Evidence-Based Labor and Delivery Management

Can We Safely Reduce the Cesarean Rate?

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KEYWORDS

• Evidence-based • Labor • Delivery • Management • Safety • Cesarean rate

KEY POINTS

- Although cesarean delivery may be an increasingly safe alternative to vaginal delivery, its use in 1 in 3 women giving birth is likely too high.
- Furthermore, the downstream impact of cesarean delivery on future pregnancies is likely not well-considered when the first cesarean is being performed.
- There are a range of practices that have become standard that should be carefully questioned and replaced by standardized, evidence-based practices to decrease the rate of cesarean deliveries safely.
- Through quality improvement efforts such as perinatal quality collaboratives, the environmental changes will allow clinicians to adopt the range of practices described.
- Without environmental changes, clinicians may not be able to change practice patterns that have been encouraged by the given environments in which they practice.

INTRODUCTION

More than 100 years ago, the normal physiologic process of birth began to be moved into hospitals. Although those initial moves were likely not specifically designed to improve pregnancy outcomes, it has led to dramatic reductions in both the maternal and neonatal mortality rates.[1,2] It also provided the opportunity to better understand the birth process through epidemiologic study and clinical trials that can examine the impact of interventions. In one of the earliest cohort studies, Dr Emmanuel Friedman prospectively studied the labor and delivery process and reported out labor norms.[3] Unfortunately, instead of an increasing number of studies, these norms were used to establish specific labor guidelines that have been shown to increase interventions without clear evidence of benefit. One of the biggest impacts of having birth in a hospital in combination with specific labor guidelines has been the increasing increase in cesarean deliveries.

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In 2015, the cesarean rate in the United States was 32.0%, meaning that more than 1.2 million women delivered via cesarean.[4] Although this rate remains high, there has been a modest reduction in the rate of cesarean births, decreasing from 32.9% to 32.0%. This nearly 1% reduction means that there are 40,000 fewer cesarean deliveries each year. Unfortunately, previously, from 1996 to 2009, the cesarean rate increased from 20.7% to 32.9%, a more than 50% increase, which was nearly 500,000 more cesarean deliveries each year.[5] This increase occurred despite guidance from *Healthy People 2010* and *Healthy People 2020* that set the primary cesarean rate at 15% and the primary cesarean rate in term, nulliparous women at 23.9%.[6] Furthermore, it does not seem that there is any benefit to a cesarean delivery above 20%. In a study of 179 countries around the globe, researchers found that although both maternal and neonatal mortality rates were reduced as cesarean rates increased to 19%, from 20% and up, there was no further reduction of either maternal or neonatal mortality.[2]

In addition to the statistics regarding the increase in cesarean deliveries, it is compelling to note the wide variation in cesarean delivery rates between institutions.[7] The rate varies between institutions, even when controlling for characteristics that would account for indicated cesarean deliveries.[8] Although such variation may depend on additional factors that differ between institutions, the variation seems to be too great to be based on consistent, evidence-based care at all institutions. Thus, there is a need to develop evidence-based care and disseminate practice guidelines to ensure that all women are managed in a fashion that gives them the best hope for a good outcome. Our profession needs to more rapidly develop and study approaches to manage labor and delivery and reduce both maternal and neonatal morbidity and mortality, but at the same time safely reduce the use of cesarean deliveries.

This article provides an overview considering what approaches might be used to safely reduce the cesarean rate. These concepts are simply meant to touch on a number of labor and delivery management areas. Most of these are discussed in much greater depth by the articles included in this issue of *Obstetrics and Gynecology Clinics of North America*. Specifically, the papers delve into the management of the first and second stages of labor, including induction of labor, fetal heart rate monitoring, the management of multiple gestations, breech presentations, malposition, women with prior cesarean deliveries, laborist models, and quality improvement measures on labor and delivery.

WHY IS THE CESAREAN RATE INCREASING?

One possible reason for the increase in the cesarean delivery rate may be that there has simply been an increase in the need for cesarean deliveries. The most common indication for a primary cesarean is cephalopelvic disproportion or arrest of progress in labor. Although it is unlikely that maternal pelvis size has changed over the past 3 decades, it is possible that birthweight has increased. In fact, there is evidence that there have been increases in the rate of macrosomia over the past 2 decades.[9] Another 2 issues that contribute to increasing rates of cesarean delivery, possibly through the mechanism of birthweight, are maternal obesity and gestational weight gain.[10,11] Without question, the proportion of obese women has increased over the past decade[12] and the even higher weight classes, such as “super obesity,” are associated with even higher rates of cesarean deliveries.[13] Additionally, increased gestational weight gain has been associated with cesarean delivery and is commonly above standard guidelines.[14]