

Trends in Hospital-Based Childbirth Care: The Role of Health Insurance

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Childbirth is the leading reason for hospitalization of women in the United States,¹ and hospital-based maternity care has undergone marked changes in recent years. Cesarean delivery rates have increased from 20.7% in 1996 to 32.9% in 2009.²⁻⁴ Rates of induction of labor have also increased, from 9.5% in 1990 to 23.1% in 2008.^{2,5} Meanwhile, rates of vaginal birth after cesarean (VBAC) have decreased from 28.3% in 1996 to 8.5% a decade later.^{4,6,7} These changes have catalyzed interprofessional dialogue on rising rates of obstetric intervention, especially because these changes have occurred alongside increases in adverse birth outcomes and persistent racial/ethnic disparities in maternal and neonatal health.^{2,8,11} Although advances in obstetric care have historically improved outcomes for mothers and babies, higher-than-expected risk-adjusted cesarean delivery rates are not associated with health gains, and high procedure intensity comes at a cost to women, infants, and the healthcare system.^{12,13}

Maternity and newborn care is the top expenditure category for hospital payments by Medicaid and private insurers alike,¹⁴ and costs of childbirth care have been increasing. The average facility charge for a vaginal delivery in 2004 was \$7772, and this increased to \$9617 by 2009. Facilities charge more for a cesarean delivery, on average, \$15,779 in 2009, which was up from \$12,223 in 2004.^{15,16}

Health insurance may impact childbirth-related healthcare such as cesarean delivery through benefits coverage, payment structures, and provider networks.^{17,18} State-level analyses have indicated that privately insured women experience higher rates of cesarean delivery, including elective cesarean delivery, compared with uninsured and publicly insured women.^{19,20} In 2009, private insurers paid \$3.8 billion for 52% of all cesarean births in US hospitals.²¹ The public-sector role is also large. State Medicaid programs finance 45% of all US births.²² Thus, as public payers, states have significant policy leverage over obstetric practice via Medicaid coverage and benefits structures; they also have an important fiscal stake in improving the quality and value of childbirth care and associated health outcomes.²³

Although research and vital statistics reports have documented changes in obstetric practice,^{2,24,25} the role of health insurance in facilitating or mitigating these longitudinal trends remains largely unexplored. The

potential payer impact on trends in maternity care has important policy implications, given the volume of births in the United States per year (approximately 4 million),

Objectives: Childbirth is the leading reason for hospitalization in the United States, and maternity-related expenditures are substantial for many health insurance programs, including Medicaid. We studied the relationship between primary payer and trends in hospital-based childbirth care.

Study Designs: Retrospective analysis of hospital discharge data from the Nationwide Inpatient Sample (NIS) of the Healthcare Cost and Utilization Project, a 20% stratified sample of US hospitals.

Methods: Data on 6,717,486 hospital-based births for the years 2002 through 2009 came from the NIS. We used generalized estimating equations to measure associations over time between primary payer (Medicaid, private insurance, or self) and cesarean delivery, vaginal birth after cesarean (VBAC), labor induction, and episiotomy.

Results: Controlling for clinical, demographic, and hospital factors, births covered by Medicaid had lower odds of cesarean delivery (adjusted odds ratio [AOR], 0.91), labor induction (AOR, 0.73), and episiotomy (AOR, 0.62) and higher odds of VBAC (AOR, 1.20; $P < .001$ for all AORs) compared with privately insured births. Cesarean rates increased 6% annually among births paid by private insurance (AOR, 1.06; $P < .001$) and less rapidly (5% annually) among those covered by Medicaid.

Conclusions: US hospital-based births covered by private insurance were associated with higher rates of obstetric intervention than births paid for by Medicaid. After controlling for clinical, demographic, and hospital factors, cesarean delivery rates increased more rapidly among births covered by private insurance, compared with Medicaid. Changes in insurance coverage associated with healthcare reform may impact costs and quality of care for women giving birth in US hospitals.

Am J Manag Care. 2013;19(4):e125-e132

In this article
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Published as a Web exclusive
www.ajmc.com

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Take-Away Points

We studied the relationship between primary payer and trends in hospital-based childbirth care from 2002 to 2009 and found the following:

- Obstetric intervention rates increased over time for all births, regardless of payer.
- Presence and type of health insurance affected hospital-based childbirth care; births covered by private insurance had higher rates of obstetric intervention compared with Medicaid-funded births.
- Controlling for individual and hospital-level factors, the cesarean delivery rate increased more rapidly for births covered by private insurance, compared with Medicaid.
- Changes in health insurance coverage associated with the Affordable Care Act may have important health implications for women giving birth in US hospitals.

the public sector stake in terms of costs and health outcomes, and the role of private payers and self-insured employers in financing childbirth care.² The goal of this study was to characterize differences in hospital-based obstetric care by primary payer, while controlling for relevant clinical, demographic, and hospital characteristics. Our analysis focused on changes over time (2002-2009) in delivery mode and obstetric procedures, and it measured whether these trends were changing more or less rapidly for women who gave birth without insurance coverage and for births financed by public versus private payers in a nationally representative sample of US hospitals.

METHODS

Data and Study Populations

This study used data from the Nationwide Inpatient Sample (NIS) of the Healthcare Cost and Utilization Project (HCUP), from 2002 through 2009. The NIS includes hospital discharge records for all payers for inpatient care for an approximate 20% stratified sample of US community hospitals and is the only national hospital database with discharge records for all patients, regardless of payer,²⁶ which makes it well suited for this analysis. The quality and validity of NIS data have been previously reported, and these data have been widely used in health services research, including studies of maternity and obstetric care.²⁷⁻²⁹

We analyzed discharge summaries for 6,717,486 maternal hospitalizations for childbirth in US hospitals in 44 states during the period 2002 to 2009 in which the primary payer was self (N = 241,503), Medicaid (N = 2,832,321), or private insurance (N = 3,643,643). We relied on a previously validated and published method of using NIS data to identify obstetric deliveries.²⁷

Variable Measurement

Outcome variables are defined using both *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) codes and Clinical Classifications Software (CCS) codes, which were developed by HCUP for use with

ICD-9-CM codes.²⁶ Delivery mode outcomes were (1) cesarean delivery (ICD-9-CM codes 740xx, 741xx, 742xx, 744xx, and 7499) and (2) VBAC, which was calculated as a vaginal birth conditional on indication of prior cesarean delivery (CCS code 189). The low-risk cesarean delivery rate (shown in unadjusted comparisons in **Table 1**) is calculated as the rate of cesarean delivery among women with term, singleton, vertex pregnancies, and no prior cesarean deliveries, following the definition employed by the American Congress of Obstetricians and Gynecologists (ACOG) as closely as the data allow.³⁰ Secondary obstetric care outcomes included (3) induction of labor (either medical or surgical induction; ICD-9-CM codes 731 and 734) and (4) episiotomy (ICD-9-CM code 736). Insurance status was indicated by the primary payer for the childbirth hospitalization and categorized as Medicaid, private insurance, or self.

Our analysis controlled for patient-level demographics, including maternal age and race as recorded on hospital discharge records. Inclusion of clinical control variables is based on recommendations from ACOG and published analyses of risk-adjustment methodologies in obstetric care^{30,31}; these variables include the following: diabetes (ICD-9-CM codes 6488x and 250xx), hypertension (ICD-9-CM codes 6420x, 6421x, 6422x, 6423x, 6424x, 6425x, and 6426x), preeclampsia (ICD-9-CM codes 6424x and 6425x), eclampsia (ICD-9-CM code 6426x), multiple gestation (ICD-9-CM code 651xx), post date pregnancy (pregnancy exceeding 40 weeks of gestation; ICD-9-CM codes 645, 64510, 64511, 64513, and 6453), placenta complications (ICD-9-CM codes 640 and 641), malpresentation (CCS code 187), fetal disproportion (CCS code 188), preterm delivery (delivery prior to 37 weeks of gestation; ICD-9-CM codes 6442, 64420, and 64421), and prior cesarean delivery (CCS code 189). We also controlled for hospital characteristics including bed size, teaching status, and rural versus urban location. We used the hospital bed-size categories defined by AHRQ.²⁶ Hospital teaching status is based on information from the American Hospital Association's Annual Survey of Hospitals. Finally, classification of hospitals as either urban or rural was based on Core Based Statistical Area codes from Census 2000 data.²⁶

Statistical Analysis

We constructed a series of multivariable regression models, with childbirth-related maternal hospitalization as the unit of analysis, to assess the effect of health insurance status on obstetric care from 2002 through 2009. Because units (hospitalizations) were clustered within hospitals, we used gen-

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Table 1. Descriptive Statistics of Childbirth Hospitalizations 2002 to 2009, Using Data From the Nationwide Inpatient Sample (20% Sample of US Hospitals)

	TOTAL (2002–2009)		2002		2009		Change, % 2002–2009
	N = 6,717,486		N = 838,191		N = 791,702		
	n	%	n	%	n	%	
Demographics							
Age, y							
<20	954,916	14.2	121,812	14.5	112,315	14.2	–2.4
21–25	1,694,736	25.2	210,481	25.1	195,494	24.7	–1.7
26–30	1,832,151	27.3	223,228	26.6	222,838	28.1	5.7
31–35	1,463,213	21.8	188,443	22.5	168,697	21.3	–5.2
>35	974,717	14.5	119,763	14.3	115,239	14.6	1.9
Race							
White	2,616,300	38.9	308,736	36.8	345,423	43.6	18.5
Black	656,729	9.8	80,392	9.6	94,608	11.9	24.6
Hispanic	1,262,292	18.8	145,867	17.4	160,866	20.3	16.8
Asian	257,258	3.8	33,651	4.0	32,913	4.2	3.6
Native American	34,055	0.5	2472	0.3	6683	0.8	186.2
Other	248,245	3.7	30,755	3.7	35,679	4.5	22.8
Missing	1,642,607	24.5	236,318	28.2	115,530	14.6	–48.2
Clinical conditions							
Diabetes	383,993	5.7	42,066	5.0	50,932	6.4	28.2
Hypertension	505,370	7.5	59,059	7.0	64,954	8.2	16.4
Preeclampsia	231,676	3.4	28,005	3.3	28,920	3.7	9.3
Post dates (>40 weeks)	701,532	10.4	81,042	9.7	90,250	11.4	17.9
Multiple gestation	85,751	1.3	9869	1.2	12,227	1.5	31.2
Placenta problems	124,393	1.9	15,418	1.8	14,180	1.8	–2.6
Malpresentation	507,408	7.6	61,706	7.4	59,274	7.5	1.7
Disproportion	353,586	5.3	48,211	5.8	37,889	4.8	–16.8
Prior cesarean	986,989	14.7	108,913	13.0	129,287	16.3	25.7
Preterm (<37 weeks)	504,881	7.5	60,410	7.2	57,968	7.3	1.6
Hospital characteristics							
Teaching	3,100,504	46.2	399,125	47.6	369,485	46.7	–2.0
Rural	748,320	11.1	107,984	12.9	84,767	10.7	–16.9
Bed size							
Small	805,403	12.0	96,565	11.5	75,659	9.6	–17.0
Medium	1,745,405	26.0	224,450	26.8	200,467	25.3	–5.4
Large	4,148,195	61.8	517,176	61.7	501,983	63.4	2.8

Note: Cell entries represent numbers (n) and percentages (%) of childbirth-related hospitalizations with the demographic, clinical, and hospital characteristics listed. Columns present total values (2002 to 2009) as well as averages for 2002 and 2009 and percent change over this time period, to highlight time trends.

eralized estimating equations (GEE) models with clustered standard errors.³² We built GEE models with a log link for each of the dichotomous outcomes: cesarean delivery, VBAC, labor induction, and episiotomy. Final GEE regression models controlled for all of the individual demographic and clinical covariates and hospital characteristics described above and also included interaction terms between year and insurance

status to test for differential annual trends in study outcomes. Our primary goal in this context was to examine whether trends (eg, rising rates of cesarean delivery) changed more or less rapidly depending on the primary payer.

In order to display time trends by insurance status, we also present results as predicted probabilities. Calculation of predicted probabilities required that we specify particular covari-

■ **Table 2.** Changes OverTime in Health Insurance and Maternity Care Outcomes, 2002 to 2009

	TOTAL 2002–2009		2002		2009		Change, % 2002–2009
	N = 6,717,486		N = 838,191		N = 791,702		
	n	%	n	%	n	%	
Primary payer/insurance status							
Uninsured (self)	241,503	3.6	28,631	3.4	30,206	3.8	11.7
Medicaid	2,832,328	42.2	318,715	38.0	364,018	46.0	20.9
Private	3,643,655	54.2	490,845	58.6	397,478	50.2	–14.3
Maternity care							
Cesarean delivery	2,078,425	30.9	223,151	26.6	265,892	33.6	26.2
Low-risk cesarean delivery ^a	752,515	11.2	81,309	9.7	94,615	12.0	23.2
VBAC	107,754	10.9	19,191	17.6	10,950	8.5	–51.9
Labor induction	1,194,641	17.8	137,407	16.4	151,135	19.1	16.4
Episiotomy	718,070	10.7	124,985	14.9	60,882	7.7	–48.4

VBAC indicates vaginal birth after cesarean.

^aLow-risk cesarean delivery is cesarean delivery among women with term, singleton, vertex pregnancies and no prior history of cesarean delivery. Note: Cell entries represent numbers (n) and percentages (%) of childbirth-related hospitalizations with the demographic, clinical, and hospital characteristics listed. Columns present total values (2002 to 2009) as well as averages for 2002 and 2009 and percent change over this time period, to highlight time trends.

ate values. We based these specifications on mean covariate values (Table 1) to represent a typical childbirth-related hospitalization. The only factors that varied in the calculation of predicted probabilities were primary payer and year of childbirth. Predicted probabilities are calculated by using these covariate values and coefficients generated by the GEE regression models described above. All analyses were performed using SAS, version 9.2. The study was granted exemption from review by the University of Minnesota Institutional Review Board.

RESULTS

Several characteristics of childbirth-related hospitalizations changed markedly over the study period (Table 1). The age distribution of mothers giving birth in US hospitals was fairly stable, and approximately 39% of deliveries were to white mothers, 10% were to black mothers, 19% were to Hispanic mothers, and fewer than 5% were to Asian or American Indian/Alaska Native mothers and mothers of other racial groups. Information on race/ethnicity was missing for just under 25% of mothers in this analysis, but the proportion of missing data decreased almost 50% across the study period because of improved data reporting and collection by HCUP.²⁶ Rates of pregnancy-related complications and associated clinical conditions generally increased over the study period, with the largest relative increases occurring in the conditions of multiple gestation and prior cesarean delivery. Fewer than 8% of births were complicated by diabetes, hypertension, pre-eclampsia/eclampsia, preterm or post term gestation, placenta

problems, nonvertex fetal presentation (ie, breech), and fetal disproportion. The characteristics of hospitals in which births occurred remained fairly stable between 2002 and 2009, with slight decreases in births in small and rural hospitals. On average, nearly one-half of all births occurred in teaching hospitals and 11% were in rural hospitals.

Just over one-half of all hospitalizations for childbirth were covered by private health insurance (54.2%; **Table 2**), but that proportion decreased by 14% over the study period. In contrast, Medicaid coverage for births rose by 21%, from 38.0% of births in 2002 to 46.0% in 2009. A small but growing percentage of hospitalizations for childbirth were not covered by health insurance; this proportion increased from 3.4% to 3.8% of all births.

These data indicated increasing rates of cesarean delivery and labor induction and decreasing rates of VBAC and episiotomy from 2002 to 2009 (Table 2). The average overall rate of cesarean delivery was 30.9% across the study period, while the average low-risk cesarean delivery rate was 11.2%; both increased over time. The VBAC rate decreased dramatically, from 17.6% in 2002 to 8.5% in 2009. In contrast, the rate of labor induction increased over this period, from 16.4% to 19.1%. The average rate of episiotomy was 10.7%, and it decreased over the study period.

Table 3 presents regression model results which measure differential changes over time in hospital-based obstetric care for deliveries, by primary payer. The top panel shows results for deliveries covered by health insurance compared with those where the primary payer was self (ie, uninsured), and the bottom panel presents results for all births covered by health

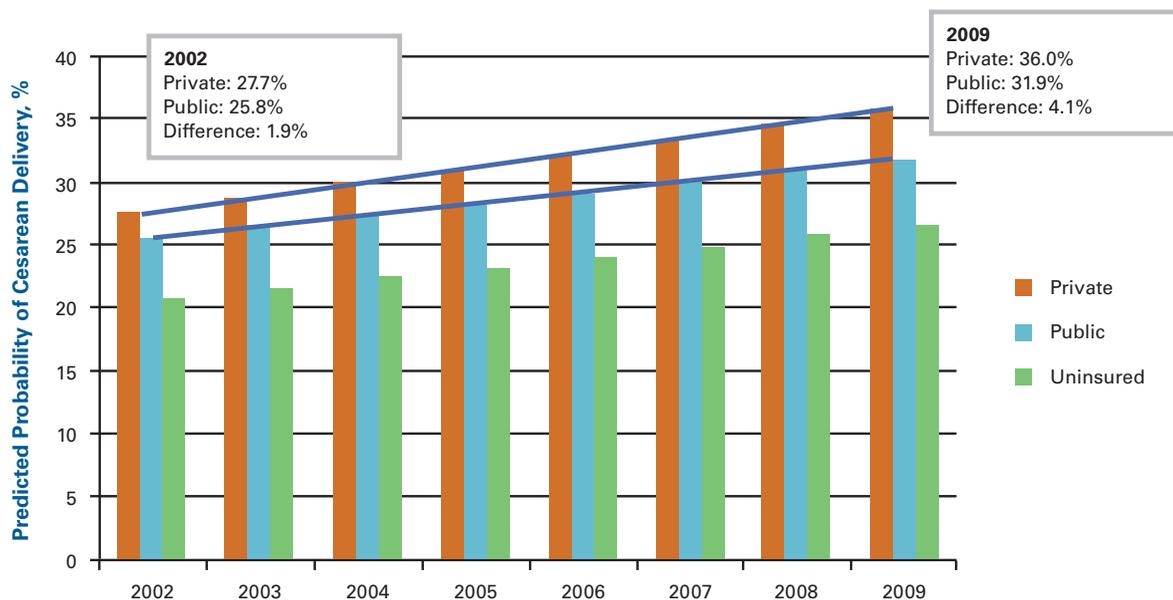
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Table 3. AORs of Differences by Payer, Annual Time Trends, and Differential Time Trends by Primary Payer for Obstetric Procedures

Self-Pay (vs Any Third Party Payer) N = 6,712,181									
	Primary Payer = Self			Annual Time Trend			Differential Annual Time Trend for Self-Pay (vs insured)		
	AOR	95% CI		AOR	95% CI		AOR	95% CI	
Cesarean delivery	0.70	0.69	0.72	1.05	1.05	1.05	1.00	0.99	1.00
VBAC	1.63	1.54	1.72	0.89	0.88	0.89	0.99	0.98	1.01
Labor induction	0.66	0.65	0.68	1.04	1.03	1.04	1.01	1.01	1.02
Episiotomy	0.89	0.87	0.91	0.89	0.89	0.89	0.99	0.98	1.00
Among Insured Births, Primary Payer = Medicaid (vs private) N = 6,471,067									
	Primary Payer = Medicaid			Annual Time Trend			Differential Annual Time Trend for Medicaid (vs private)		
	AOR	95% CI		AOR	95% CI		AOR	95% CI	
Cesarean delivery	0.91	0.90	0.91	1.06	1.06	1.06	0.99	0.99	0.99
VBAC	1.20	1.17	1.23	0.88	0.88	0.89	1.00	0.99	1.00
Labor induction	0.73	0.73	0.74	1.03	1.03	1.03	1.03	1.03	1.03
Episiotomy	0.62	0.62	0.63	0.89	0.89	0.89	1.01	1.01	1.02

AOR indicates adjusted odds ratio; CI, confidence interval; VBAC, vaginal birth after cesarean.
 Note: All models use standard errors adjusted for hospital clustering and control for age, race, diabetes, hypertension, preeclampsia, eclampsia, multiple gestation, pregnancy exceeding 40 weeks' gestation, placenta complications, fetal malpresentation, fetal disproportion, preterm delivery, prior cesarean delivery, hospital bed size, teaching status, and rural versus urban location. Bold type indicates statistical significance at $P < .05$, 95% CI.

Figure. Predicted Probability of Cesarean Delivery Over Time (2002-2009) for a 26-Year-Old Woman Without Pregnancy Complications Who Is Giving Birth at a Large Teaching Hospital, by Insurance Type



insurance, comparing Medicaid with private insurance coverage. Estimates are presented as adjusted odds ratios (AORs) with 95% confidence intervals (CIs). The first column lists the main study outcomes, the second column presents differences by payer, the third column presents change over time, and the final column presents how annual time trends differ

by primary payer (on the basis of an interaction term). All analyses controlled for the demographic, clinical, and hospital characteristics presented in Table 1.

On average, women without health insurance coverage (self-pay) were less likely than insured women to have a cesarean delivery (AOR [95% CI], 0.70 [0.69-0.72]) and more

likely to have had a VBAC (1.63 [1.54-1.72]). There were significant annual increases in cesarean delivery rates (yearly AOR, 1.05) and decreases in VBAC (0.89), but these trends did not differ based on whether the delivery was covered by insurance. Women with no insurance coverage were less likely than insured women to have their labor induced (AOR [95% CI], 0.66 [0.65-0.68]) or to have had an episiotomy (0.89 [0.87-0.91]).

When the focus is shifted to differences among insured births according to payer, women with Medicaid coverage at the time of childbirth were less likely to have a cesarean delivery (AOR [95% CI], 0.91 [0.90-0.91]) and more likely to have a VBAC (1.20 [1.17-1.23]) after controlling for demographic, clinical, and hospital characteristics. Rates of cesarean delivery increased 6% annually among births paid for by private insurance (AOR, 1.06; $P < .001$) and less rapidly (5% annually) among those with Medicaid coverage (annual AOR, 0.99; $P < .001$). Rates of VBAC decreased 12% annually among births covered by private insurance (AOR, 0.88; $P < .001$), but there was no difference in the rate of decline by payer. Women with Medicaid coverage were less likely to experience labor induction (0.73 [0.73-0.74]) or episiotomy (0.62 [0.62-0.63]). Although rates of labor induction were lower among Medicaid beneficiaries (AOR, 0.73) compared with privately insured women, they also increased more rapidly over time for Medicaid beneficiaries (AOR, 1.03; $P < .001$) compared with privately insured women.

The **Figure** presents model-based predicted probabilities of cesarean delivery during the childbirth-related hospitalization of a 26-year-old white woman with no pregnancy complications who is giving birth at a large, urban teaching hospital. An uninsured woman's birth would have been least likely to involve cesarean delivery, and a birth covered by Medicaid had a lower predicted probability of cesarean delivery than the same type of birth covered by private insurance. The predicted probability of cesarean delivery increases over time for all insurance categories, but the change over time differs depending on whether the birth is paid for by Medicaid or private insurance. In 2002, the probability that a 26-year-old woman with low risk would have a cesarean delivery differed by 1.9 percentage points based on whether she had Medicaid coverage or private insurance. By 2009, that difference had increased to 4.1 percentage points.

DISCUSSION

Health insurance coverage affects hospital-based obstetric care. Changes over time in delivery mode and obstetric procedures differed depending on whether a pregnant woman had health insurance coverage for her delivery and depending on the payer (Medicaid vs private insurance). Control-

ling for clinical, demographic, and hospital factors, uninsured women and women with Medicaid coverage received less intervention during childbirth (including cesarean delivery, labor induction, and episiotomy) compared with privately insured women. These results are consistent with prior findings regarding the relationship between insurance coverage and medical care, in general and as it specifically relates to maternity care.^{20,33-35} What our study adds is an examination of differential time trends by payer and discovery of a more rapid rise in cesarean delivery rates among privately (versus publicly) insured births over the past decade. With cesarean delivery being the most common inpatient surgery in US hospitals,¹ this differential trend—although small in absolute size—has an enormous magnitude in terms of potential payer costs and public health impacts.

In 2009, 4,130,665 babies were born in the United States, and 99% of these deliveries occurred in hospitals. The total cost in 2009 of childbirth-related hospitalizations in the US was \$27.6 billion.^{22,36} In that year, 45% of births were paid for by Medicaid and 47% were paid for by private health insurers. Medicaid paid for 42% of all cesarean deliveries in 2009, which totaled \$3.1 billion, and private insurers paid for 52%, at a cost of \$3.8 billion.²² According to the results presented in Figure 1, the difference in predicted probability by primary payer (Medicaid or private) for cesarean delivery for the average childbirth hospitalization increased, from 1.95 percentage points in 2002 to 4.09 percentage points in 2009. If the rate of increase in the probability of cesarean delivery had been the same for births covered by private insurers as it was for those covered by Medicaid, it would have resulted in 41,614 fewer cesarean deliveries in 2009; at \$5351 in hospital costs per cesarean delivery,²¹ this amounts to nearly a quarter of a million dollars in hospital costs in 1 year alone.

The use of nationally representative hospital discharge data allows for examination of trends in care by payer for a very large number of childbirth-related hospitalizations across the US. These data have been used extensively to study patterns of hospital-based health services utilization, including applications in the field of maternity and obstetric care.^{27,28,37} However, there are important limitations. NIS data do not contain information from clinical records or clinician notes, which limits our ability to assess the appropriateness of clinical interventions or the rationale for particular decisions or procedures beyond diagnoses recorded during the childbirth hospitalization. Certain important variables are not captured in these reports, including receipt of prenatal care, number of prior births, and gestational age. Efforts are under way to improve data collection to enable more comprehensive assessment of appropriateness of obstetric care and quality in future research.^{11,38,39} The large sample size resulted in many

statistically significant findings; however, not all of these are clinically relevant or important for public health outcomes. We took care to make this distinction in our interpretation of study results. As well, there are some inconsistencies in how race is recorded and reported to HCUP; we used a harmonized measure of race/ethnicity and controlled for missing values in this variable in our multivariable analyses.

The results of this study reveal differences in obstetric care by primary payer, after controlling for demographic, clinical, and institutional factors that may reasonably be expected to influence appropriate care. The reasons for these findings are not immediately clear. The differences we detected may be due to patient factors, provider decisions, or clinical or socioeconomic differences not captured in the data. Although we might be concerned that uninsured pregnant women or Medicaid beneficiaries could be exposed to greater risks because of less medical intervention, the literature suggests that this is not likely the case, because the reported rates of intervention they experienced are reasonable on the basis of clinical guidelines and standard practice.^{40,41} This raises the possibility that these individuals are less likely to experience an overuse of certain obstetric procedures, which may more frequently occur among births covered by private insurance. Emerging literature on the potential risks to mothers and infants of non-medically indicated interventions, including induction and cesarean delivery prior to 39 weeks gestation, implies that these scenarios deserve further study.^{8,9,12,42,43}

The implementation of the Affordable Care Act will produce substantial changes in health insurance coverage that will vary by state, and researchers, policy makers, and evaluators should pay close attention to potential unintended consequences. Increases in private insurance through employer-sponsored coverage or state exchanges could result in unanticipated changes in obstetric care; in other words, if women who would otherwise have had Medicaid coverage become eligible for private coverage, they may have higher odds of cesarean delivery. The differential changes over time in the rates of cesarean delivery uncovered in this analysis may signal departures from appropriateness of care or equity concerns, but they may also indicate the potential role of payers in shaping healthcare practices to align with evidence and patient-centeredness, in maternity care and more broadly.

Acknowledgments

The authors appreciate the input and feedback provided by Jean Abraham, PhD, and Patricia Fontaine, MD. We also gratefully acknowledge statistical programming support from Cori Blauer, MPH, and research assistance from Marie Ferguson.

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Funding Source: Dr Kozhimannil is supported by the Building Interdisciplinary Research Careers in Women's Health Grant (#K12HD055887) from the Eunice Kennedy Shriver National Institutes of Child Health and Human Development (NICHD), the Office of Research on Women's Health, and the National Institute on Aging, NIH, administered by the University of Minnesota Deborah E. Powell Center for Women's Health. Dr Shippee's work on this project was supported by funding from the National Center for Research Resources of the National Institutes of Health to the University of Minnesota Clinical and Translational Science Institute (#1UL1RR033183). This research was also supported by an Institute for Diversity, Equity and Advocacy Multicultural Research Award to Dr Kozhimannil from the Office of the Vice President and Vice Provost for Equity and Diversity at the University of Minnesota.

Author Disclosures: Dr Kozhimannil is supported by the Building Interdisciplinary Research Careers in Women's Health Grant (#K12HD055887) from the Eunice Kennedy Shriver National Institutes of Child Health and Human Development (NICHD), the Office of Research on Women's Health, and the National Institute on Aging, NIH, administered by the University of Minnesota Deborah E. Powell Center for Women's Health. Dr Shippee's work on this project was supported by funding from the National Center for Research Resources of the National Institutes of Health to the University of Minnesota Clinical and Translational Science Institute (#1UL1RR033183). The other authors (OA, BAV) report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

Authorship Information: Concept and design (KBK, BAV); acquisition of data (KBK); analysis and interpretation of data (KBK, TPS, OA, BAV); drafting of the manuscript (KBK, TPS); critical revision of the manuscript for important intellectual content (TPS, OA, BAV); statistical analysis (KBK, OA); provision of study materials or patients (KBK, BAV); obtaining funding (KBK); administrative, technical, or logistic support (KBK); and supervision (KBK).

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