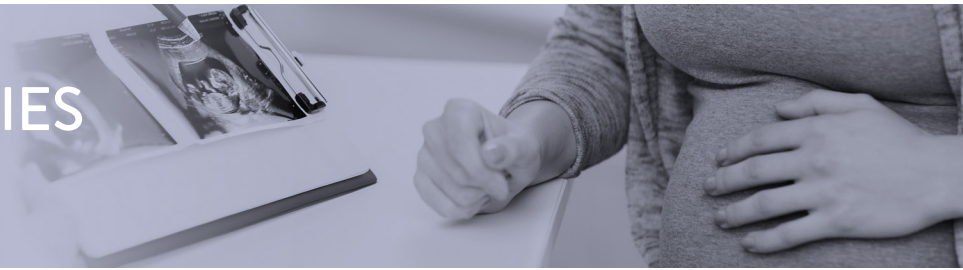




# HIGH-RISK DELIVERIES

DATA BY HOSPITAL ON NATIONALLY STANDARDIZED METRICS



For many women and families, childbirth marks one of life’s most important milestones. As a result, the quality of care mothers and babies receive in the hospital is critically important—especially when it comes to the most vulnerable newborns. Sometimes an expectant mother has a medical condition that puts her at risk of a premature delivery; other times the baby may have a health problem for which early delivery would be beneficial. In these cases, it’s essential that a mother be able to choose a hospital with the experienced staff and specialized resources to ensure she and her baby receive the best care.


This report examines U.S. hospital performance in providing maternity care for high-risk deliveries as measured on the 2016 Leapfrog Hospital Survey.

## REPORT HIGHLIGHTS

- Significant improvement is needed—3 in 4 US hospitals that report electively delivering high-risk very-low birth weight babies do not fully meet Leapfrog’s standard
- NICU volume, a key indicator of experience with high-risk deliveries, can vary dramatically even within the same city
- More hospitals are reporting on the measure, but most of those newly reporting are far from meeting Leapfrog’s standards

**FIGURE 1**

HIGH-RISK DELIVERY STANDARDS MEASURED IN THIS REPORT

WHAT IS IT	ASSOCIATED COMPLICATIONS	LEAPFROG'S STANDARD
 <p>Delivery of very-low birth weight babies*</p>	<p>Low oxygen levels, breathing problems, difficulty feeding and gaining weight, trouble controlling body temperature, neurologic or gastrointestinal issues, sudden infant death syndrome (SIDS)<sup>1</sup></p>	<ul style="list-style-type: none"> <li>• Must have an on-site or co-located neonatal intensive care unit (NICU)</li> <li>• Admit at least 50 very-low birth weight babies annually or maintain a better-than-expected standardized morbidity ratio for very-low birth weight babies</li> <li>• Ensure that at least 80% of mothers at-risk for premature delivery receive antenatal steroids prior to delivery</li> </ul>

Note: Vermont Oxford Network’s (VON) volume for the death or morbidity measure only includes infants that are 501 to 1500 grams. Leapfrog’s volume measure is slightly different in that it includes infants that are 500 - 1499 grams.

## BABIES AT RISK: 3 IN 4 US HOSPITALS ELECTIVELY DELIVER HIGH-RISK BABIES DESPITE SUB-OPTIMAL ENVIRONMENT TO DO SO

When babies are born weighing less than 1500 grams (3 pounds, 4.91 ounces), they should be cared for in a neonatal intensive care unit (NICU). Research shows that highly vulnerable, very-low birth weight babies are more likely to survive and thrive in a hospital with an experienced NICU on-site or co-located.<sup>2</sup> Leapfrog recommends that mothers at-risk for a premature delivery deliver their babies at hospitals that care for at least 50 very-low birth weight babies per year in an on-site or co-located NICU OR at a hospital that maintains a better-than-expected standardized morbidity ratio for very-low birth weight babies, as measured by the Vermont Oxford Network. In both cases, the hospital should ensure that at least 80% of mothers at risk for premature delivery receive antenatal steroids prior to delivery.

In 2016, there were far too few hospitals that fully met Leapfrog’s standards for high-risk deliveries—only 23% of the hospitals that electively deliver these very-low birth weight babies met the standard. Every state across the country has vast room for improvement. Alabama, Georgia, Indiana, and Kansas were 2016’s top-performing states for high-risk delivery with 40% of their hospitals fully meeting Leapfrog’s standard. Oregon, South Carolina, and Utah were the worst-performing states for high-risk delivery, with no hospital electively performing these deliveries fully meeting Leapfrog’s standards. States with less than five hospitals reporting that they electively deliver very low birth weight babies were excluded from this state analysis.

## THE HOSPITAL YOU CHOOSE MATTERS: NICU EXPERIENCE CAN VARY DRAMATICALLY EVEN WITHIN THE SAME CITY

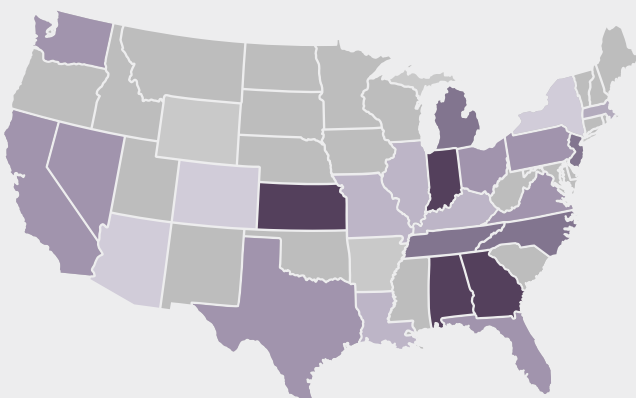
A hospital’s level of experience can significantly alter the risk of mortality or complications for very-low birth weight infants, who have perinatal mortality rates up to 6x higher than other newborns.<sup>3</sup> Very-low birth weight infants are more likely to survive and prosper when they are delivered in a hospital that has an experienced NICU on-site or co-located. The transfer of these fragile infants to another hospital, even one across the street, has been shown to put their health at-risk. The Leapfrog standard calls for these NICUs to care for at least 50 very-low birth weight babies annually or maintain a better-than-expected standardized morbidity ratio for very-low birth weight babies.

Data from the 2016 Leapfrog Hospital Survey found that annual NICU volume can vary dramatically among hospitals even in the same metro area. In Chicago, for example, the number of very-low birth weight infants cared for in the NICU in 2016 ranged from just 14 infants at one hospital to 849 infants at another hospital less than 10 miles away. Mothers across the country can ensure they receive optimal care for themselves and their babies by using Leapfrog’s publicly reported results to identify a hospital with a vast amount of high-risk delivery experience.

**FIGURE 2**

NO STATE HAD MORE THAN 40% OF HOSPITALS MEETING LEAPFROG’S STANDARD FOR HIGH-RISK DELIVERY

### PERCENTAGE OF HOSPITALS MEETING LEAPFROG’S STANDARD



**FIGURE 3**

A HOSPITAL'S NICU VOLUME FOR VERY-LOW BIRTH WEIGHT BABIES VARIES WITHIN CITIES



Note: This analysis represents the highest and lowest volume hospitals in the NY, LA, and Chicago metro areas within 20 miles among those reporting at least 1 very-low-weight birth.

**MORE HOSPITALS ARE REPORTING, BUT MOST OF THOSE NEWLY REPORTING ARE FAR FROM MEETING LEAPFROG STANDARDS**

In 2016, 571 hospitals that electively admitted high-risk deliveries reported on their experience with high-risk deliveries, an increase of 6% over the 537 hospitals that reported they performed these deliveries in 2015. However, of the hospitals that reported in 2016 and did not report in 2015, a smaller proportion of them are meeting Leapfrog’s standards. Only 17% of these newly reporting hospitals met Leapfrog’s standards, compared to an overall rate of 23%.

**CONCLUSION**

An expectant mother facing a potentially high-risk delivery deserves a hospital team with the NICU experience and resources to provide quality care for her and her baby. This year’s Leapfrog Hospital Survey shows there’s still considerable room for improvement—not only in increasing hospitals’ experience with high-risk deliveries, but also in encouraging more reporting from non-responding hospitals. Fortunately, in many parts of the country, mothers can use publicly reported data from the Leapfrog Hospital Survey to choose a hospital that’s well-qualified to admit high-risk deliveries—leading to better outcomes.

**METHODS**

The Leapfrog Group annually invites all adult general acute care and free-standing pediatric hospitals in the United States to voluntarily report on topics such as high-risk procedures, maternity care, hospital-acquired infections, medication safety, nursing safety, and never events through its annual hospital survey. In 2016, 1,859 hospitals submitted a survey, representing 49% of hospitals nationwide. This report uses final hospital data from the 2016 Leapfrog Hospital Survey (data submitted through December 31, 2016).

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 2016 survey is available at [www.leapfroggroup.org/survey](http://www.leapfroggroup.org/survey).

## ENDNOTES

### About the Leapfrog Hospital Survey High-Risk Deliveries Measure

#### *High-Risk Deliveries Electively Admitted*

Includes deliveries with:

- expected birth weight <1500 grams; or
- gestational age at least 22 weeks but <32 weeks

Not all women at risk for delivery of babies with these conditions are known beforehand to be at risk. Therefore, deliveries in which these high-risk conditions were unknown prior to admission are not considered electively admitted high-risk deliveries.

Hospitals that admit deliveries where these conditions are known prior to admission are considered to electively admit high-risk deliveries.

### About the Vermont Oxford Network (VON) Death or Morbidity Measure

The Vermont Oxford Network (VON) Death or Morbidity Standardized Morbidity Ratio indicates whether the infant died before discharge or had one or more of the following morbidities: severe intraventricular hemorrhage; chronic lung disease;

necrotizing enterocolitis; pneumothorax; bacterial or fungal infection after day 3 from birth; or cystic periventricular leukomalacia. It is calculated as observed/expected. The standardized morbidity ratio is adjusted for the following: gestational age in completed weeks and its squared term; small for gestational age, defined as being in the 10th percentile or less for birth weight; major birth defect; multiple gestation; APGAR score at 1 minute; infant sex; mode of delivery (vaginal or Cesarean); and birth location (inborn or outborn). The ratio is shrunken to adjust for center volume. “Better-than-expected” refers to a SMR with upper and lower bounds less than 1.

Vermont Oxford Network is a nonprofit voluntary collaboration of health care professionals working together as an interdisciplinary community to improve the quality and safety of medical care for newborn infants and their families through a coordinated program of research, education, and quality improvement projects.

1. Lucile Packard Children’s Hospital Stanford
2. Phibbs, CS; Bronstein, JM; Buxton, E; Phibbs, RH. The effects of patient volume and level of care at the hospital of birth on neonatal mortality. JAMA. 1996; 276:1054-9.
3. Janaswamy, Vibhav Srinarayana; Kodandapani, Yerroju, M.D.; Lathasree, Pothuraju. Mortality and morbidity profile of low birth weight babies at a tertiary care hospital. IOSR Journal of Dental and Medical Sciences. Vol. 15, Issue 3 Ver. 1, March 2016, pgs. 1-7.

About The Leapfrog Group: Founded in 2000 by large employers and other purchasers, [The Leapfrog Group](#) is a national nonprofit organization driving a movement for giant leaps forward in the quality and safety of American health care. The flagship [Leapfrog Hospital Survey](#) collects and transparently reports hospital performance, empowering purchasers to find the highest-value care and giving consumers the lifesaving information they need to make informed decisions. The [Leapfrog Hospital Safety Grade](#), Leapfrog’s other main initiative, assigns letter grades to hospitals based on their record of patient safety, helping consumers protect themselves and their families from errors, injuries, accidents, and infections.

About Castlight Health: Our mission is to empower people to make the best choices for their health and to help companies make the most of their health benefits. We offer a health benefits platform that engages employees to make better healthcare decisions and guide them to the right program, care, and provider. The platform also enables benefit leaders to communicate and measure their programs while driving employee engagement with targeted, relevant communications. Castlight has partnered with enterprise customers, spanning millions of lives, to improve healthcare outcomes, lower costs, and increase benefits satisfaction. For more information, visit [www.castlighthealth.com](http://www.castlighthealth.com) and connect with us on [Twitter](#) and [LinkedIn](#) and [Facebook](#).