_of_the_fetus_92,P07776/. Accessed 6-30-2014.

¹⁶ Lothian J. The birth of a breastfeeding baby and mother. *Journal of Perinatal Education*. 2005. 14:42-45. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1595228/>. Accessed 3-13-14.

¹⁷ HHS. HHS launches Strong Start initiative to increase health deliveries and reduce preterm births. 2012. Available at <http://www.hhs.gov/news/press/2012pres/02/20120208a.html>. Accessed 3-10-2104.

¹⁸ *Ibid.*

¹⁹ March of Dimes. Premature birth the financial impact on business. 2013. Available at <http://www.marchofdimes.com/materials/premature-birth-the-financial-impact-on-business.pdf>. Accessed 3-10-2104.

²⁰ Clark SL, Miller DD, Belfort MA, Dildy GA, Frye DK, Meyers JA. Neonatal and maternal outcomes associated with elective term delivery. *American Journal of Obstetrics & Gynecology*. 2009. 200(2):156. Accessed 3-10-2104.

²¹ Osterman JK, Martin JA. Recent Declines in Induction of Labor by Gestational Age. *NCHS Data Brief*. 2014. No. 155. Available at <http://www.cdc.gov/nchs/data/databriefs/db155.htm>. Accessed 6-30-2014.

²² Martin J, Hamilton B, Sutton P, Ventura S, et al. Births: final data for 2012. *National Vital Statistics Reports*. 2013. 62:9. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_09.pdf. Accessed 3-10-2014.

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ Clark SI, Frye DR, Myers JA, et al. Reduction in elective delivery at <39 weeks of gestation: comparative effectiveness of 3 approaches to change and the impact on neonatal intensive care admission and stillbirth. *American Journal of Obstetrics and Gynecology*. 2010. 203. Available at <http://www.leapfroggroup.org/media/file/AJOGEffectivenessofApproaches.pdf>. Accessed 1-10-2014.

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²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ California Maternal Quality Care Collaborative. <39 weeks toolkit. Available at https://www.cmqcc.org/39_week_toolkit. Accessed 3-10-2104.

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³¹ *Ibid.*

³² South Carolina Healthy Connections Medicaid. Medicaid agency to stop payment for elective early deliveries. Available at <https://www.scdhhs.gov/press-release/medicaid-agency-stop-payment-elective-early-deliveries>. Accessed 3-10-2104.

³³ National Conference of State Legislators. Early Elective Deliveries. 2013. Available at <http://www.ncsl.org/research/health/early-elective-deliveries-postcard.aspx>. Accessed 3-10-2104.

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³⁶ National Conference of State Legislators. Early elective deliveries. 2013. Available at <http://www.ncsl.org/research/health/early-elective-deliveries-postcard.aspx>. Accessed 3-10-2104.

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