The Burden of Preterm Birth

A SPOTLIGHT ON THE IMPORTANCE OF EACH WEEK OF PREGNANCY

The Growth You Can’t See
Preterm birth is a serious health concern and the leading cause of infant morbidity and mortality in the United States.
More than 1,000 babies are born preterm every day.\textsuperscript{1,2}

As of November 2016, the U.S. PTB rate is 9.6\%, meaning approximately 1 in every 10 babies is born preterm.\textsuperscript{1}

ACOG suggests that preterm birth rates have increased because of a dramatic rise in late preterm births, as late preterm newborns are the fastest growing subset of neonates.\textsuperscript{3}

71.3\% of all preterm births in the United States are late preterm births.\textsuperscript{2,4}
Evolving terminology for late preterm and term birth

Definitions

**Preterm** is a birth of an infant **before 37 weeks** of gestation.

**Late preterm**, previously referred to as “near term,” is a birth of an infant **between 34⁰-36⁶ weeks** gestation:

- Prior to 2005, “late preterm” was known as “near term.” This change was made because “near term” was believed to minimize the risks associated with delivering between 34⁰-36⁶ weeks gestation⁵
Term is a birth of an infant after 37 weeks of gestation.

Early term is a birth of an infant between 37⁰-38⁶ weeks of gestation.

Full term is a birth of an infant between 39⁰-40⁶ weeks of gestation.

In 2013, ACOG and SMFM redefined “term” into two subcategories, early term and full term, to underscore the importance of each week.⁶
Identifying who is at increased risk for preterm birth

Some women are at higher risk than others.

While there are a variety of risk factors associated with preterm birth, leading risk factors include:

- Maternal history of spontaneous preterm birth
- Short cervical length
- Pregnancy with multiples
- African American ethnicity

### Maternal history

Women who have delivered before 37 weeks gestation are up to **2x more likely** to deliver preterm again.\(^7\)

### African American ethnicity

PTB rates are **~50% higher** in African American women compared to white women.\(^1\)
Preterm birth, including late preterm birth, can lead to health problems

Length of pregnancy is one of the most important factors in a newborn’s overall health.

Compared to term infants, late preterm infants are:

- 4x more likely to have at least 1 medical condition diagnosed
- 3½x more likely to have ≥2 conditions diagnosed

Additionally children born preterm face greater risks of serious and potentially lifelong disabilities as well as a variety of developmental and behavioral problems.
Overall, **preterm birth** has a profound **societal impact**

Preterm birth by the numbers, based on published literature:

- **7x** more likely to have morbidity during initial hospitalization than term infants\(^9\)
- **23%** risk of rehospitalization during the first year\(^{10}\)
- **48%** admitted to the NICU/NINT\(^{11}\)*

* Neonatal Intensive Care Unit/Neonatal Intermediate Care
Preterm brains are smaller and less mature than full-term babies.

At week 34, brain weight is 65% of the weight of a term brain and formation is incomplete.\(^{12}\)

- A nearly 10-fold increase in fetal brain volume takes place between weeks 18 and 34.\(^{13}\)

- During the last 6 weeks of gestation:\(^{12}\)
  - 50% increase of cortical volume
  - 25% of cerebellar development occurs
  - Exponential increase in relative percentage of gray and myelinated white matter to total brain volume

Brain scan at 24-40 weeks gestation\(^{14}\)
A closer look at the **late preterm stage**

**Brain** is still developing balance, coordination, learning and social function.\(^3\)

**Lung** structure and function continues maturing. Babies born early may have trouble breathing.\(^3,8\)

**Temperature** regulation is still developing. Body fat may be low leading to temperature instability.\(^3,15\)

**Hearing** is still developing and may not be fully functional until full term.\(^16\)

**Liver** is still maturing and may not be able to remove bilirubin and prevent jaundice.\(^3,15\)

**Sucking** and **swallowing** reflexes continue to develop. Babies born early may have difficulty feeding or have nutrition problems.\(^15,17\)

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Late preterm development
Preterm birth is associated with significant economic burdens

$26.2 Billion
The annual cost associated with preterm birth, based on a 2007 Institute of Medicine report.\textsuperscript{18}

50%
The percentage of pregnancy costs associated with preterm birth.\textsuperscript{19}

$50,000
The average incremental cost during an infant’s first year of life.\textsuperscript{18,20}
Hospitalization costs for preterm infants by gestational age.

Although the cost of preterm birth is more expensive the earlier the case, the aggregate cost of all preterm gestational ages is high due to the disproportionate number of cases being attributed to late preterm birth.\textsuperscript{21,22}

Aggregate cost is the total cost for all babies in that delivery category. Data derived from Gilbert et al, 2003, which examined a statewide California database, and adjusted for inflation to 2014 dollar values.
Why late preterm birth matters

1. More complications
   Compared to term, preterm birth including late preterm birth is associated with more complications in infancy and long-term social and emotional problems.

2. Critical development
   The last few weeks of gestation are critical for a baby’s physical and mental development.

3. Economic burdens
   Preterm birth is associated with significant economic burdens and the aggregate cost of late preterm birth is a high portion of preterm birth’s total economic impact.

4. Term reclassification
   The reclassification of late preterm, away from near-term, better reflects the impact and significance of this gestational period for a baby’s development.
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