

Cesarean delivery in Southern Nevada, 2010-2013

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Abstract

Objective

This report presents recent trends relating to cesarean delivery in Southern Nevada for available data years from 2010 through 2013.

Data and methods

Data from the live birth registry (preliminary from 2011 onwards) were used to compute cesarean rates.

Main results

Low-risk primary cesarean delivery appears to be on the rise in Clark County: of low-risk women with no prior cesarean birth, 24.4% delivered by cesarean in 2013, compared to a 2010 rate of 21.6% and a Healthy People 2020 target of 23.9%.

Abbreviations

NHB: non-Hispanic black
NHW: non-Hispanic white

Whereas medically indicated cesarean delivery (and labor induction) prevents perinatal mortality and morbidity (e.g. in cases of dystocia, breech presentation, fetal distress), cesarean delivery is an abdominal surgery associated with higher (relative) risks of complications including maternal mortality, severe maternal morbidity, and long-term health problems in offspring (though the absolute risk is small), as well as higher costs when compared with a vaginal birth.¹⁻³ As part of the national efforts to lower the cesarean rate, the American College of Obstetricians and Gynecologists has released clinical guidelines aimed at reducing nonmedically indicated cesarean delivery (and labor induction) under 39 completed gestational weeks in the mid-2000s.^{4,5} Recently, reducing cesarean rates among low-risk pregnancies (i.e. full-term singleton with vertex fetal presentation) has also received priority attention as a Healthy People (HP) initiative.

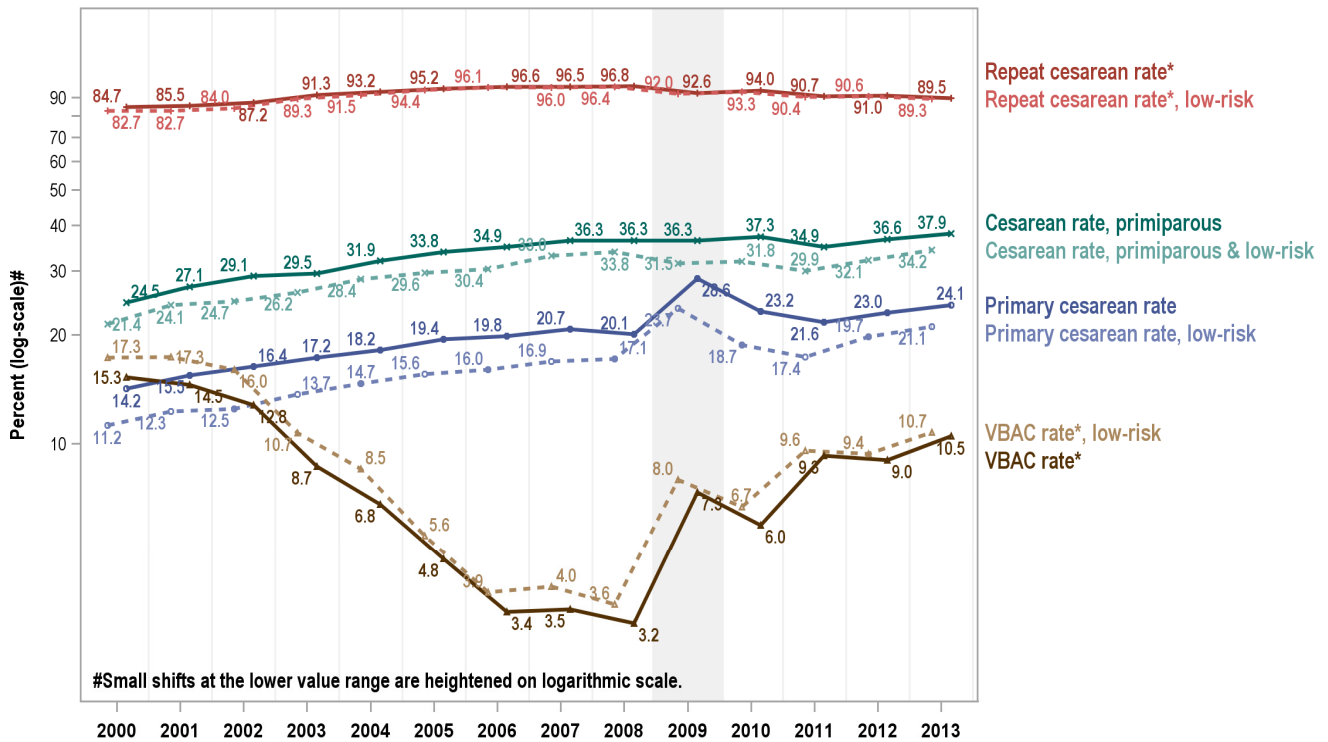
The total cesarean rate (the proportion of live births by cesarean delivery) in Clark County in 2013 was the same as the 2010 rate (36.8%). Close to two-thirds (65.5%) of cesarean deliveries or 24.1% of all deliveries in 2013 were primary cesareans (a first cesarean delivery regardless of parity), a slight increase from the corresponding rate in 2010 (63% of all cesareans or 23.2% of all live births) (Figure 1). In particular, primary cesarean rates for births at under 34 weeks of gestation (very-to-mild preterm) increased from 51% in 2010 to 54.6% in 2013, and those at 39-41

weeks (full and late term) from 20.5% to 22.9%, while rates at 34-36 weeks (late preterm) and 37-38 weeks (early term) were essentially unchanged (32.8% and 21.1% in 2013 respectively)

As in previous years, older women were more likely to deliver by cesarean; women aged 35 and over were twice as likely as those under age 20 to have a cesarean delivery (47.5% compared with 23.8% in 2013), due in part to older mothers having an increased likelihood of multigestation pregnancies and preterm delivery, either spontaneously or because of greater use of assisted reproductive techniques.⁶ As well, primiparity (first birth) was a risk factor for primary cesarean delivery; cesarean delivery accounted for 37.8% of births to primiparous women in 2013, compared to 20.6% among women having their second or third child who had not had a previous cesarean delivery.

Definitions	
Primary cesarean rate	= $\frac{\text{Number of first live cesarean births regardless of parity}}{\text{Number of live births}} \times 1,000$
Cesarean rate among primiparous women	= $\frac{\text{Number of live cesarean births among women giving first birth}}{\text{Number of live births among women giving first birth}} \times 1,000$
Cesarean rate among low-risk* women with no prior cesarean (LRWNPC)	= $\frac{\text{Number of live cesarean births among LRWNPC}}{\text{Number of live births among LRWNPC}} \times 1,000$ * Low-risk: singleton birth at full-term with vertex fetal presentation.
Cesarean rate among low-risk primiparous births	= $\frac{\text{Number of live cesarean births among low-risk primiparas}}{\text{Number of live births among low-risk primiparas}} \times 100$ ** Low-risk primiparous births: women giving birth for the first time to a singleton at full-term with vertex fetal presentation.
Repeat cesarean rate	= $\frac{\text{Number of live cesarean births to women with a prior cesarean}}{\text{Number of live births to women with a prior cesarean}} \times 100$
Vaginal birth after previous cesarean (VBAC) rate	= $\frac{\text{Number of live vaginal births to women with a prior cesarean}}{\text{Number of live births to women with a prior cesarean}} \times 100$

Figure 1. Delivery methods for all and low-risk women, Clark County-NV, 2000-13



Source: Birth certificate files (preliminary for 2011 onwards); restricted to mothers residing in Clark County.
 Note: Vaginal/cesarean delivery definition revised mid-2009. Based on 2-year averaged data prior to and after definition revisions(2007-2008 and 2009-2010), primary cesarean rate showed a comparability ratio of 1.27, repeat cesarean 0.97, and VBAC 2.00. *Per 100 live births to women who had a previous cesarean birth.

Low-risk primary cesarean delivery appears to be on the rise in Clark County, although it should be noted that information reported on birth certificates regarding plurality, gestational age, and presentation of the fetus is limited in its ability to identify women at risk, as medical/obstetric risk factors associated with labor/delivery complications are not well reported on birth certificates. In 2013, 21.1% of all low-risk births or 63.5% of low-risk cesarean births in Clark County were primary cesareans, compared to 18.7% in 2010 (60.3% of low-risk cesareans); whereas among low-risk primiparous women, the cesarean rate increased from 31.8% to 34.2% between 2010 and 2013 (Figure 1). Regardless of parity, cesarean rates were lowest among Hispanic women, followed by non-Hispanic white (NHW) women (Figures 2-3).

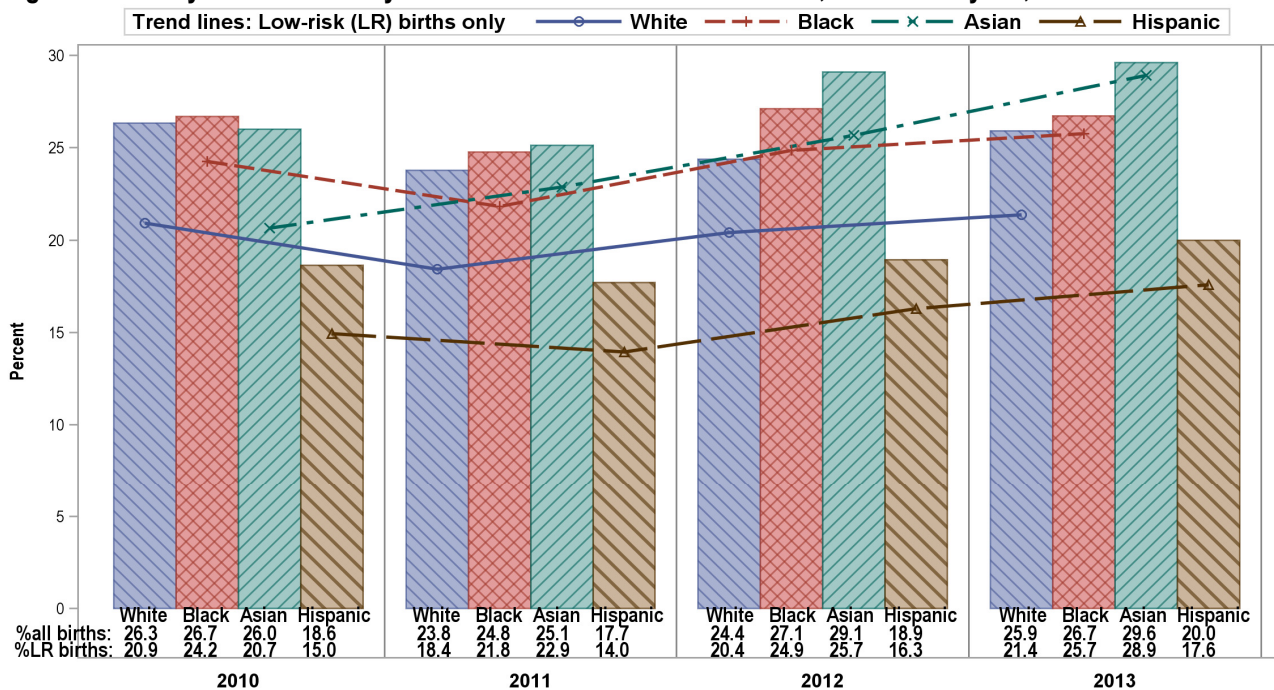
Of low-risk women with no prior cesarean birth, 24.4% delivered by cesarean in 2013, compared to a 2010 rate of 21.6% and a HP 2020 target of 23.9%;⁷ across race/ethnicities, the proportion rose during 2010-13 for non-Hispanic blacks (NHB) (from 28.7% to 30.6%), Native Americans (20.8% to 31%), Asians (23.7% to 32.8%), Hispanics (17.5% to 20.5%), and was

relatively stable for NHWs (23.6% to 24.4%). On the other hand, the primary cesarean rate for women who were not low-risk was essentially unchanged during this period (at 28.7% in 2013), while the rate for women having a first birth who were not low risk declined slightly (from 44.6% to 43.8%). In Clark County, cesarean rates were generally higher in the high income neighborhoods (Appendix A).

The HP 2020 objectives set a target 81.7% for repeat cesarean among low-risk women with a prior cesarean.⁷ Given the 2013 repeat cesarean rate among low-risk women of 89.3% (compared with a 2010 rate of 93.3%), the rate would have to decrease by approximately 9% to reach the objective. The recent decline in repeat cesarean birth, accompanied by a corresponding increase in vaginal birth after previous cesarean (VBAC), is an encouraging trend observed across race/ethnicities (Figure 4).

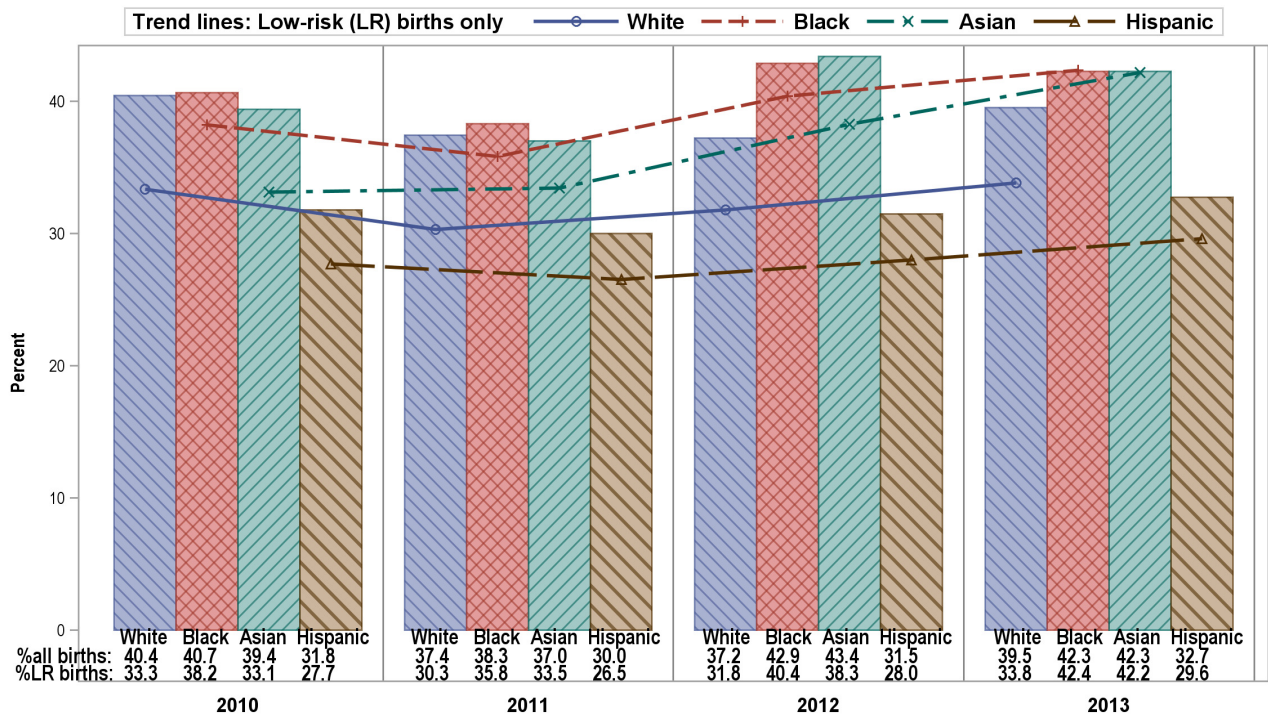
In summary, the primary cesarean section delivery rate, especially among low-risk women, showed a slight increase in Clark County during 2010-2013. Strategies that address the contributing factors to this disconcerting trend are warranted.

Figure 2. Primary cesarean rate by race for all births and low-risk births, Clark County-NV, 2000-13



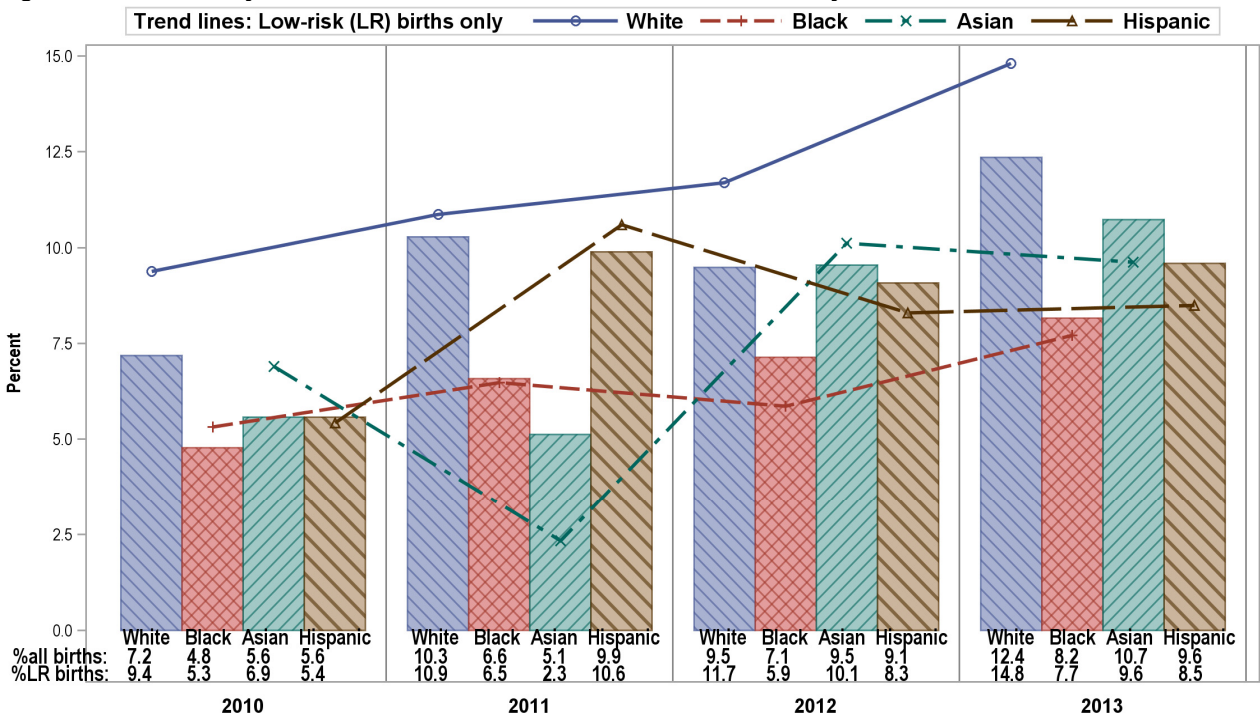
Source: Birth certificate files (preliminary for 2011 onwards); restricted to mothers residing in Clark County.

Figure 3. Cesarean rate among primiparas by race for all births and low-risk births, Clark County-NV, 2000-13



Source: Birth certificate files (preliminary for 2011 onwards); restricted to mothers residing in Clark County.

Figure 4. VBAC rate by race for all births and low-risk births, Clark County-NV, 2000-13



Source: Birth certificate files (preliminary for 2011 onwards); restricted to mothers residing in Clark County. Rates are per 100 live births to women who had a previous cesarean birth.

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Appendix A.

Cesarean rates among low-risk women with no previous cesarean by residential zip code, Clark County-NV, 2011-2013

