



## FORUM SESSION

### Caesar's Ghost:

### The Effect of the Rising Rate of C-Sections on Health Care Costs and Quality

MARCH 30, 2012

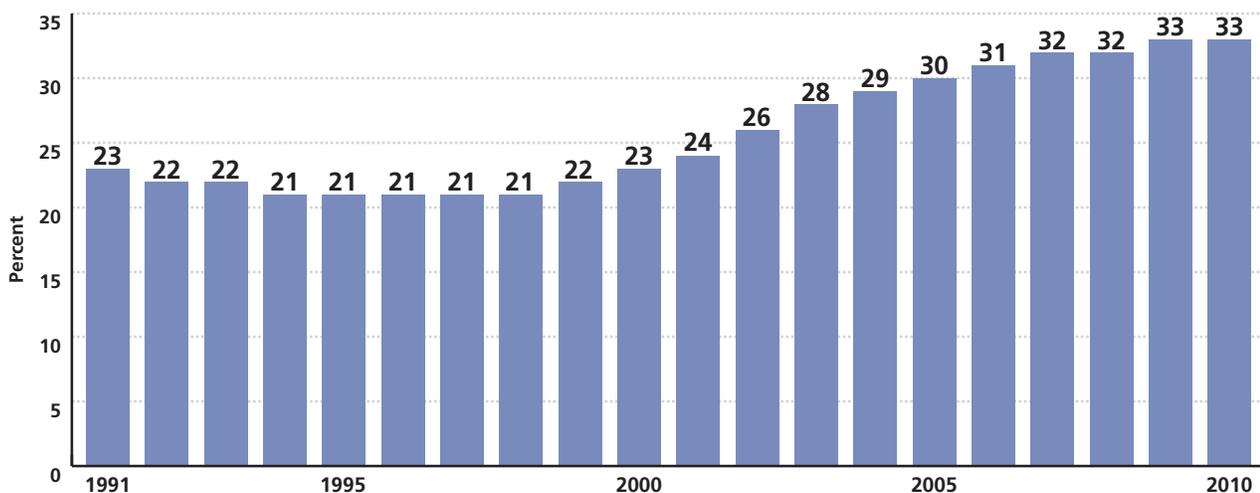
Delivering babies is big business in the United States: childbirth-related hospitalizations totaled \$27.6 billion in hospital costs in 2009, 7.6 percent of all inpatient hospital costs. In 2009, 45 percent of all maternal childbirth-related hospital stays were billed to Medicaid and 47 percent were billed to private insurers. The average cost for an uncomplicated vaginal delivery was \$2,962 and an uncomplicated cesarean section (c-section) was \$5,351. Medicaid paid for 42 percent of all c-sections, costing \$3.1 billion; private insurers paid for 52 percent, costing \$3.8 billion.<sup>1</sup>

For decades vaginal births have been declining in the United States and c-section deliveries have been rising (Figure 1, next page). C-sections now account for 33 percent of all births, a 52 percent increase from 1997.<sup>2</sup> Delivery by c-section is medically indicated in certain circumstances, such as when the cord precedes the baby's head through the birth canal or when the placenta has grown over the opening of the cervix, but those conditions represent a small proportion of all births and do not explain the magnitude of the existing c-section rate.

While all deliveries have risks, c-sections are associated with greater risks to both mother and baby. For example, a woman delivering by c-section is likely to have more intense and longer-lasting pain than a woman delivering vaginally and is at higher risk for wound and uterine infection. A baby born by a planned cesarean before the 39th week of pregnancy is at higher risk for mild to serious lung and breathing problems than other babies born at the same gestational age. A person who is born by cesarean section appears to be at higher risk for asthma, both in childhood and in adulthood, than a person born vaginally. Vaginal deliveries also come with high risks such as vaginal area pain and urinary and bowel incontinence for mothers and nerve injuries for babies.<sup>3</sup>

A number of factors have been suggested to explain the high rate of c-section deliveries: maternal choice, physician practice patterns, liability concerns, convenience, guidelines that have discouraged vaginal birth after c-section (VBAC),<sup>4</sup> and payment models that reward c-section over vaginal deliveries. The World Health Organization (WHO) and the U.S. Department of Health and Human Services (HHS) have made recommendations for lowering c-section rates. Although there is debate about the optimal rate of c-sections, WHO analyses found an increased risk of preterm delivery and neonatal mortality starting between rates of 10 and 20 percent.<sup>5</sup> Globally rates of c-sections vary dramatically from less than 1 percent in Chad and Burkina Faso to almost 50 percent in Brazil.<sup>6</sup> In the United States rates also vary widely, from a low of 22.2 percent in Utah to a high of 38.3 percent in New Jersey.<sup>7</sup> In the largest U.S. counties, risk-adjusted rates ranged from 6.7 to 28.9 percent for normal-weight births and from 25 to 50 percent for low-weight births.<sup>8</sup> HHS's Healthy People 2020 agenda calls for a 10 percent reduction from 2007 levels in (i) the overall c-section rate among low-risk first time mothers from 27 percent to 24 percent, and (ii) the rate of repeat c-section from 91 percent to 82 percent.<sup>9</sup> These reductions could result in healthier mothers and infants overall and in potential annual savings of over half a billion dollars in delivery costs.

**FIGURE 1**  
**Cesarean Delivery Rates in the United States, 1991–2010**



Source: F. Menacker and B.E. Hamilton, "Recent trends in cesarean delivery in the United States," National Center for Health Statistics, Data Brief, no 35, March 2010, available at [www.cdc.gov/nchs/data/databriefs/db35.pdf](http://www.cdc.gov/nchs/data/databriefs/db35.pdf).

Efforts are underway nationally, in states, and in communities to achieve these reductions in rates. They include public and private payer changes, health system practice changes, promotion of non-hospital birth settings, and provider and patient education efforts. In February 2012, the U.S. Department of Health and Human Services launched the Strong Start initiative in collaboration with key external stakeholders to reduce elective deliveries before 39 weeks gestation and test strategies to reduce pre-term births among women covered by Medicaid.<sup>10</sup> In the private sector, the March of Dimes' "Healthy Babies are Worth the Wait" initiative seeks to reduce all pre-term births including early elective deliveries by c-section or induction.<sup>11</sup> In April 2010 the Joint Commission added an elective delivery measure to its perinatal core measures set, and the Leapfrog Group now publicly reports hospital rates of early elective c-section and elective inductions.<sup>12</sup>

This Forum session described trends in c-section deliveries, explored the implications of those trends on maternal and child health and health care costs; reviewed factors attributed to the increasing rate of c-sections; and considered practice, payment, and consumer interventions focused on lowering the rate.

## KEY QUESTIONS

- What is the overall rate of cesarean section deliveries, and how has it changed over time? How have the rates of first-time and repeat c-section versus vaginal birth after c-section evolved? What recommendations for appropriate c-section rates exist?
- What are the benefits and risks of c-sections for mothers and newborns? How do they compare to those of vaginal deliveries?
- What factors explain the significant rise in the c-section rate?
- What efforts have Medicaid and private insurers undertaken to influence the c-section rates among the women they serve? In terms of payment? Provider and patient education? How much cost savings and quality improvement have been achieved? Could be achieved?
- What have some hospitals been able to accomplish with respect to improving perinatal outcomes and c-section rates? What federal and state policy changes might spur improvement in other hospitals?

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## SPEAKERS

**Maureen P. Corry, MPH**, is the executive director of Childbirth Connection, a national, not-for-profit organization founded in 1918 that is dedicated to improving the quality of maternity care and helping women and health professionals make informed maternity decisions. She described c-section use in the United States and discussed factors contributing to the increase over time.

**Jeffery Thompson, MD, MPH**, is the chief medical officer for the Washington State Department of Health and Social Services, the Department that administers the state's Medicaid program. He discussed efforts to affect the c-section and elective delivery rates for women served by the state's Medicaid program.

**Andréa Caballero Dilweg** is the program director for Catalyst for Payment Reform, an independent organization led by health care purchasers working to improve quality and reduce costs by identifying and coordinating workable solutions to improve health care payment. She discussed their work with purchasers and insurers to change maternity care practice patterns through payment and benefit design changes.

**Frank Mazza, MD**, is vice president, chief patient safety officer, and associate chief medical officer for the Seton Healthcare Family in Austin, Texas. He described Seton's perinatal safety efforts over the last decade.

## ENDNOTES

1. Healthcare Cost and Utilization Project data, available at <http://hcupnet.ahrq.gov/>. Claudia A. Steiner, MD, MPH, Senior Research Physician, Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality (AHRQ), e-mail communication with author, March 1, 2012.
2. B.E. Hamilton, J.A. Martin, and S.J. Ventura, "Births: Preliminary data for 2010," National Center for Health Statistics, National Vital Statistics Report, 60, no. 2, 2011, available at [www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60\\_02.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_02.pdf); F. Menacker and B.E. Hamilton, "Recent trends in cesarean delivery in the United States," National Center for Health Statistics, Data Brief, no 35, March 2010, available at [www.cdc.gov/nchs/data/databriefs/db35.pdf](http://www.cdc.gov/nchs/data/databriefs/db35.pdf); and J. Podulka, E. Stranges, and C. Steiner, "Hospitalizations Related to Childbirth, 2008," Agency for Healthcare Research and Quality, HCUP Statistical Brief #110, April 2011, available at [www.hcup-us.ahrq.gov/reports/statbriefs/sb110.pdf](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb110.pdf).
3. Childbirth Connection, "Comparing risks of cesarean and vaginal birth to mothers, babies, and future reproductive capacity: a systematic review," April 2004, available at [www.childbirthconnection.org/article.asp?ck=10166](http://www.childbirthconnection.org/article.asp?ck=10166).

4. In 1999, the American Congress of Obstetricians and Gynecologists (ACOG) released a practice guideline changing its earlier recommendation of “encouraging” VBAC to a recommendation that women should be “offered” trial of labor if there are no contraindications. The guideline also stated that trial of labor should be performed only in institutions equipped to respond to obstetric emergencies and in settings where physicians capable of performing a cesarean delivery are “immediately available” to provide emergency care. After a decade of declining VBAC rates, in 2010 in an effort to encourage more VBACs, ACOG revised its practice guideline to say that “most women with one previous cesarean delivery with a low transverse incision are candidates for and should be counseled about vaginal birth after cesarean delivery (VBAC) and offered a trial of labor after previous cesarean delivery (TOLAC).” See the Guideline Summary at [www.guideline.gov/content.aspx?id=23853&search=vbac#Section420](http://www.guideline.gov/content.aspx?id=23853&search=vbac#Section420).
5. Jose Villar *et al.*, “Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America,” *Lancet*, 367 (June 3, 2006): pp. 1819–1829.
6. Luz Gibbons *et al.*, “The Global Numbers and Costs of Additionally Needed and Unnecessary Caesarean Sections Performed per Year: Overuse as a Barrier to Universal Coverage,” World Health Organization, World Health Report, Background Paper No. 30, 2010, available at [www.who.int/healthsystems/topics/financing/healthreport/30C-sectioncosts.pdf](http://www.who.int/healthsystems/topics/financing/healthreport/30C-sectioncosts.pdf).
7. Menacker and Hamilton, “Recent trends in cesarean delivery in the United States.”
8. Katherine Baicker, Kasey S. Buckles, and Amitabh Chandra, “Geographic Variation In The Appropriate Use Of Cesarean Delivery,” *Health Affairs*, 25, no. 5 (August 8, 2006): w355–w367, available at <http://content.healthaffairs.org/content/25/5/w355.full.pdf+html>.
9. HealthyPeople 2020, “Maternal, Infant, and Child Health Objectives,” available at <http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26>.
10. The initiative is a joint effort between the Centers for Medicare & Medicaid Services (CMS), the Health Resources and Services Administration (HRSA), the Administration on Children and Families (ACF), the March of Dimes, the American College of Obstetricians and Gynecologists (ACOG), the National Partnership for Women and Families, the Society for Maternal-Fetal Medicine, American College of Nurse Midwives, Childbirth Connection, Leapfrog Group, and the National Priorities Partnership convened by the National Quality Forum and others. See Center for Medicare & Medicaid Innovation, “Strong Start for Mothers and Newborns,” available at [www.innovation.cms.gov/initiatives/strong-start/](http://www.innovation.cms.gov/initiatives/strong-start/).
11. See the March of Dimes’ Medical Resources, “Healthy Babies are Worth the Wait,” available at [www.marchofdimes.com/professionals/medicalresources\\_hbwww.html](http://www.marchofdimes.com/professionals/medicalresources_hbwww.html).
12. See the Leapfrog Group, “Hospital Rates of Early Scheduled Deliveries,” available at [www.leapfroggroup.org/tooearlydeliveries](http://www.leapfroggroup.org/tooearlydeliveries).