For many families, the birth of a child is a life-defining moment — forever shaping the arc of a family. Childbirth is the number one reason for hospitalization across all populations and age groups.\textsuperscript{1} Taken together, this makes the quality of care that mothers receive of critical importance to employers who cover much of the cost of childbirth through the healthcare benefits they provide to their employees.

Leapfrog asks U.S. hospitals to report annually on their performance in four key areas of maternity care: episiotomies, NTSV (Nulliparous, Term, Singleton, Vertex) C-sections, early elective deliveries, and high-risk deliveries. In addition, hospitals report on two other process of care measures designed to prevent pulmonary embolisms in women undergoing C-sections, and to screen for an excess of bilirubin in the blood of newborns — which can lead to serious complications.
Episiotomy Rate Declining, But Still Unacceptable

An episiotomy is an incision made in the mother’s perineum (birth canal) during childbirth. While routine episiotomies were common for many years — ostensibly to prevent tears during delivery — recent studies have found that more selective use of this procedure may result in 30% fewer women experiencing severe perineal/vaginal trauma\(^3\) — including tears, pelvic floor defects, and loss of bladder or bowel control.

In 2017 according to the Leapfrog Hospital Survey, the average rate for episiotomies across all reporting hospitals declined from 9.6% to 7.8%, though this remains well above Leapfrog’s standard of 5.0% or less.

### FIGURE 1: Maternity Care Standards Measured in This Report

<table>
<thead>
<tr>
<th>WHAT IT IS</th>
<th>ASSOCIATED COMPLICATIONS</th>
<th>LEAPFROG’S STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Episiotomy</strong></td>
<td>An incision made in the perineum to widen the birth canal during childbirth</td>
<td><strong>Mothers</strong> Linked to worse perineal tears, loss of bladder or bowel control, and pelvic floor defects</td>
</tr>
<tr>
<td><strong>NTSV C-section</strong></td>
<td>Caesarean delivery for a first-time mother of a single baby in the head-down position at term (37 weeks gestation or longer)</td>
<td><strong>Mothers</strong> Increased risk of infection and blood clots, longer recoveries, difficulty with future pregnancies, and chronic pelvic pain&lt;br&gt;<strong>Babies</strong> Breathing difficulties, heightened risk of developing chronic childhood diseases (e.g., asthma, diabetes)</td>
</tr>
<tr>
<td><strong>High-risk delivery</strong></td>
<td>Delivery of very-low birth weight babies*</td>
<td><strong>Babies</strong> Low oxygen levels, breathing issues, difficulty feeding and gaining weight, trouble controlling body temperature, neurologic or gastrointestinal issues, sudden infant death syndrome (SIDS)(^2)</td>
</tr>
<tr>
<td><strong>Early elective delivery</strong></td>
<td>Scheduled C-sections or medical inductions performed prior to 39 completed weeks of gestation without medical necessity</td>
<td><strong>Babies</strong> Risk of respiratory diseases, pneumonia, or, in rare cases, death</td>
</tr>
<tr>
<td><strong>Maternity process of care measures</strong></td>
<td>Standard processes of maternity care that all hospitals should have in place to provide safe care to newborns and mothers:&lt;br&gt;• Takes appropriate actions to prevent deep vein thrombosis (DVT) in women delivering by C-section&lt;br&gt;• Screens for bilirubin levels in newborns prior to discharge</td>
<td><strong>Mothers</strong> Risk of a blood clot in the leg that breaks loose and travels to the lungs — creating a high risk of death&lt;br&gt;<strong>Babies</strong> Risk of hyperbilirubinemia, which can cause irreversible brain damage resulting in permanent visual, muscular, or other disabilities, or, in rare cases, death</td>
</tr>
</tbody>
</table>

* Leapfrog’s volume measure for high-risk deliveries includes infants that are 500 – 1499 grams. The Vermont Oxford Network (VON) death or morbidity measure varies slightly and includes infants that are 501 – 1500 grams. Hospitals can report using either metric.
Only 43.8% of hospitals fully met the Leapfrog standard, with 30.7% showing substantial progress (rates of 10.0% or less), and 13.0% reporting some progress toward the standard (rates of 15.0% or less).

Specific Hospital Choice Is Critically Important

In addition, rates of episiotomies vary significantly within a given metropolitan area, making a mother’s choice of where to deliver critically important. For example, rates of episiotomies within the greater Los Angeles metro area range from 0.5% to a shockingly high 47.3%.

Taking a closer look at these large metros, in Los Angeles rates of episiotomies at two hospitals only 12.5 miles apart vary from 1.7% on the low end to 22.7% on the high end. In Chicagoland, two hospitals just nine miles from each other range from 3.4% to 20.2%. And in the greater Dallas area, hospitals less than ten miles apart report episiotomy rates of 2.8% and 18.4%, respectively. Clearly, a mother’s decision of where to deliver can make an enormous difference in the likelihood of avoiding this often unnecessary and potentially harmful procedure.

Rate of NTSV C-sections Remains Too High

On the 2017 Leapfrog Hospital Survey, only two in five (39.9%) reporting hospitals fully met Leapfrog’s standard for NTSV C-sections of 23.9% or less. There has been no improvement and instead a slight decline in performance since the 2016 Leapfrog Hospital Survey when 44.7% of hospitals fully met the standard. This lack of progress is highly alarming and great cause for concern.

The map in FIGURE 3 illustrates that hospitals in the Pacific Northwest, Mountain states, and desert Southwest are performing better on the NTSV C-section standard, while large swaths of the nation from the Midwest down into Texas and extending to the Southeast still have a long way to go.
However, even within a region that’s doing relatively well on the Leapfrog NTSV C-section standard, there can be wide variance, such as in Seattle where NTSV C-section rates range from 18.7% to 39.0%.

On the positive side, some hospitals are using the results of the Leapfrog Hospital Survey to drive needed change. Such was the case a few years ago when Virginia Hospital Center (VHC) discovered its NTSV C-section rate was 33%, well above Leapfrog’s target. The hospital took a number of steps including appointing an OB-GYN to be medical director of labor and delivery and holding monthly quality meetings. The result? VHC decreased its NTSV C-section rate to 20.9% by 2017, fully meeting Leapfrog’s standard.4

**Nearly Four of Five Hospitals Handling High-Risk Deliveries Without the Necessary Resources and Expertise**

Studies have shown that very-low birth weight babies weighing less than 1,500 grams (3 pounds, 4.91 ounces) do best when cared for in a neonatal intensive care unit (NICU) that has experience caring for these fragile babies and follows recommended processes of care.5 Leapfrog’s standard recommends that mothers at risk for premature delivery choose a hospital that’s highly experienced — handling at least 50 very-low birth weight deliveries annually in an on-site or co-located NICU or maintaining a better-than-expected standardized morbidity ratio for these births — and that ensures at least 90% of at-risk mothers also receive antenatal steroids prior to delivery.

Unfortunately, in the 2017 Leapfrog Hospital Survey, only 22.1% of hospitals that reported that they electively deliver very-low birth weight babies fully met these standards — essentially unchanged from the 22.8% that did so in 2016. With the potential complications for these fragile newborns ranging from breathing difficulties to neurological or gastrointestinal issues or even SIDS, mothers at risk of delivering a very-low birth weight baby should carefully review the Leapfrog data for hospitals in their area before deciding where to deliver.

**Most Hospitals Meeting Standards for Early Elective Deliveries**

Hospitals across the U.S. reporting to the 2017 Survey are performing well on minimizing early elective deliveries, with 91.4% fully meeting Leapfrog’s standard of 5.0% or lower. The average rate for all hospitals has been steadily declining over the past five years — thanks in part to the transparency encouraged by reporting the data to the Leapfrog Hospital Survey — from an acceptable 4.6% in 2013 to an outstanding 1.6% in 2017 (FIGURE 4).

**Hospitals Performing Well on Maternity Process of Care Measures**

Finally, 84.0% of hospitals reporting to the 2017 Survey have also been taking appropriate precautions on two key maternity process of care measures. These processes include using pneumatic compression devices or taking other steps to prevent a blood clot in the leg from becoming a pulmonary embolism in women undergoing caesarean section, as well as screening newborns prior to discharge for bilirubin levels to detect possible hyperbilirubinemia.
The Leapfrog Hospital Survey

The Leapfrog Group invites all adult general acute care and free-standing pediatric hospitals in the United States to voluntarily report on topics such as maternity care, healthcare-associated infections, medication safety, safe practices for better health care, and never events through its annual Survey. In 2017, nearly 2,000 hospitals submitted a Survey, representing two-thirds of inpatient beds nationwide. This report uses final hospital data from the 2017 Leapfrog Hospital Survey (data submitted through December 31, 2017).

The Leapfrog Hospital Survey includes measures that are endorsed by the National Quality Forum (NQF) and/or aligned with those of other significant data collection entities, including the Centers for Medicare & Medicaid Services (CMS) and The Joint Commission. Leapfrog partners with the Armstrong Institute for Patient Safety and Quality at Johns Hopkins Medicine to review Survey measures and standards, and updates them annually to reflect the latest science. Additionally, panels of volunteer experts meet regularly to review the Survey measures and recommend performance standards for each subject area covered in the Leapfrog Hospital Survey. The full list of measures included in the Survey is available at http://www.leapfroggroup.org/survey.

2. Lucile Packard Children’s Hospital Stanford