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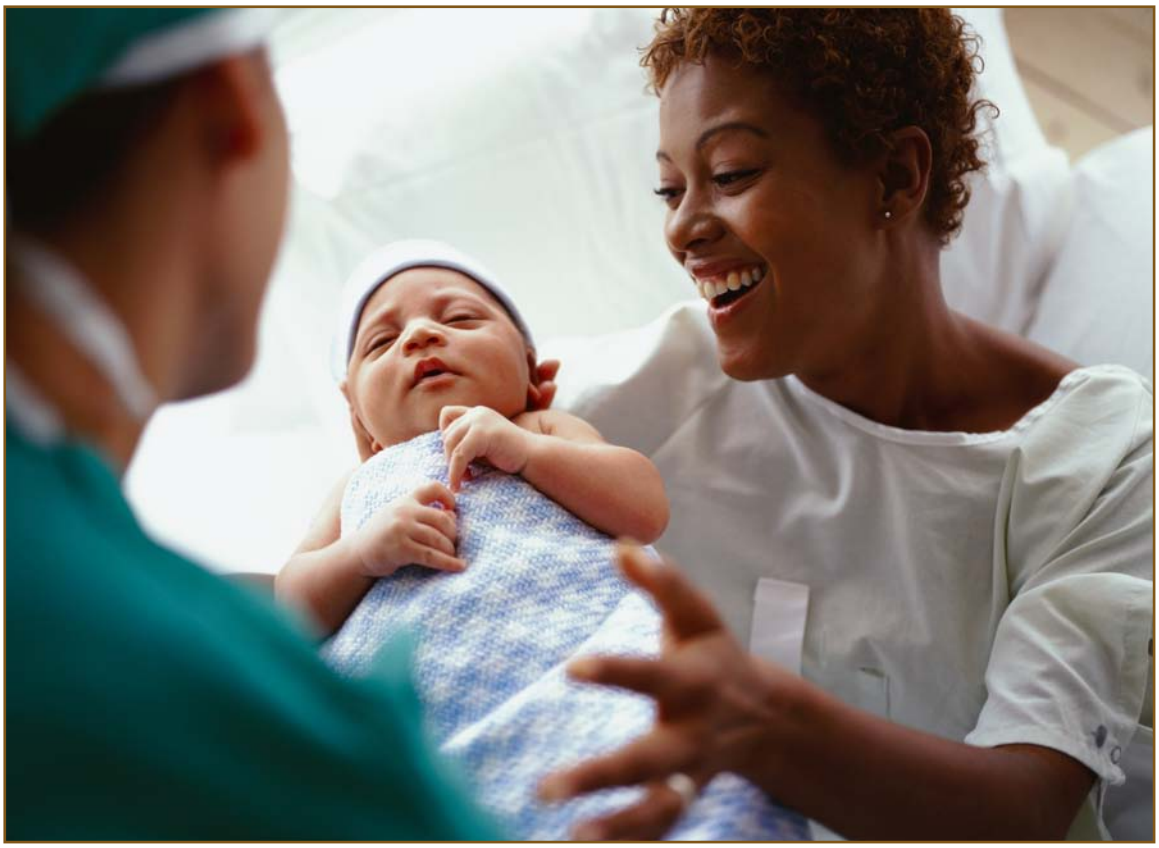

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CONTENTS

Front cover photo: Mother holding her newborn infant.

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Patterns of Health Insurance Coverage Around the Time of Pregnancy Among Women with Live-Born Infants — Pregnancy Risk Assessment Monitoring System, 29 States, 2009

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Abstract

Problem/Condition: In 2009, before passage of the 2010 Patient Protection and Affordable Care Act (ACA), approximately 20% of women aged 18–64 years had no health insurance coverage. In addition, many women experienced transitions in coverage around the time of pregnancy. Having no health insurance coverage or experiencing gaps or shifts in coverage can be a barrier to receiving preventive health services and treatment for health problems that could affect pregnancy and newborn health. With the passage of ACA, women who were previously uninsured or had insurance that provided inadequate coverage might have better access to health services and better coverage, including additional preventive services with no cost sharing. Because certain elements of ACA (e.g., no lifetime dollar limits, dependent coverage to age 26, and provision of preventive services without cost sharing) were implemented as early as September 2010, data from 2009 can be used as a baseline to measure the incremental impact of ACA on the continuity of health care coverage for women around the time of pregnancy.

Reporting Period Covered: 2009.

Description of System: The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing state- and population-based surveillance system designed to monitor selected maternal behaviors and experiences that occur before, during, and shortly after pregnancy among women who deliver live-born infants in selected U.S. states and New York City, New York. PRAMS uses mixed-mode data collection, in which up to three self-administered surveys are mailed to a sample of mothers, and those who do not respond are contacted for telephone interviews. Self-reported survey data are linked to birth certificate data and weighted for sample design, nonresponse, and noncoverage. Annual PRAMS data sets are created and used to produce statewide estimates of preconception and perinatal health behaviors and experiences in selected states and New York City.

This report summarizes data from 29 states that conducted PRAMS in 2009, before the passage of ACA, and achieved an overall weighted response rate of ≥65%. Data on the prevalence of health insurance coverage stability (stable coverage, unstable coverage, and uninsured) across three time periods (the month before pregnancy, during pregnancy, and at the time of delivery) are reported by state and selected maternal characteristics. Women with stable coverage had the same type of health insurance (private or Medicaid) for all three time periods. Women with unstable coverage experienced a change in health insurance coverage between any of the three time periods. This includes movement from having no insurance coverage to gaining coverage, movement from one type of coverage to another, and loss of coverage. Women in the uninsured group had no insurance coverage during any of the three time periods. Estimates for health insurance stability across the three time periods and estimates of coverage during each time period are presented by state. Patterns of movement between the different types of health insurance coverage among women with unstable coverage are described by state and selected maternal characteristics.

Results: In 2009, 30.1% of women who had a live birth experienced changes in health insurance coverage in the period between the month before pregnancy and the time of delivery, either because they lacked coverage at some point or because they moved between different types of coverage. Most women had stable coverage across the three time periods, reporting

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either private coverage (52.8%) or Medicaid coverage (16.1%) throughout. A small percentage of women (1.1%) reported having no health insurance coverage at any point.

Overall, Medicaid coverage increased from 16.6% in the month before pregnancy to 43.9% at delivery. Private coverage decreased from 59.9% in the month before pregnancy to 54.6% at delivery. The percentage of women who were uninsured decreased from 23.4% in the month before pregnancy to 1.5% at the time of delivery.

Among those who experienced changes in coverage, 74.4% reported having no insurance the month before pregnancy, 23.9% reported having private insurance, and 1.8% reported having Medicaid. Among those who started out uninsured before pregnancy, 70.2% reported Medicaid coverage, and 4.1% reported private coverage at the time of delivery. Among those who started out with private coverage, 21.3% reported Medicaid coverage at delivery, and 1.4% reported being uninsured. As a result of these transitions in health insurance coverage, 92.4% of all women who experienced a change in health insurance around the time of pregnancy reported Medicaid coverage at delivery. No women with unstable coverage who started out without insurance in the month before pregnancy reported being uninsured at the time of delivery.

Women who reported unstable coverage were more likely to be young (aged <35 years), be a minority (black, Hispanic, or American Indian/Alaska Native), have a high school education or less, be unmarried, have incomes ≤200% of the federal poverty level (FPL), or have an unintended pregnancy compared with women with stable private coverage. Compared with women with stable Medicaid coverage, women with unstable coverage were more likely to be Hispanic but less likely to be teenagers (aged ≤19 years), be black, have a high school education or less, have incomes ≤200% of the FPL, or have an unintended pregnancy. Women with unstable coverage were more likely than women in either stable coverage group (private or Medicaid) to report entering prenatal care after the first trimester.

Interpretation: In 2009, nearly one third of women reported lacking health insurance or transitioning between types of health insurance coverage around the time of pregnancy. The majority of women who changed health insurance status obtained coverage for prenatal care, delivery, or both through Medicaid. Health insurance coverage during pregnancy can help facilitate access to health care and allow for the identification and treatment of health-related issues; however, prenatal coverage might be too late to prevent the consequences of preexisting conditions and preconception exposures that could affect maternal and infant health. Continuous access to health insurance and health care for women of reproductive age could improve maternal and infant health by providing the opportunity to manage or treat conditions that are present before and between pregnancies.

Public Health Action: PRAMS data can be used to identify patterns of health insurance coverage among women around the time of pregnancy. Removing barriers to obtaining health insurance for women who lack coverage, particularly before pregnancy, could improve the health of women and their infants. The findings in this report can be used by public health professionals, policy analysts, and others to monitor health insurance coverage for women around the time of pregnancy. In particular, 2009 state-specific data can serve as baseline information to assess and monitor changes in health insurance coverage since the passage of ACA.

Introduction

In 2009, before passage of the Patient Protection and Affordable Care Act (ACA), approximately 20% of women aged 18–64 years the United States did not have health insurance (*1*). Some women in the United States have faced challenges obtaining or maintaining health insurance for numerous reasons, including being dependents on the employer plans of others, being employed part time, and having difficulties purchasing insurance in the individual market because of high premiums or restrictions related to health conditions (e.g., pregnancy or chronic medical problems) (*2*,*3*). Young women, minority women, and low-income women are among the groups most likely to lack health insurance (*4*–*8*).

Lack of health insurance is associated with delaying or forgoing preventive health services and other medical care, particularly among young adults and racial/ethnic minorities (*9*,*10*). Delays in accessing preventive health services and needed treatment services can lead to issues as serious as disproportionately high morbidity and mortality rates among the uninsured for certain types of cancer, chronic diseases, or other conditions (*10*–*13*). For women of reproductive age, lack of health insurance, either sustained or temporary, can be a barrier to receiving regular health care, including preventive services and might limit opportunities to identify, manage, or treat health conditions that put women at risk for poor maternal and infant outcomes during pregnancy (*14*). For example, women with certain chronic conditions (e.g., diabetes, hypertension, obesity, thyroid problems, and metabolic and endocrine syndromes) and infectious diseases (e.g., sexually transmitted diseases, including HIV) can have poor birth outcomes if the conditions are unidentified or unmanaged (*14*–*21*).

The majority of pregnant women in the United States attend some prenatal care visits (*22*–*24*). Women who have chronic health conditions or are at risk for pregnancy complications might have frequent contact with health care professionals during pregnancy (*25*,*26*). Therefore, pregnancy provides an opportunity for a woman to engage with health care systems, obtain care that can identify health problems, and receive any needed services to improve both maternal and infant health. Once pregnant, many low-income women who might have been uninsured become eligible for Medicaid, the major public funder of prenatal care and delivery services for women in the United States (*27*,*28*). Medicaid also pays for the delivery of infants to women who might not have been eligible for prenatal care through Medicaid but who receive emergency coverage at the time of delivery. However, for many states without Medicaid waivers in place, Medicaid coverage ends 60 days after delivery. This causes many low-income women to become uninsured again, leading to a cycle in which they move in and out of insurance coverage, a process called churning (*29*). Lack of insurance in the postpartum period, which might be the interconception period for women who become pregnant again, can present another barrier to achieving optimal health before pregnancy and might lead to missed opportunities to prevent poor infant outcomes, especially for women who experienced previous pregnancy complications (*14*).

Churning (*29*–*34*) tends to occur at transition points defined by insurance policies (private or public), such as reaching adulthood and no longer being covered by a parent's insurance plan or getting married or divorced and obtaining or losing insurance coverage under a spouse's plan. Churning also occurs when employment status changes and persons gain or lose coverage from an employer; when health status changes, such as when a person experiences a new disability and becomes eligible for Medicaid; or when persons reach retirement age and qualify for Medicare (*10*,*13*,*32*–*34*). Women in particular have been vulnerable to churning between different types of insurance coverage (*2*,*3*,*35*,*36*).

Ensuring comprehensive health insurance coverage and quality care for all women of reproductive age is critical to improving women's health and infant birth outcomes. The widely varying nature of health care coverage for women in the United States has been well documented (*2*,*3*,*10*,*13*,*33*). CDC recommendations to improve preconception health and health care emphasize the need for women to have access to health care (*14*). In particular, around the time of pregnancy, women's health could be improved by managing chronic conditions and providing counseling on prescription drug exposures and folic acid use (*14*). In addition, ACA includes provisions aimed at improving the quality of care, as well as at increasing the number of women with insurance coverage of higher quality and fewer restrictions than that previously available (*37*–*40*). In response, states have been implementing changes in health insurance coverage in different ways following passage of ACA (*41*). This report summarizes 2009 data from the Pregnancy Risk Assessment Monitoring System (PRAMS) (*42*) regarding patterns of health insurance coverage around the time of pregnancy among women with live-born infants. Because the state-specific data were collected before the implementation of ACA, the findings in this report can be used by public health professionals, policy analysts, and others as a baseline to monitor and compare health insurance coverage trends in this population after the passage of ACA.

Methods

To assess patterns of health insurance coverage around the time of pregnancy among women with live-born infants, CDC analyzed 2009 weighted PRAMS data from 29 states. Respondents were asked whether they had any health insurance plan (referred to interchangeably as health insurance coverage, insurance coverage, or insurance in this report) during three different periods asked about on the PRAMS survey (Box). First, prevalence estimates for health insurance stability were calculated overall, as well as by state. Overall and state prevalence estimates also are presented for health insurance coverage during each time period. Second, the characteristics of the women experiencing changes in coverage around the time of pregnancy are described. Finally, patterns of coverage among women who experienced shifts in coverage are presented.

Project Description

PRAMS, initiated in 1987, is an ongoing state- and population-based surveillance system designed to monitor selected self-reported maternal behaviors and experiences that occur before, during, and after pregnancy among women who deliver a live-born infant. The PRAMS project is administered by CDC through a cooperative agreement with state health departments. Collectively, PRAMS data represent approximately 78% of all live births in the United States (Figure). Additional details about the PRAMS methods have been described elsewhere (*42*).

Data Collection

Using a standardized PRAMS data collection method, all participating health departments select, from birth certificate records, a monthly stratified random sample of 75–300 women who recently gave birth to a live infant. PRAMS has no maternal age restriction; women of all ages are eligible for sampling.

BOX. Pregnancy Risk Assessment Monitoring System insurance questions, 2009 (phase 6)

Questions

1. During the *month before* you got pregnant with your new baby, were you covered by any of these health insurance plans? Check *all* that apply.
2. Did any of these health insurance plans help you pay for your *prenatal care*? Check *all* that apply.
3. Did any of these health insurance plans help you pay for the *delivery* of your new baby? Check *all* that apply.

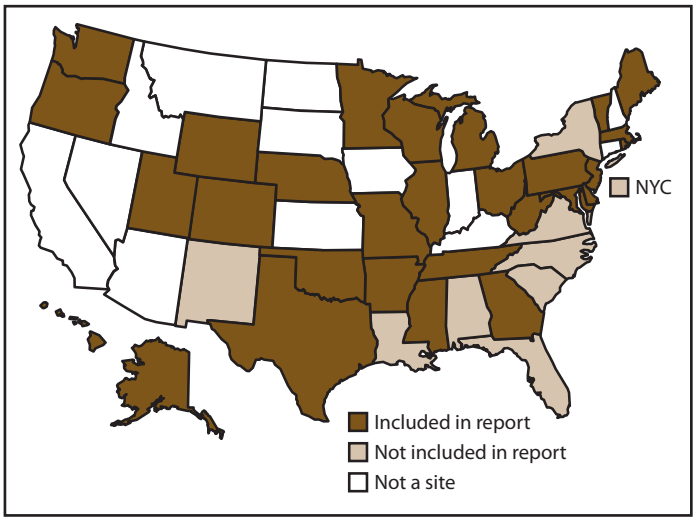
Response Options for All Three Questions

- Health insurance from your job or the job of your husband, partner, or parents
- Health insurance that you or someone else paid for (not from a job)
- Medicaid (or *state Medicaid name*)
- TRICARE or other military health care
- *State-specific option* (e.g., Indian Health Service or tribal)
- *State-specific option* (State name for indigent care)
- *State-specific option* (State Children's Health Insurance Plan or Children's Health Insurance Plan program name)
- Other sources: Please tell us.
- I did not have any health insurance before I got pregnant/to help pay for my prenatal care/to help pay for my delivery.

PRAMS uses mixed-mode data collection, in which up to three self-administered surveys are mailed to mothers in the sample, and those who do not respond receive as many as 15 follow-up phone call attempts to complete a telephone interview. The first survey is usually mailed 2–3 months after the delivery of a live infant to allow for collection of information about postpartum maternal and infant experiences. To minimize recall bias, efforts to contact women end at 9 months postpartum. Survey data are linked to selected birth certificate data and weighted for sample design, nonresponse, and noncoverage.

This report includes PRAMS data from 29 states that collected data in 2009 and achieved a weighted response rate of at least 65%: Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. To minimize nonresponse bias,

FIGURE. Pregnancy Risk Assessment Monitoring System sites, 2009



CDC PRAMS has established the minimum weighted response rate required for state data to be included in published results. This cut off is used to ensure reasonable representation of the population of interest. The weighted response rate indicates the proportion of women sampled who completed a survey, adjusted for sample design. PRAMS participating sites that did not meet the 65% response rate threshold in 2009 (eight states and New York City, New York) are not included in this analysis (Figure).

Data Analysis

The PRAMS questionnaire implemented in 2009 asked about health insurance coverage during three time periods: the month before pregnancy, during pregnancy for prenatal care, and at the time of delivery. The format of each question was the same for each time period assessed, and women were allowed to select multiple responses regarding their coverage in each period (Box) (*43*). Women self-reported their insurance coverage and determined what they considered to be the month before pregnancy, prenatal care, and delivery. Women who reported that they were enrolled in Medicaid or selected a state-named Medicaid program (e.g., RIte Care in Rhode Island) were categorized in the Medicaid group. Women who reported private insurance coverage for a given period alone or in combination with any other kind of insurance (including Medicaid), were categorized with the private insurance group (*44*). Women who reported TRICARE or other military insurance were included with the private insurance group. Similar to the classification used by the National Health Interview Survey (NHIS), women who reported only Indian Health Service (IHS) were included with the uninsured group (*45*). Alaska was an exception to this

categorization because the IHS response option on the Alaska survey included the state-specific Alaska Native Health Service and Native regional health corporation programs. Women who responded to this option were considered to have coverage from a state-specific program.

The PRAMS survey in the 29 selected states in 2009 had 40,388 respondents. This report is restricted to women who provided a response to each of the three insurance questions. Women who left any of the three questions unanswered, as well as women who reported coverage only from a state-specific non-Medicaid program or only selected the "other" write-in response option, were excluded (n = 3,584; 8.9%). In addition, women who reported Medicaid coverage for prenatal care but no coverage for delivery were excluded, as were women who reported patterns of movement across the three time periods for which there were <10 respondents (n = 94; <1%). The final sample size was 36,710.

Maternal characteristics obtained from birth certificate included age, race/ethnicity, education level, marital status, parity, and place of infant birth (delivery location). Maternal race/ethnicity is presented as a combined variable categorized as non-Hispanic white, non-Hispanic black, American Indian or Alaska Native, non-Hispanic other, and Hispanic (of any race). (Non-Hispanic white, non-Hispanic black, and non-Hispanic other are referred to as white, black, and other, respectively, in this report.) Delivery location was categorized as a hospital if it was listed on the birth certificate as a hospital, birthing center, clinic, or doctor's office. Federal poverty level (FPL) was calculated based on the 2009 standards (*46*) and categorized as ≤200% of the FPL and >200% of the FPL. The data on timing of entry into prenatal care and pregnancy intention were self-reported on the PRAMS questionnaire. Initiation of prenatal care was considered to be in the first trimester if the respondent reported her first prenatal visit during the first 3 months of pregnancy (or <13 weeks' gestation). Pregnancy intention was classified as intended if the respondent reported she wanted to be pregnant then or sooner and was classified as unintended if she reported she wanted to be pregnant later or not at all.

All estimates in this report were calculated using weighted PRAMS data, whereas the sample size presented is unweighted. Estimates based on fewer than five persons are not presented. Insurance coverage was classified into four categories: stable private coverage, stable Medicaid coverage, changing or unstable coverage, and uninsured. The unstable category (n = 10,845) includes women who reported a change in health insurance coverage between any of three time periods (the month before pregnancy, during pregnancy, or at the time of delivery). This includes gaining or losing coverage or switching between types of coverage. Conversely, the stable groups (stable private, n = 19,073; stable Medicaid coverage, n = 6,448) were defined as having uninterrupted private insurance coverage or Medicaid coverage, respectively, across all three time periods. The uninsured group (n = 344) included those who had no health insurance across all three time periods.

Weighted data were pooled from 29 states; prevalence estimates and 95% confidence intervals (CIs) overall and by state were calculated for each of the four insurance categories, as were estimates for each of the three time periods. Patterns of movement between different types of health insurance coverage also are reported, with prevalence estimates and 95% CIs.

The patterns of movement between different types of insurance coverage among the subset of women who experienced unstable coverage was further examined. Prevalence estimates by state and selected maternal characteristics were calculated for movement between different types of coverage on the basis of reported insurance status before pregnancy and insurance status at delivery (e.g., no insurance before pregnancy to Medicaid at delivery or no insurance before pregnancy to private insurance at delivery). Multinomial logistic regression was used to assess the odds of having different insurance coverage status by selected maternal characteristics. In the modeling process, stepwise regression was used, controlling for age and race, with significance set at $p<0.05$. Adjusted odds ratios and associated CIs were calculated. All analyses were conducted using statistical software to account for the complex sampling design used by PRAMS (*47*).

Results

Health Insurance Coverage Stability Overall and by State

Aggregated data from 29 PRAMS states indicate that just over half of the women (52.8%) had private health insurance throughout the entire time period (stable private coverage), ranging from 69.5% in Minnesota to 31.6% in Mississippi. Overall, 16.1% of women had Medicaid coverage across all time periods (stable Medicaid coverage), with state-specific estimates ranging from 5.3% in Utah to 30.5% in Maine. Approximately one third of women with a recent live birth (30.1%) experienced unstable health insurance coverage around the time of pregnancy. The prevalence of having unstable insurance varied by state, ranging from 13.4% in Massachusetts to 47.7% in Mississippi. Only 1.1% of women had no insurance coverage at any point around the time of pregnancy; state-specific variation ranged from 0.3% in West Virginia to 2.9% in Wyoming (Table 1).

TABLE 1. Prevalence of women with stable health insurance coverage, unstable health insurance coverage, or no health insurance coverage from the month before pregnancy to the time of delivery, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

		Stable coverage											
		Private			Medicaid			Unstable coverage			Uninsured		
State	Total*	No.	%†	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Total	**36,710**	**19,073**	**52.8**	**(51.9–53.6)**	**6,448**	**16.1**	**(15.4–16.7)**	**10,845**	**30.1**	**(29.2–30.9)**	**344**	**1.1**	**(0.9–1.3)**
Alaska	**1,025**	558	57.2	(53.6–60.7)	166	15.1	(12.6–17.6)	280	25.6	(22.4–28.8)	21	2.2	(1.1–3.3)
Arkansas	**1,009**	392	43.1	(39.0–47.2)	149	13.6	(10.7–16.5)	445	41.1	(37.0–45.1)	23	2.3	(1.2–3.3)
Colorado	**1,766**	1,029	59.3	(56.1–62.6)	182	10.8	(8.6–13.0)	543	29.2	(26.2–32.2)	12	0.7	(0.1–1.3)
Delaware	**944**	540	56.5	(53.3–59.8)	231	25.2	(22.3–28.0)	165	17.3	(14.8–19.8)	8	1.0	(0.3–1.6)
Georgia	**780**	337	42.1	(37.1–47.1)	137	17.2	(13.3–21.1)	296	38.2	(33.2–43.3)	10	2.5	(0.7–4.3)
Hawaii	**1,507**	949	64.4	(61.3–67.5)	283	18.9	(16.4–21.4)	267	16.3	(14.0–18.7)	8	0.4	(0.1–0.7)
Illinois	**1,480**	730	47.6	(44.9–50.3)	322	23.2	(20.9–25.6)	419	28.5	(26.0–31.0)	9	0.6	(0.2–1.1)
Maine	**1,042**	530	50.0	(46.5–53.6)	303	30.5	(27.2–33.9)	203	19.0	(16.2–21.8)	6	0.4	(0.0–0.8)
Maryland	**1,401**	1,024	67.9	(64.1–71.8)	103	7.5	(5.3–9.7)	261	23.0	(19.5–26.5)	13	1.5	(0.4–2.6)
Massachusetts	**1,242**	699	62.8	(59.3–66.2)	363	23.8	(20.9–26.7)	179	13.4	(10.9–16.0)	—§	—	—
Michigan	**1,535**	704	52.1	(49.2–55.1)	413	20.5	(18.1–22.8)	414	27.1	(24.5–29.8)	—	—	—
Minnesota	**1,211**	773	69.5	(66.6–72.3)	211	12.5	(10.5–14.6)	219	17.5	(15.1–19.9)	8	0.5	(0.1–0.9)
Mississippi	**1,278**	386	31.6	(28.5–34.8)	264	19.7	(17.0–22.4)	613	47.7	(44.3–51.1)	15	1.0	(0.3–1.7)
Missouri	**1,319**	696	51.8	(48.6–55.1)	161	12.8	(10.5–15.0)	443	34.1	(31.0–37.2)	19	1.3	(0.6–1.9)
Nebraska	**1,736**	850	57.1	(54.6–59.7)	250	10.2	(8.7–11.6)	627	32.2	(29.7–34.7)	9	0.5	(0.1–0.8)
New Jersey	**1,275**	843	67.9	(65.3–70.5)	197	14.3	(12.2–16.3)	230	17.4	(15.2–19.6)	—	—	—
Ohio	**1,318**	642	54.2	(50.6–57.8)	352	20.6	(17.7–23.6)	312	24.0	(20.8–27.3)	12	1.1	(0.3–2.0)
Oklahoma	**1,988**	846	40.5	(36.9–44.1)	271	14.6	(11.8–17.4)	849	43.7	(40.0–47.4)	22	1.2	(0.4–2.0)
Oregon	**1,535**	717	54.3	(50.5–58.0)	232	10.7	(8.6–12.9)	572	34.6	(31.0–38.2)	14	0.4	(0.0–0.8)
Pennsylvania	**969**	642	61.9	(58.3–65.5)	141	16.1	(13.3–18.9)	169	19.7	(16.7–22.7)	17	2.3	(1.1–3.5)
Rhode Island	**1,210**	665	55.2	(52.0–58.4)	240	20.2	(17.5–22.9)	304	24.5	(21.7–27.3)	—	—	—
Tennessee	**654**	284	44.2	(39.2–49.2)	184	25.3	(20.9–29.7)	182	30.0	(25.3–34.6)	—	—	—
Texas	**1,315**	603	44.4	(41.3–47.5)	157	11.7	(9.5–13.9)	540	42.8	(39.5–46.1)	15	1.1	(0.5–1.8)
Utah	**1,501**	940	68.1	(65.7–70.5)	93	5.3	(4.1–6.5)	440	24.9	(22.6–27.1)	28	1.7	(1.0–2.4)
Vermont	**935**	555	59.3	(56.1–62.6)	187	20.2	(17.5–23.0)	189	20.0	(17.3–22.6)	—	—	—
Washington	**1,467**	698	55.3	(52.0–58.6)	233	13.1	(10.8–15.5)	525	31.0	(27.9–34.0)	11	0.6	(0.1–1.1)
West Virginia	**1,517**	553	39.6	(36.5–42.6)	319	20.3	(17.8–22.8)	638	39.9	(36.8–42.9)	7	0.3	(0.0–0.6)
Wisconsin	**899**	464	60.3	(56.8–63.9)	215	19.0	(16.1–21.8)	210	19.3	(16.4–22.2)	10	1.4	(0.4–2.4)
Wyoming	**852**	424	52.6	(48.6–56.5)	89	8.5	(6.4–10.7)	311	36.0	(32.1–39.8)	28	2.9	(1.7–4.2)
Median	**NA**	NA	55.2	NA	NA	16.1	NA	NA	27.1	NA	NA	0.7	NA
Minimum	**NA**	NA	31.6	NA	NA	5.3	NA	NA	13.4	NA	NA	0.3	NA
Maximum	**NA**	NA	69.5	NA	NA	30.5	NA	NA	47.7	NA	NA	2.9	NA

Abbreviations: CI = confidence interval; NA = not applicable.
* Unweighted sample size.
† Weighted percentage.
§ Estimates not presented for cell sizes of five or fewer.

Health Insurance by Time Period

Insurance coverage was examined overall and by state at each of the three time periods presented in the analysis: the month before pregnancy, during pregnancy, and at delivery.

Month Before Pregnancy

Based on the estimates of all states combined, during the month before pregnancy, 76.6% of women had some type of health insurance (59.9% reported private and 16.6% reported Medicaid), and 23.4% of women reported having no health insurance in the month before pregnancy. Coverage varied by state. Private coverage ranged from 45.3% in Mississippi to 74.6% in Utah; Medicaid coverage ranged from 5.8% in Utah to 31.5% in Maine; and the prevalence of being uninsured in the month before pregnancy ranged from 6.1% in Massachusetts to 36.2% in Oklahoma (Table 2).

During Pregnancy

Prenatal Care

Overall, nearly all women (97.0%) had health insurance coverage during pregnancy to pay for prenatal care, with 56.9% of women reporting private coverage and 40.1% reporting Medicaid. Three percent (3.0%) of women reported no health insurance for prenatal care. The prevalence of private coverage for prenatal care ranged from 36.6% in Mississippi to 73.0% in Minnesota. The prevalence of Medicaid coverage for prenatal care ranged from 19.8% in Utah to 60.2% in Mississippi. The prevalence of no health insurance for prenatal care ranged from 0.6% in Massachusetts to 8.5% in Georgia (Table 3).

Delivery

Overall, almost all women (98.5%) reported having health insurance coverage to pay for delivery, with 54.6% of women

TABLE 2. Prevalence of women with any health insurance, private health insurance, Medicaid, or no insurance the month before pregnancy, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

State	Total*	Any			Private			Medicaid			None		
		No.	%†	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Total	**36,710**	**28,523**	**76.6**	**(75.8–77.4)**	**21,826**	**59.9**	**(59.1–60.8)**	**6,697**	**16.6**	**(16.0–17.3)**	**8,187**	**23.4**	**(22.6–24.2)**
Alaska	**1,025**	796	78.3	(75.2–81.4)	618	62.5	(59.0–66.0)	178	15.8	(13.3–18.3)	229	21.7	(18.6–24.8)
Arkansas	**1,009**	634	66.3	(62.4–70.1)	480	51.8	(47.7–56.0)	154	14.4	(11.4–17.4)	375	33.7	(29.9–37.6)
Colorado	**1,766**	1,332	77.3	(74.6–80.1)	1,142	66.3	(63.1–69.4)	190	11.1	(8.9–13.2)	434	22.7	(19.9–25.4)
Delaware	**944**	840	89.1	(87.1–91.1)	603	63.2	(60.1–66.4)	237	25.9	(23.0–28.8)	104	10.9	(8.9–12.9)
Georgia	**780**	554	69.8	(64.9–74.6)	415	52.6	(47.4–57.7)	139	17.2	(13.3–21.1)	226	30.2	(25.4–35.1)
Hawaii	**1,507**	1,381	92.3	(90.6–94.0)	1,087	72.5	(69.6–75.4)	294	19.8	(17.2–22.4)	126	7.7	(6.0–9.4)
Illinois	**1,480**	1,149	77.4	(75.1–79.7)	821	53.8	(51.0–56.5)	328	23.6	(21.2–26.0)	331	22.6	(20.3–24.9)
Maine	**1,042**	893	86.6	(84.2–89.1)	582	55.2	(51.6–58.7)	311	31.5	(28.1–34.8)	149	13.4	(10.9–15.8)
Maryland	**1,401**	1,206	80.7	(77.3–84.0)	1,099	73.0	(69.3–76.7)	107	7.7	(5.4–9.9)	195	19.3	(16.0–22.7)
Massachusetts	**1,242**	1,148	93.9	(92.2–95.5)	768	68.8	(65.6–72.0)	380	25.1	(22.1–28.1)	94	6.1	(4.5–7.8)
Michigan	**1,535**	1,267	81.1	(78.8–83.5)	836	59.8	(56.9–62.7)	431	21.3	(19.0–23.7)	268	18.9	(16.5–21.2)
Minnesota	**1,211**	1,050	87.1	(84.9–89.2)	826	73.7	(71.0–76.5)	224	13.3	(11.2–15.4)	161	12.9	(10.8–15.1)
Mississippi	**1,278**	840	65.4	(62.1–68.6)	570	45.3	(41.9–48.6)	270	20.1	(17.4–22.8)	438	34.6	(31.4–37.9)
Missouri	**1,319**	958	72.3	(69.4–75.2)	793	59.0	(55.8–62.3)	165	13.2	(10.9–15.6)	361	27.7	(24.8–30.6)
Nebraska	**1,736**	1,281	76.8	(74.6–79.0)	1,019	66.2	(63.7–68.6)	262	10.6	(9.2–12.1)	455	23.2	(21.0–25.4)
New Jersey	**1,275**	1,103	86.7	(84.8–88.7)	902	72.2	(69.7–74.7)	201	14.5	(12.5–16.5)	172	13.3	(11.3–15.2)
Ohio	**1,318**	1,120	83.0	(80.1–85.9)	755	61.7	(58.2–65.3)	365	21.3	(18.3–24.2)	198	17.0	(14.1–19.9)
Oklahoma	**1,988**	1,292	63.8	(60.1–67.4)	1,014	48.7	(45.0–52.4)	278	15.0	(12.2–17.9)	696	36.2	(32.6–39.9)
Oregon	**1,535**	1,084	72.9	(69.6–76.2)	840	61.7	(58.2–65.3)	244	11.1	(8.9–13.3)	451	27.1	(23.8–30.4)
Pennsylvania	**969**	828	83.6	(80.8–86.4)	684	67.1	(63.6–70.6)	144	16.5	(13.6–19.3)	141	16.4	(13.6–19.2)
Rhode Island	**1,210**	1,012	84.3	(81.9–86.7)	756	62.7	(59.5–65.8)	256	21.6	(18.8–24.4)	198	15.7	(13.3–18.1)
Tennessee	**654**	528	79.4	(75.3–83.6)	339	52.8	(47.8–57.9)	189	26.6	(22.1–31.1)	126	20.6	(16.4–24.7)
Texas	**1,315**	879	64.0	(60.8–67.3)	716	51.9	(48.7–55.0)	163	12.2	(9.9–14.4)	436	36.0	(32.7–39.2)
Utah	**1,501**	1,145	80.5	(78.5–82.5)	1,043	74.6	(72.4–76.8)	102	5.8	(4.6–7.1)	356	19.5	(17.5–21.5)
Vermont	**935**	808	85.9	(83.5–88.2)	613	65.0	(61.8–68.2)	195	20.9	(18.1–23.6)	127	14.1	(11.8–16.5)
Washington	**1,467**	1,054	76.3	(73.5–79.0)	810	62.6	(59.4–65.7)	244	13.7	(11.3–16.1)	413	23.7	(21.0–26.5)
West Virginia	**1,517**	998	68.4	(65.5–71.3)	670	47.5	(44.4–50.7)	328	20.9	(18.3–23.4)	519	31.6	(28.7–34.5)
Wisconsin	**899**	744	86.1	(83.6–88.6)	520	66.4	(63.0–69.8)	224	19.7	(16.8–22.6)	155	13.9	(11.4–16.4)
Wyoming	**852**	599	72.6	(69.1–76.0)	505	63.5	(59.8–67.2)	94	9.0	(6.9–11.2)	253	27.4	(24.0–30.9)
Median	**NA**	NA	79.4	NA	NA	62.6	NA	NA	16.5	NA	NA	20.6	NA
Minimum	**NA**	NA	63.8	NA	NA	45.3	NA	NA	5.8	NA	NA	6.1	NA
Maximum	**NA**	NA	93.9	NA	NA	74.6	NA	NA	31.5	NA	NA	36.2	NA

Abbreviations: CI = confidence interval; NA = not applicable.
* Unweighted sample size.
† Weighted percentage.

reporting private health insurance coverage, 43.9% reporting Medicaid coverage, and 1.5% reporting no insurance. The prevalence of private coverage for delivery ranged from 33.6% in Mississippi to 71.5% in Minnesota. The prevalence of Medicaid coverage at delivery ranged from 26.7% in Utah to 64.8% in Mississippi. The prevalence of having no insurance at the time of delivery ranged from 0.6% in Michigan, Minnesota, and Washington to 5.4% in Wyoming (Table 4).

Health Insurance Coverage Stability by Maternal Characteristics

The demographic and other characteristics of women varied among the different insurance coverage groups. For example, teenagers (those aged ≤19 years) and young adults (those aged 20–25 years) contributed a relatively high percentage to the unstable and stable Medicaid groups. Although 9.9% of the total population was teenagers, they accounted for 24.4% of the stable Medicaid group and 14.3% of the unstable group; 28.7% of the total population was women aged 20–25 years, who accounted for 40.0% of the stable Medicaid group and 44.0% of the unstable group. Hispanic women comprised 17.8% of the total population but accounted for 30.0% of the unstable group and 28.1% of the uninsured. Women with more than a high school education comprised 56.8% of the total population and accounted for 79.9% of the stable private group. Unmarried women comprised 38.6% of the total population but 60.9% of the unstable group. Women with incomes ≤200% FPL made up 49.5% of the total population but accounted for 83.8% of the unstable group and 60.9% of the uninsured group. Women who entered prenatal care after the first trimester comprised 18.0% of the total population but accounted for 32.2% of the unstable group and 45.5% of the uninsured group (Table 5).

Multivariable modeling of the aggregated data from the 29 PRAMS states (Table 5) was used to compare women in the unstable group with those in the stable private group and

TABLE 3. Prevalence of women with any health insurance, private health insurance, Medicaid, or no insurance during pregnancy, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

State	Total*	Any			Private			Medicaid			None		
		No.	%†	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Total	**36,710**	**35,663**	**97.0**	**(96.7–97.4)**	**20,695**	**56.9**	**(56.1–57.8)**	**14,968**	**40.1**	**(39.2–40.9)**	**1,047**	**3.0**	**(2.6–3.4)**
Alaska	**1,025**	993	97.1	(95.9–98.3)	615	62.5	(59.0–66.0)	378	34.6	(31.2–38.1)	32	2.9	(1.7–4.1)
Arkansas	**1,009**	967	95.5	(93.8–97.1)	434	46.7	(42.6–50.8)	533	48.8	(44.6–52.9)	42	4.5	(2.9–6.2)
Colorado	**1,766**	1,661	94.3	(92.7–95.8)	1,096	63.1	(59.9–66.3)	565	31.2	(28.1–34.3)	105	5.7	(4.2–7.3)
Delaware	**944**	918	97.0	(95.9–98.2)	565	59.3	(56.1–62.5)	353	37.7	(34.6–40.9)	26	3.0	(1.8–4.1)
Georgia	**780**	730	91.5	(88.4–94.7)	368	45.3	(40.2–50.3)	362	46.2	(41.1–51.3)	50	8.5	(5.3–11.6)
Hawaii	**1,507**	1,482	98.6	(97.9–99.3)	1,052	70.9	(68.0–73.8)	430	27.7	(24.9–30.6)	25	1.4	(0.7–2.1)
Illinois	**1,480**	1,464	99.0	(98.4–99.5)	775	50.7	(48.0–53.4)	689	48.2	(45.5–51.0)	16	1.0	(0.5–1.6)
Maine	**1,042**	1,028	98.9	(98.2–99.7)	571	53.8	(50.2–57.3)	457	45.1	(41.6–48.7)	14	1.1	(0.3–1.8)
Maryland	**1,401**	1,366	95.4	(93.6–97.2)	1,072	71.0	(67.2–74.8)	294	24.4	(20.8–28.0)	35	4.6	(2.8–6.4)
Massachusetts	**1,242**	1,235	99.4	(98.8–100.0)	756	67.4	(64.1–70.6)	479	32.1	(28.8–35.3)	7	0.6	(0.0–1.2)
Michigan	**1,535**	1,521	98.9	(98.2–99.5)	794	57.1	(54.2–60.0)	727	41.8	(38.9–44.7)	14	1.1	(0.5–1.8)
Minnesota	**1,211**	1,194	98.9	(98.3–99.5)	817	73.0	(70.2–75.8)	377	25.9	(23.2–28.6)	17	1.1	(0.5–1.7)
Mississippi	**1,278**	1,237	96.8	(95.6–98.0)	447	36.6	(33.3–39.9)	790	60.2	(56.8–63.5)	41	3.2	(2.0–4.4)
Missouri	**1,319**	1,294	98.2	(97.3–99.0)	741	55.2	(51.9–58.4)	553	43.0	(39.8–46.2)	25	1.8	(1.0–2.7)
Nebraska	**1,736**	1,701	98.0	(97.3–98.8)	942	62.6	(60.1–65.0)	759	35.5	(33.0–37.9)	35	2.0	(1.2–2.7)
New Jersey	**1,275**	1,258	98.7	(98.1–99.4)	888	71.2	(68.7–73.7)	370	27.5	(25.1–30.0)	17	1.3	(0.6–1.9)
Ohio	**1,318**	1,295	98.1	(97.1–99.1)	709	59.7	(56.1–63.3)	586	38.4	(34.8–41.9)	23	1.9	(0.9–2.9)
Oklahoma	**1,988**	1,929	96.6	(95.2–97.9)	924	44.2	(40.6–47.9)	1,005	52.3	(48.6–56.0)	59	3.4	(2.1–4.8)
Oregon	**1,535**	1,476	97.8	(97.1–98.5)	791	58.8	(55.2–62.4)	685	39.0	(35.4–42.6)	59	2.2	(1.5–2.9)
Pennsylvania	**969**	939	96.4	(94.9–97.8)	677	65.8	(62.3–69.3)	262	30.6	(27.1–34.0)	30	3.6	(2.2–5.1)
Rhode Island	**1,210**	1,203	99.4	(99.0–99.9)	737	60.9	(57.8–64.1)	466	38.5	(35.4–41.6)	7	0.6	(0.1–1.0)
Tennessee	**654**	643	97.6	(96.0–99.3)	307	48.5	(43.5–53.5)	336	49.1	(44.1–54.2)	11	2.4	(0.7–4.0)
Texas	**1,315**	1,270	96.4	(95.1–97.6)	656	48.8	(45.6–52.0)	614	47.6	(44.3–50.8)	45	3.6	(2.4–4.9)
Utah	**1,501**	1,350	92.5	(91.3–93.8)	1,020	72.7	(70.5–75.0)	330	19.8	(17.6–21.9)	151	7.5	(6.2–8.7)
Vermont	**935**	923	98.7	(97.9–99.5)	594	63.0	(59.7–66.2)	329	35.7	(32.5–38.9)	12	1.3	(0.5–2.1)
Washington	**1,467**	1,435	98.8	(98.2–99.4)	757	60.3	(57.1–63.5)	678	38.5	(35.3–41.7)	32	1.2	(0.6–1.8)
West Virginia	**1,517**	1,500	99.0	(98.3–99.6)	610	44.3	(41.2–47.4)	890	54.7	(51.6–57.8)	17	1.0	(0.4–1.7)
Wisconsin	**899**	880	97.7	(96.4–98.9)	500	64.6	(61.1–68.0)	380	33.1	(29.7–36.5)	19	2.3	(1.1–3.6)
Wyoming	**852**	771	91.6	(89.7–93.6)	480	58.9	(55.0–62.8)	291	32.7	(29.0–36.5)	81	8.4	(6.4–10.3)
Median	**NA**	NA	97.8	NA	NA	59.7	NA	NA	38.4	NA	NA	2.2	NA
Minimum	**NA**	NA	91.5	NA	NA	36.6	NA	NA	19.8	NA	NA	0.6	NA
Maximum	**NA**	NA	99.4	NA	NA	73.0	NA	NA	60.2	NA	NA	8.5	NA

Abbreviations: CI = confidence interval; NA = not applicable.
* Unweighted sample size.
† Weighted percentage.

those in the stable Medicaid group. Results indicated that women with the following characteristics had lower odds of having stable private coverage than unstable coverage: women who were younger (i.e., aged 20–25 years compared with ≥35 years), were Hispanic or American Indian/Alaska Native (AI/AN) compared with white, had a high school education or less compared with greater than high school education, were unmarried compared with married, had incomes ≤200% of the FPL compared with >200% of the FPL, or experienced an unintended pregnancy compared with an intended pregnancy.

Women with the following characteristics had higher odds of reporting stable Medicaid coverage than unstable coverage: women who were aged ≤19 years compared with those aged ≥35 years, who were black compared with white, who had a high school education or less compared with greater than high school education, who were unmarried compared with married, who had incomes ≤200% of the FPL compared with >200% of the FPL, or who were multiparous. Women who were Hispanic compared with white were the only group with higher odds of experiencing unstable coverage than stable Medicaid coverage. Women who entered prenatal care after the first trimester compared with entering in the first trimester had higher odds of being in the unstable group than either of the stable coverage groups (private or Medicaid) (Table 5).

Patterns of Movement Among Women with Unstable Health Insurance

Overall, the unstable group (n = 10,845) was primarily composed of women who started out uninsured in the month before pregnancy (74.4%), followed by those who had private insurance in the month before pregnancy (23.9%) and a small percentage of women who reported Medicaid in the month before pregnancy (1.8%). At time of delivery, most women in this unstable group had shifted to Medicaid (92.4%). Some women moved to private insurance (6.2%), and a small percentage became uninsured (1.4%) (Table 6). Patterns of movement, or churning, among this group

TABLE 4. Prevalence of women with any health insurance, private health insurance, Medicaid, or no insurance at delivery, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

		Any			Private			Medicaid			None		
State	Total*	No.	%†	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Total	**36,710**	**36,196**	**98.5**	**(98.3–98.7)**	**19,843**	**54.6**	**(53.8–55.5)**	**16,353**	**43.9**	**(43.0–44.7)**	**514**	**1.5**	**(1.3–1.7)**
Alaska	**1,025**	1,003	97.7	(96.5–98.8)	592	60.0	(56.5–63.6)	411	37.6	(34.2–41.1)	22	2.3	(1.2–3.5)
Arkansas	**1,009**	974	96.4	(95.0–97.8)	413	45.5	(41.4–49.6)	561	50.9	(46.8–55.0)	35	3.6	(2.2–5.0)
Colorado	**1,766**	1,729	97.9	(97.0–98.9)	1,066	61.1	(57.9–64.4)	663	36.8	(33.6–40.0)	37	2.1	(1.1–3.0)
Delaware	**944**	934	98.8	(98.0–99.5)	547	57.3	(54.0–60.5)	387	41.5	(38.3–44.7)	10	1.2	(0.5–2.0)
Georgia	**780**	767	97.0	(95.1–98.9)	350	43.7	(38.7–48.7)	417	53.3	(48.3–58.4)	13	3.0	(1.1–4.9)
Hawaii	**1,507**	1,488	98.8	(98.2–99.5)	985	66.2	(63.2–69.3)	503	32.6	(29.6–35.6)	19	1.2	(0.5–1.8)
Illinois	**1,480**	1,470	99.3	(98.8–99.7)	749	48.9	(46.2–51.6)	721	50.3	(47.6–53.1)	10	0.7	(0.3–1.2)
Maine	**1,042**	1,033	99.3	(98.7–99.9)	550	52.0	(48.4–55.5)	483	47.3	(43.8–50.8)	9	0.7	(0.1–1.3)
Maryland	**1,401**	1,387	98.4	(97.3–99.5)	1,044	69.0	(65.1–72.8)	343	29.5	(25.7–33.2)	14	1.6	(0.5–2.7)
Massachusetts	**1,242**	1,240	99.9	(99.8–100.0)	726	64.4	(61.0–67.8)	514	35.5	(32.1–38.9)	—§	—	—
Michigan	**1,535**	1,525	99.4	(99.0–99.8)	741	54.6	(51.7–57.5)	784	44.8	(41.9–47.7)	10	0.6	(0.2–1.0)
Minnesota	**1,211**	1,200	99.4	(98.9–99.8)	796	71.5	(68.7–74.3)	404	27.9	(25.1–30.7)	11	0.6	(0.2–1.1)
Mississippi	**1,278**	1,258	98.4	(97.5–99.3)	405	33.6	(30.4–36.8)	853	64.8	(61.5–68.0)	20	1.6	(0.7–2.5)
Missouri	**1,319**	1,296	98.5	(97.9–99.2)	717	53.4	(50.2–56.7)	579	45.1	(41.9–48.3)	23	1.5	(0.8–2.1)
Nebraska	**1,736**	1,711	98.2	(97.5–99.0)	898	60.2	(57.6–62.7)	813	38.1	(35.6–40.6)	25	1.8	(1.0–2.5)
New Jersey	**1,275**	1,266	99.3	(98.8–99.8)	866	69.5	(66.9–72.0)	400	29.8	(27.3–32.4)	9	0.7	(0.2–1.2)
Ohio	**1,318**	1,301	98.3	(97.2–99.3)	667	56.1	(52.5–59.7)	634	42.2	(38.6–45.8)	17	1.7	(0.7–2.8)
Oklahoma	**1,988**	1,952	97.5	(96.3–98.7)	880	42.1	(38.5–45.8)	1,072	55.4	(51.7–59.1)	36	2.5	(1.3–3.7)
Oregon	**1,535**	1,519	99.3	(98.7–99.9)	752	56.0	(52.3–59.7)	767	43.4	(39.7–47.1)	16	0.7	(0.1–1.3)
Pennsylvania	**969**	949	97.4	(96.2–98.7)	660	63.7	(60.1–67.2)	289	33.8	(30.2–37.3)	20	2.6	(1.3–3.8)
Rhode Island	**1,210**	1,208	99.9	(99.7–100.0)	697	57.8	(54.6–60.9)	511	42.1	(39.0–45.3)	—	—	—
Tennessee	**654**	650	99.5	(98.7–100.0)	287	44.6	(39.7–49.6)	363	54.8	(49.8–59.8)	—	—	—
Texas	**1,315**	1,293	98.3	(97.5–99.1)	632	46.6	(43.4–49.8)	661	51.7	(48.6–54.8)	22	1.7	(0.9–2.5)
Utah	**1,501**	1,462	97.7	(96.8–98.5)	983	70.9	(68.6–73.2)	479	26.7	(24.5–29.0)	39	2.3	(1.5–3.2)
Vermont	**935**	928	99.1	(98.4–99.8)	574	61.4	(58.1–64.6)	354	37.7	(34.5–41.0)	7	0.9	(0.2–1.6)
Washington	**1,467**	1,455	99.4	(98.8–99.9)	735	57.5	(54.3–60.8)	720	41.8	(38.6–45.1)	12	0.6	(0.1–1.2)
West Virginia	**1,517**	1,503	99.3	(98.8–99.8)	587	42.5	(39.4–45.6)	916	56.8	(53.7–59.9)	14	0.7	(0.2–1.2)
Wisconsin	**899**	888	98.4	(97.4–99.5)	485	62.5	(58.9–66.0)	403	36.0	(32.5–39.5)	11	1.6	(0.5–2.6)
Wyoming	**852**	807	94.6	(92.8–96.4)	459	56.8	(52.9–60.7)	348	37.8	(43.0–44.7)	45	5.4	(3.6–7.2)
Median	**NA**	NA	98.5	NA	NA	57.3	NA	NA	41.8	NA	NA	1.5	NA
Minimum	**NA**	NA	94.6	NA	NA	33.6	NA	NA	26.7	NA	NA	0.6	NA
Maximum	**NA**	NA	99.9	NA	NA	71.5	NA	NA	64.8	NA	NA	5.4	NA

Abbreviations: CI = confidence interval; NA = not applicable.
* Unweighted sample size.
† Weighted percentage.
§ Estimates not presented for cell sizes of five or fewer.

of women with unstable health insurance were examined in more detail based on the type of insurance reported the month before pregnancy and the type reported at the time of delivery.

Overall and by State

Uninsured Before Pregnancy

Among women who experienced unstable health insurance coverage around the time of pregnancy, the most common pattern of movement was from being uninsured before pregnancy to having Medicaid at delivery (n = 7,357). This shift accounted for 70.2% of all women with unstable coverage (Table 6) and for 94.5% of the women who started out with no insurance in the month before pregnancy (Table 7). Among women who were uninsured in the month before pregnancy, the prevalence of moving to Medicaid coverage by the time of delivery varied by state, ranging from 83.6% in Hawaii to 98.7% in Tennessee (Table 7).

The remaining 5.5% of women who started out uninsured before pregnancy reported private coverage at time of delivery. The prevalence of moving from no coverage to private coverage ranged from 2.4% in Maryland to 16.4% in Hawaii (Table 7). No women with unstable coverage who started out without insurance in the month before pregnancy reported being uninsured at the time of delivery.

Private Insurance Before Pregnancy

The second most common type of movement among women who experienced unstable coverage was from private insurance during the month before pregnancy to Medicaid coverage at delivery (n = 2,447). This shift accounted for 21.3% of all women with unstable coverage (Table 6) and for 89.4% of 2,753 women who started out with private coverage (Table 8). Among women with unstable coverage, the prevalence of moving from private insurance before pregnancy to Medicaid at delivery ranged from 70.3% in Wyoming to 98.1% in Tennessee

(Table 8). Numbers for movement from private insurance before pregnancy to private insurance or no insurance coverage at delivery were insufficient to report by state.

Medicaid Before Pregnancy

A small group of women, 1.8% of all women in the unstable group (n = 249), started with Medicaid in the month before pregnancy (Table 6). Among these women, 54.9% reported private coverage at delivery, 40.5% reported Medicaid coverage at delivery, and none reported being uninsured at delivery. Sample sizes were too small to provide reliable estimates by state.

By Maternal Characteristics

Uninsured Before Pregnancy

Among women who moved from no insurance before pregnancy to private insurance at delivery, the majority were aged 20–34 years, were white, had more than a high school

TABLE 5. Prevalence of women with stable health insurance coverage, unstable health insurance coverage, or no health insurance coverage from the month before pregnancy to the time of delivery, by selected maternal characteristics — Pregnancy Risk Assessment Monitoring System, 29 states,* 2009

				Stable coverage														
	Total			Private					Medicaid					Unstable coverage			Uninsured		
Characteristic	No.†	%§	(95% CI)	No.	%	(95% CI)	AOR¶	(95% CI)	No.	%	(95% CI)	AOR**	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Overall	**36,710**	**100.0**	**NA**	**19,073**	**52.7**	**(51.9–53.6)**	**NA**	**NA**	**6,448**	**16.1**	**(15.4–16.7)**	**NA**	**NA**	**10,845**	**30.1**	**(29.2–30.9)**	**344**	**1.1**	**(0.9–1.3)**
Age (yrs)																			
≤19	**3,542**	**9.9**	**(9.3–10.5)**	617	3.2	(2.7–3.6)	1.0	(0.7–1.4)	1,421	24.4	(22.3–26.4)	3.5	(2.5–4.8)	1,486	14.3	(13.0–15.6)	18	4.4	(1.0–7.8)
20–25	**10,635**	**28.7**	**(27.9–29.5)**	3,240	16.4	(15.5–17.3)	0.4	(0.3–0.5)	2,548	40.0	(37.7–42.2)	1.3	(1.0–1.6)	4,729	44.0	(42.2–45.8)	118	34.8	(25.6–44.0)
26–34	**16,990**	**47.7**	**(46.8–48.6)**	11,118	61.2	(60.1–62.3)	0.8	(0.7–1.0)	2,009	29.6	(27.6–31.6)	1.1	(0.9–1.5)	3,696	33.6	(31.9–35.3)	167	48.1	(38.4–57.8)
≥35	**5,541**	**13.7**	**(13.1–14.3)**	4,097	19.3	(18.4–20.2)	Ref.	Ref.	469	6.1	(5.1–7.0)	Ref.	Ref.	934	8.1	(7.0–9.1)	41	12.7	(6.8–18.6)
Race/Ethnicity																			
White, non-Hispanic	**20,432**	**61.4**	**(60.8–62.0)**	12,792	74.8	(74.0–75.5)	Ref.	Ref.	2,446	42.8	(41.2–44.4)	Ref.	Ref.	5,000	47.9	(46.7–49.1)	194	61.8	(55.7–67.8)
Black, non-Hispanic	**5,883**	**14.0**	**(13.6–14.5)**	1,824	8.0	(7.5–8.5)	0.9	(0.7–1.0)	2,040	30.1	(28.7–31.6)	1.8	(1.6–2.2)	1,991	16.4	(15.5–17.3)	28	4.5	(3.2–5.7)
Hispanic	**5,029**	**17.8**	**(17.3–18.2)**	1,461	9.5	(9.1–9.9)	0.5	(0.4–0.6)	1,086	21.5	(20.4–22.5)	0.6	(0.5–0.7)	2,409	30.0	(29.0–31.0)	73	28.1	(21.3–35.0)
American Indian/ Alaska Native	**1,162**	**0.7**	**(0.7–0.8)**	301	0.3	(0.3–0.4)	0.4	(0.3–0.7)	344	1.2	(1.0–1.4)	0.9	(0.7–1.3)	489	1.1	(0.9–1.3)	28	2.3	(1.1–3.6)
Other	**3,958**	**6.0**	**(5.7–6.4)**	2,567	7.5	(7.0–7.9)	0.9	(0.7–1.1)	496	4.4	(3.7–5.1)	1.3	(1.0–1.7)	875	4.5	(3.9–5.1)	20	3.3	(0.1–6.5)
Education																			
<High school	**5,624**	**15.7**	**(15.0–16.4)**	703	3.7	(3.2–4.2)	0.3	(0.3–0.4)	2,201	36.7	(34.5–38.9)	1.8	(1.5–2.2)	2,603	24.8	(23.2–26.4)	117	43.7	(35.9–51.4)
High school	**9,995**	**27.4**	**(26.6–28.3)**	3,157	16.4	(15.5–17.3)	0.5	(0.4–0.6)	2,645	41.0	(38.8–43.3)	1.4	(1.2–1.6)	4,116	39.8	(38.0–41.6)	77	21.2	(13.3–29.1)
>High school	**20,630**	**56.8**	**(56.0–57.7)**	14,998	79.9	(78.9–80.9)	Ref.	Ref.	1,522	22.3	(20.6–24.0)	Ref.	Ref.	3,967	35.4	(33.8–37.1)	143	35.1	(28.0–42.3)
Marital status																			
Married	**22,364**	**61.4**	**(60.5–62.3)**	16,080	84.9	(84.0–85.8)	Ref.	Ref.	1,627	25.0	(23.1–26.9)	Ref.	Ref.	4,416	39.1	(37.4–40.9)	241	73.4	(65.1–81.7)
Not married	**14,316**	**38.6**	**(37.7–39.5)**	2,983	15.1	(14.2–16.0)	0.3	(0.3–0.4)	4,819	75.0	(73.1–76.9)	1.7	(1.4–1.9)	6,412	60.9	(59.1–62.6)	102	26.6	(18.3–34.9)
Federal poverty level																			
≤200%	**17,510**	**49.5**	**(48.6–50.4)**	3,615	18.0	(17.1–18.9)	0.1	(0.1–0.1)	5,437	94.8	(93.7–95.9)	2.3	(1.8–3.0)	8,279	83.8	(82.5–85.1)	179	60.9	(53.0–68.8)
>200%	**16,765**	**50.5**	**(49.6–51.4)**	14,720	82.0	(81.1–82.9)	Ref.	Ref.	282	5.2	(4.1–6.3)	Ref.	Ref.	1,637	16.2	(14.9–17.5)	126	39.1	(31.2–47.0)
Prenatal care initiation																			
First trimester	**29,688**	**82.0**	**(81.2–82.7)**	17,302	93.0	(92.4–93.6)	Ref.	Ref.	4,625	73.6	(71.6–75.7)	Ref.	Ref.	7,577	67.8	(66.1–69.6)	184	54.5	(45.4–63.5)
Later	**6,370**	**18.0**	**(17.3–18.8)**	1,546	7.0	(6.4–7.6)	0.4	(0.3–0.5)	1,631	26.4	(24.3–28.4)	0.6	(0.5–0.7)	3,041	32.2	(30.4–33.9)	152	45.5	(36.5–54.6)
Delivery location																			
Hospital	**36,482**	**99.4**	**(99.3–99.5)**	18,996	99.5	(99.3–99.7)	Ref.	Ref.	6,426	99.9	(99.9–100.0)	Ref.	Ref.	10,771	99.5	(99.3–99.7)	289	82.9	(78.3–87.6)
Residence	**208**	**0.6**	**(0.5–0.7)**	71	0.5	(0.3–0.7)	0.4	(0.2–1.1)	17	0.1	(0.0–0.1)	0.2	(0.1–0.5)	65	0.5	(0.3–0.7)	55	17.1	(12.4–21.7)
Parity																			
Primiparous	**15,546**	**41.3**	**(40.4–42.2)**	8,404	42.3	(41.2–43.5)	Ref.	Ref.	1,923	30.1	(28.0–32.2)	Ref.	Ref.	5,111	45.9	(44.1–47.7)	108	31.1	(22.2–40.0)
Multiparous	**21,068**	**58.7**	**(57.8–59.6)**	10,595	57.7	(56.5–58.8)	1.1	(1.0–1.3)	4,501	69.9	(67.8–72.0)	3.6	(3.0–4.3)	5,678	54.1	(52.3–55.9)	235	68.9	(60.0–77.8)
Pregnancy intention																			
Intended	**20,608**	**56.4**	**(55.5–57.3)**	13,413	70.4	(69.3–71.5)	Ref.	Ref.	2,396	36.8	(34.6–39.0)	Ref.	Ref.	4,626	42.2	(40.4–44.0)	173	55.6	(46.1–65.0)
Unintended	**15,473**	**43.6**	**(42.7–44.5)**	5,375	29.6	(28.5–30.7)	0.8	(0.7–0.9)	3,910	63.2	(61.0–65.4)	1.0	(0.8–1.1)	6,027	57.8	(56.0–59.6)	161	44.4	(35.0–53.9)

Abbreviations: AOR = adjusted odds ratio; CI = confidence interval; NA = not applicable; Ref. = reference.

* Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

† Unweighted sample size.

§ Weighted percentage.

¶ AOR comparing characteristics of women with stable private coverage with those with unstable coverage.

** AOR comparing characteristics of women with stable Medicaid coverage with those with unstable coverage.

education, were married, had incomes ≤200% of the FPL, entered prenatal care in the first trimester, were multiparous, or reported an unintended pregnancy. In contrast, among women who were uninsured in the month before pregnancy and reported Medicaid coverage at delivery, the majority were young (aged ≤25 years), were non-white (black, Hispanic, AI/AN, or other), had a high school education or less, or were unmarried (Table 9).

TABLE 6. Prevalence of movement between different types of health insurance coverage among women with unstable coverage, by type of coverage the month before pregnancy and type of coverage at delivery — Pregnancy Risk Assessment Monitoring System, 29 states,* 2009

Insurance before pregnancy	Insurance at delivery											
	Private			Medicaid			Uninsured			Total		
	No.†	%§	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)	No.	%	(95% CI)
Private	136	1.1	(0.8–1.5)	2,447	21.3	(19.9–22.7)	170	1.4	(1.0–1.8)	**2,753**	**23.9**	**(22.4–25.3)**
Medicaid	148	1.0	(0.7–1.2)	101	0.8	(0.4–1.1)	0.0	0.0	(0.0–0.0)	**249**	**1.8**	**(1.3–2.2)**
Uninsured	486	4.1	(3.4–4.8)	7,357	70.2	(68.7–71.8)	0.0	0.0	(0.0–0.0)	**7,843**	**74.4**	**(72.9–75.8)**
Total	**770**	**6.2**	**(5.4–7.1)**	**9,905**	**92.4**	**(91.5–93.2)**	**170**	**1.4**	**(1.0–1.8)**	**10,845**	**100.0**	**(100.0–100.0)**

Abbreviation: CI = confidence interval.
* Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.
† Unweighted sample size.
§ Weighted percentage.

TABLE 7. Prevalence of private health insurance coverage or Medicaid coverage at time of delivery among women with unstable coverage who were uninsured the month before pregnancy, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

State	Insurance at delivery					
	Private			Medicaid		
	No.*	%†	(95% CI)	No.	%	(95% CI)
Total (n = 7,843)	**486**	**5.5**	**(4.6–6.5)**	**7,357**	**94.5**	**(93.5–95.3)**
Alaska	25	12.3	(6.6–18.1)	183	87.7	(81.9–93.4)
Arkansas	14	3.5	(0.9–6.0)	338	96.5	(94.0–99.1)
Colorado	27	7.2	(3.6–10.7)	395	92.8	(89.3–96.4)
Delaware	—§	—	—	94	97.6	(94.3–100.0)
Georgia	9	4.4	(0.5–8.4)	207	95.6	(91.6–99.5)
Hawaii	23	16.4	(7.9–24.9)	95	83.6	(75.1–92.1)
Illinois	9	2.9	(0.9–4.8)	313	97.1	(95.2–99.1)
Maine	15	10.1	(4.1–16.2)	128	89.9	(83.8–95.9)
Maryland	12	2.4	(0.1–4.7)	170	97.6	(95.3–99.9)
Massachusetts	10	8.0	(1.3–14.6)	83	92.0	(85.4–98.7)
Michigan	19	7.0	(3.4–10.6)	245	93.0	(89.4–96.6)
Minnesota	12	10.2	(4.2–16.2)	141	89.8	(83.8–95.8)
Mississippi	10	3.3	(1.1–5.6)	413	96.7	(94.4–98.9)
Missouri	16	3.7	(1.5–5.9)	326	96.3	(94.1–98.5)
Nebraska	27	9.0	(5.3–12.6)	419	91.0	(87.4–94.7)
New Jersey	20	10.2	(5.6–14.8)	147	89.8	(85.2–94.4)
Ohio	13	8.7	(3.4–14.0)	173	91.3	(86.0–96.6)
Oklahoma	24	3.5	(1.3–5.8)	650	96.5	(94.2–98.7)
Oregon	25	5.8	(2.1–9.5)	412	94.2	(90.5–97.9)
Pennsylvania	15	10.2	(4.5–15.8)	109	89.8	(84.2–95.5)
Rhode Island	15	6.0	(1.9–10.1)	182	94.0	(89.9–98.1)
Tennessee	—	—	—	121	98.7	(96.2–100.0)
Texas	18	4.3	(1.8–6.8)	403	95.7	(93.2–98.2)
Utah	31	12.2	(7.7–16.7)	297	87.8	(83.3–92.3)
Vermont	8	7.1	(2.1–12.1)	115	92.9	(87.9–97.9)
Washington	22	6.9	(3.2–10.7)	380	93.1	(89.3–96.8)
West Virginia	25	7.5	(4.5–10.6)	487	92.5	(89.4–95.5)
Wisconsin	12	8.8	(3.0–14.7)	133	91.2	(85.3–97.0)
Wyoming	27	12.6	(7.5–17.7)	198	87.4	(82.3–92.5)

Abbreviation: CI = confidence interval.
* Unweighted sample size.
† Weighted percentage.
§ Estimates not presented for cell sizes of five or fewer.

TABLE 8. Prevalence of Medicaid coverage at time of delivery among women with unstable coverage who had private health insurance coverage the month before pregnancy, by state — Pregnancy Risk Assessment Monitoring System, 29 states, 2009

State	Medicaid insurance at delivery		
	No.*	%†	(95% CI)
Total (n = 2,753)	**2,447**	**89.4**	**(87.3–91.5)**
Alaska	54	93.6	(86.4–100.0)
Arkansas	71	74.8	(62.3–87.2)
Colorado	82	78.5	(68.4–88.7)
Delaware	60	95.6	(90.2–100.0)
Georgia	73	92.1	(83.5–100.0)
Hawaii	120	86.3	(78.1–94.5)
Illinois	85	92.3	(85.9–98.7)
Maine	49	94.0	(86.0–100.0)
Maryland	69	89.4	(77.5–100.0)
Massachusetts	62	94.0	(87.7–100.0)
Michigan	117	88.8	(82.0–95.5)
Minnesota	47	90.5	(81.4–99.6)
Mississippi	175	92.8	(87.8–97.8)
Missouri	90	93.7	(87.5–99.8)
Nebraska	140	78.7	(70.8–86.5)
New Jersey	54	93.5	(86.6–100.0)
Ohio	105	91.4	(82.9–99.9)
Oklahoma	146	80.8	(70.4–91.2)
Oregon	113	94.9	(88.6–100.0)
Pennsylvania	39	94.9	(88.5–100.0)
Rhode Island	86	94.6	(88.9–100.0)
Tennessee	54	98.1	(94.2–100.0)
Texas	97	83.5	(75.1–92.0)
Utah	86	85.9	(78.4–93.5)
Vermont	51	82.3	(70.1–94.5)
Washington	104	97.1	(94.8–99.4)
West Virginia	109	93.7	(88.1–99.3)
Wisconsin	51	89.4	(79.0–99.8)
Wyoming	58	70.3	(57.9–82.7)

Abbreviation: CI = confidence interval.
* Unweighted sample size.
† Weighted percentage.

Multinomial logistic regression was used to assess differences in maternal characteristics among the women who had private insurance and women who had Medicaid at delivery among those who were uninsured in the month before pregnancy. Women who were AI/AN compared with white, had a high school education or less compared with more than a high school education, were unmarried compared with married, or had incomes ≤200% FPL compared with >200% of the FPL had higher odds of reporting Medicaid coverage at the time of delivery than private insurance at delivery. No difference was found in the odds of reporting an unintended pregnancy (Table 9).

Private Insurance Before Pregnancy

Among women who started with private insurance before pregnancy, the most common pattern of movement was moving to Medicaid at delivery. Nearly two thirds (61.3%) of these women were aged ≤25 years, and more than half (55.4%) were white, followed by 22.3% black and 16.7% Hispanic. Almost half (45.4%) had more than a high school education, nearly two thirds were unmarried (64.8%), approximately three fourths (74.2%) had incomes ≤200% of the FPL, and 77.8% entered prenatal care in the first trimester. In addition,

TABLE 9. Prevalence of private insurance or Medicaid coverage at delivery among women with unstable insurance who were uninsured the month before pregnancy, by selected maternal characteristics — Pregnancy Risk Assessment Monitoring System, 29 states,* 2009

	Insurance at delivery							
	Private			Medicaid				
Characteristic	No.†	%§	(95% CI)	No.	%	(95% CI)	AOR¶	(95% CI)
Age (yrs)								
≤19	30	3.8	(1.5–6.1)	822	12.4	(10.9–14.0)	—**	—**
20–25	200	39.8	(30.9–48.7)	3,418	46.3	(44.1–48.6)	—**	—**
26–34	211	48.7	(39.6–57.8)	2,496	33.4	(31.3–35.5)	—**	—**
≥35	45	7.7	(4.2–11.2)	621	7.9	(6.6–9.1)	—**	—**
Race/Ethnicity								
White, non-Hispanic	286	60.4	(55.0–65.7)	3,344	44.5	(43.2–45.9)	Ref.	Ref.
Black, non-Hispanic	50	10.4	(6.4–14.5)	1,208	14.8	(13.7–15.8)	1.2	(0.7–2.3)
Hispanic	73	21.6	(18.0–25.1)	1,900	35.4	(34.2–36.6)	1.3	(0.7–2.7)
American Indian/Alaska Native	15	0.4	(0.3–0.4)	352	1.2	(0.9–1.4)	3.6	(1.7–7.8)
Other	63	7.2	(3.8–10.6)	505	4.0	(3.3–4.7)	1.0	(0.6–2.0)
Education								
<High school	37	8.6	(4.0–13.1)	1,973	27.5	(25.5–29.5)	3.4	(1.6–7.2)
High school	155	26.1	(18.6–33.5)	2,946	42.9	(40.6–45.2)	3.0	(1.9–4.7)
>High school	285	65.4	(57.2–73.5)	2,336	29.6	(27.8–31.5)	Ref.	Ref.
Marital status								
Married	355	72.4	(64.6–80.2)	2,852	37.4	(35.3–39.6)	Ref.	Ref.
Not married	131	27.6	(19.8–35.4)	4,494	62.6	(60.4–64.7)	4.1	(2.7–6.2)
Federal poverty level								
≤200%	247	55.0	(45.5–64.6)	6,023	89.8	(88.4–91.1)	5.6	(3.7–8.5)
>200%	206	45.0	(35.4–54.5)	711	10.2	(8.9–11.6)	Ref.	Ref.
Prenatal care initiation								
First trimester	342	71.5	(63.4–79.7)	4,971	64.1	(61.9–66.4)	—**	—**
Later	135	28.5	(20.3–36.6)	2,233	35.9	(33.6–38.1)	—**	—**
Delivery location								
Hospital	486	100.0	(100.0–100.0)	7,328	99.7	(99.5–100.0)	—††	—††
Residence	—§§	—§§	—§§	22	0.3	(0.0–0.5)	—††	—††
Parity								
Primiparous	246	48.0	(40.2–55.7)	3,294	43.2	(41.0–45.4)	—**	—**
Multiparous	238	52.0	(44.3–59.8)	4,025	56.8	(54.6–59.0)	—**	—**
Pregnancy intention								
Intended	220	46.3	(38.1–54.6)	3,179	42.6	(40.4–44.8)	Ref.	Ref.
Unintended	252	53.7	(45.4–61.9)	4,050	57.4	(55.2–59.6)	0.7	(0.4–1.0)

Abbreviations: AOR = adjusted odds ratio; CI = confidence interval; Ref. = reference.

* Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

† Unweighted sample size.

§ Weighted percentage.

¶ AOR comparing characteristics of women with Medicaid coverage at delivery with those with private coverage at delivery, among those who were uninsured before pregnancy.

** AOR not presented because findings were not significant in the unadjusted and adjusted models.

†† Estimates unreliable because of small cell size.

§§ Estimates not presented for cell sizes of five or fewer.

over half of the women were primiparous (55.7%) and 62% of the women reported an unintended pregnancy (Table 10).

A small percentage (1.1%) of women who started out with private insurance in the month before pregnancy returned to private insurance at delivery (Table 6). Most of these women were aged ≥26 years (54.2%) and reported an intended pregnancy (58.3%) but were otherwise similar to the group reporting Medicaid at delivery: the majority were unmarried (54.4%), had more than a high school education (52.0%), and had received first trimester prenatal care (69.3%) (Table 10).

Another small group of women who started with private insurance in the month before pregnancy reported no insurance at delivery (1.4%–Table 6). Most of these women were aged ≥26 years (68.4%), were white (75.2%), had more than a high school education (80.6%), were married (81.5%), had incomes >200% of the FPL (63.7%), had received first trimester prenatal care (82.6%), were multiparous (57.1%), and reported intended pregnancies (60.0%). Among women who moved from private insurance before pregnancy to no insurance at delivery, 15.8% gave birth at a residence rather than a medical facility (Table 10).

TABLE 10. Prevalence of private health insurance, Medicaid, or no health insurance at delivery among women with unstable insurance who had private insurance before pregnancy, by selected maternal characteristics — Pregnancy Risk Assessment Monitoring System, 29 states,* 2009

	Private					Medicaid					Uninsured		
Characteristic	**No.†**	**%§**	**(95% CI)**	**AOR¶**	**(95% CI)**	**No.**	**%**	**(95% CI)**	**AOR****	**(95% CI)**	**No.**	**%**	**(95% CI)**
Age (yrs)													
≤19	31	18.2	(9.8–26.7)	3.5	(0.6–19.6)	546	22.1	(19.0–25.1)	7.2	(1.7–30.6)	13	3.8	(1.2–6.3)
20–25	35	27.6	(15.1–40.1)	1.1	(0.3–4.1)	934	39.2	(35.6–42.8)	3.8	(1.4–10.3)	45	27.8	(14.9–40.8)
26–34	45	32.7	(19.7–45.6)	0.9	(0.3–3.3)	767	31.3	(27.9–34.6)	2.6	(1.0–6.3)	85	46.4	(33.4–59.4)
≥35	25	21.5	(15.2–27.9)	Ref.	Ref.	200	7.5	(5.5–9.5)	Ref.	Ref.	27	22.0	(12.2–31.7)
Race/Ethnicity													
White, non- Hispanic	50	40.4	(27.0–53.7)	Ref.	Ref.	1,125	55.4	(52.5–58.3)	Ref.	Ref.	115	75.2	(64.6–85.8)
Black, non- Hispanic	34	26.3	(19.9–32.8)	10.4	(2.8–37.9)	619	22.3	(20.1–24.4)	5.2	(2.0–14.0)	12	5.6	(4.0–7.2)
Hispanic	19	17.7	(11.5–23.8)	8.4	(1.6–45.9)	355	16.7	(14.3–19.0)	5.8	(1.9–17.6)	13	4.0	(2.0–6.0)
American Indian/Alaska Native	8	2.0	(0.6–3.3)	0.4	(0.1–2.1)	89	0.9	(0.5–1.2)	0.1	(0.0–0.3)	11	4.8	(1.3–8.2)
Other	23	13.6	(2.8–24.5)	3.2	(0.7–15.5)	240	4.8	(3.5–6.0)	0.8	(0.2–2.6)	16	10.4	(0.5–20.3)
Education													
<High school	30	21.3	(6.9–35.7)	—††	—††	462	18.7	(15.8–21.6)	—††	—††	14	5.0	(3.2–6.7)
High school	37	26.7	(12.5–41.0)	—††	—††	869	35.9	(32.3–39.5)	—††	—††	36	14.4	(10.0–18.9)
>High school	66	52.0	(38.8–65.1)	—††	—††	1,080	45.4	(41.7–49.0)	—††	—††	116	80.6	(75.8–85.4)
Marital status													
Married	68	45.6	(32.2–58.9)	Ref.	Ref.	906	35.2	(31.9–38.5)	Ref.	Ref.	131	81.5	(72.7–90.2)
Not married	67	54.4	(41.1–67.8)	2.3	(0.9–6.0)	1,537	64.8	(61.5–68.1)	3.1	(1.4–6.6)	39	18.5	(9.8–27.3)
Federal poverty level													
≤200%	65	59.4	(46.7–72.0)	1.7	(0.7–4.3)	1,697	74.2	(70.9–77.5)	3.3	(1.7–6.2)	57	36.3	(25.7–47.0)
>200%	53	40.6	(28.0–53.3)	Ref.	Ref.	536	25.8	(22.5–29.1)	Ref.	Ref.	100	63.7	(53.0–74.3)
Prenatal care initiation													
First trimester	97	69.3	(56.7–81.8)	—††	—††	1,846	77.8	(74.9–80.7)	—††	—††	143	82.6	(70.7–94.5)
Later	37	30.7	(18.2–43.3)	—††	—††	552	22.2	(19.3–25.1)	—††	—††	23	17.4	(5.5–29.3)
Delivery location													
Hospital	135	99.9	(99.8–100.0)	—§§	—§§	2,435	99.6	(99.3–99.9)	—§§	—§§	139	84.2	(75.8–92.7)
Residence	—¶¶	—¶¶	—¶¶	—§§	—§§	11	0.4	(0.1–0.7)	—§§	—§§	30	15.8	(7.3–24.2)
Parity													
Primiparous	64	42.8	(33.8–51.8)	—††	—††	1,353	55.7	(52.0–59.3)	—††	—††	72	42.9	(31.3–54.6)
Multiparous	70	57.2	(48.2–66.2)	—††	—††	1,086	44.3	(40.7–48.0)	—††	—††	94	57.1	(45.6–68.7)
Pregnancy intention													
Intended	62	58.3	(50.4–66.2)	—††	—††	956	38.0	(34.5–41.6)	—††	—††	95	60.0	(48.0–72.0)
Unintended	73	41.7	(33.8–49.6)	—††	—††	1,450	62.0	(58.4–65.5)	—††	—††	71	40.0	(28.0–52.0)

Abbreviations: AOR = adjusted odds ratio; CI = confidence interval; Ref. = reference.

* Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

† Unweighted sample size.

§ Weighted percentage.

¶ AOR comparing characteristics of women who had private coverage at delivery compared with those who were uninsured, among those who started out with private coverage before pregnancy.

** AOR comparing characteristics of women who had Medicaid coverage at delivery compared with those who were uninsured, among those who started out with private coverage before pregnancy.

†† AOR not presented because findings were not significant in the unadjusted and adjusted models.

§§ Estimates unreliable because of small cell size.

¶¶ Estimates not presented for cell size of five or fewer.

To understand differences among women who ended up uninsured rather than with private insurance or Medicaid coverage, multinomial logistic regression was used. Characteristics of women who started with private insurance but had no insurance at delivery were different from those who started with private insurance and ended up either back on private insurance or with Medicaid at delivery. Women who were aged ≤25 years compared with those aged ≥35 years, were black or Hispanic compared with white, were unmarried compared with married, or had incomes ≤200% FPL compared with >200% of FPL had higher odds of reporting Medicaid insurance at delivery than no insurance; however, AI/AN women had lower odds of reporting Medicaid insurance than no insurance at delivery. Black or Hispanic women compared with white were more likely to report private insurance than no insurance at delivery (Table 10).

Medicaid Before Pregnancy

A small percentage of women (1.0%) moved from Medicaid in the month before pregnancy to private insurance at delivery (Table 6). Of these women, 63.4% were aged ≤25 years, 61.9% were white, 21.5% were black, 44.8% had more than a high school education, 72.3% had incomes ≤200% FPL, 83.9% reported first trimester prenatal care, 67.5% were multiparous, and 58.0% reported an unintended pregnancy. Among women who had Medicaid before pregnancy, experienced instability, and returned to Medicaid coverage at delivery, 69.6% were aged ≤25 years (30.5% aged ≤19 years), 45.3% were Hispanic, 85.7% had a high school education or less, 71.2% were unmarried, 96.9% had incomes ≤200% of the FPL, 57.4% were multiparous, and 56.8% reported an unintended pregnancy. Because of small sample sizes, a regression analysis was not conducted to examine difference among these groups (Table 11).

Discussion

Overall, nearly one third of women who delivered a live infant in 2009 (the year before passage of ACA) experienced changes in health insurance coverage around the time of pregnancy. Women in the changing (i.e., unstable) insurance group were different both from those who reported stable private insurance and those who reported stable Medicaid coverage. These findings suggest that women in the unstable group might be working or otherwise have incomes too high to qualify for Medicaid but too low to purchase private insurance if they do not have it through an employer, a spouse, a partner, or a parent (*48*,*49*). Overall, levels of any health insurance increased from 76.6% in the month before pregnancy to nearly 100% for prenatal care and delivery. When patterns of movement, or churning, were examined, the most common pattern was from being uninsured in the month before pregnancy to having Medicaid coverage at the time of delivery. Moving from private insurance before pregnancy to Medicaid coverage for delivery was the next most common. A small percentage of women reported other patterns of movement, such as moving from no insurance to private insurance or from private insurance to no insurance by the time of delivery.

The estimate of the percentage of women who were uninsured in the month before pregnancy (23.4%) is similar to findings from other surveys. Data from the 2008 Kaiser Family Foundation Women's Health Survey reported that 24% of women surveyed were uninsured at the time of the survey or had been uninsured at some point within the last year (*50*). Data from the 2009 U.S. Census Bureau and the U.S. Bureau of Labor Statistic's Current Population Survey (CPS) show that 20% of women aged 18–64 years were uninsured (*1*). Specifically, CPS estimated that a range of 21% to 29% of women aged 18–44 years were uninsured in 2009 (*5*). CDC's NHIS data indicated that that 17.3% of women aged 18–64 years were uninsured in 2008, a percentage that remained unchanged from estimates in 2004 (*8*).

The 2008 Kaiser Women's Health Survey reported estimates for private health insurance coverage that were slightly higher than those in this report for private insurance (61%) and lower than the estimates for Medicaid coverage (10%) among women aged 18–64 years (*50*). According to NHIS 2009 data for young adults aged 19–25 years, 53% reported private insurance and 15% public coverage. CPS 2009 estimates for private insurance coverage were 57% for young adults aged 18–24 years, 61% for those aged 25–34 years, and 70% for those aged 35–44 years (*5*). Medicaid coverage was 15% among those aged 18–24 years, 10% among those aged 25–34 years, and 9% among those aged 35–44 years, all similar to the estimates in this report among women of reproductive age who recently had a live birth.

Self-reported data were collected on women's health insurance coverage status the month before pregnancy, during pregnancy for prenatal care, and at the time of the delivery for live-born infants in 2009, before the passage of ACA. Change in pregnancy status was a key transition point both for public and private plans before ACA. At that time, pregnant women who met certain eligibility requirements could qualify for maternity care services (prenatal and delivery) through Medicaid. In 2009, the minimum income threshold for Medicaid eligibility among pregnant women was 133% of the FPL, with flexibility to increase the requirement on a state-by-state basis (*51*). In 2009, only two PRAMS states in this report had a minimum eligibility threshold of 133% of the FPL (Utah and Wyoming). Two states had minimum eligibility ranging

TABLE 11. Prevalence of private insurance or Medicaid at delivery among women with unstable insurance who had Medicaid coverage the month before pregnancy, by selected maternal characteristics — Pregnancy Risk Assessment Monitoring System, 29 states,* 2009

	Insurance at delivery					
	Private			Medicaid		
Characteristics	No.†	%§	(95% CI)	No.	%	(95% CI)
Age (yrs)						
≤19	21	16.3	(10.1–22.4)	23	30.5	(1.9–59.1)
20–25	58	47.1	(35.2–58.9)	39	39.1	(10.5–67.8)
26–34	58	31.1	(20.9–41.3)	34	26.5	(13.8–39.1)
≥35	11	5.6	(0.4–10.7)	—¶	—	—
Race/Ethnicity						
White, non-Hispanic	65	61.9	(53.1–70.6)	15	20.3	(7.8–32.8)
Black, non-Hispanic	36	21.5	(15.9–27.2)	32	29.0	(17.5–40.6)
Hispanic	16	6.6	(4.9–8.3)	33	45.3	(41.1–49.4)
American Indian/ Alaska Native	9	1.2	(1.0–1.5)	9	1.6	(1.3–2.0)
Other	20	8.8	(1.7–15.9)	8	3.7	(1.2–6.3)
Education						
<High school	39	30.1	(23.9–36.3)	48	67.0	(56.2–77.8)
High school	47	25.2	(13.3–37.0)	27	18.7	(13.3–24.1)
>High school	61	44.8	(32.0–57.6)	23	14.3	(4.7–23.8)
Marital status						
Married	70	46.0	(37.0–54.9)	34	28.8	(17.9–39.7)
Not married	78	54.0	(45.1–63.0)	66	71.2	(60.3–82.1)
Federal poverty level						
≤200%	109	72.3	(59.7–84.8)	81	96.9	(93.2–100.0)
>200%	25	27.7	(15.2–40.3)	6	3.1	(0.0–6.8)
Prenatal care initiation						
First trimester	117	83.9	(75.6–92.2)	61	57.6	(25.7–89.5)
Later	26	16.1	(7.8–24.4)	35	42.4	(10.5–74.3)
Delivery location						
Hospital	147	100.0	(100.0–100.0)	101	100.0	(100.0–100.0)
Residence	—	—	—	—	—	—
Parity						
Primiparous	44	32.5	(23.8–41.1)	38	42.6	(13.9–71.4)
Multiparous	103	67.5	(58.9–76.2)	62	57.4	(28.6–86.1)
Pregnancy intention						
Intended	70	42.0	(33.6–50.3)	44	43.2	(14.2–72.3)
Unintended	74	58.0	(49.7–66.4)	57	56.8	(27.7–85.8)

Abbreviation: CI = confidence interval.
* Alaska, Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.
† Unweighted sample size.
§ Weighted percentage.
¶ Estimates not presented for cell sizes of five or fewer.

from 133% to 185% (Alaska and West Virginia), and most set the threshold from 185% to 200% of the FPL (Arkansas, Colorado, Delaware, Georgia, Hawaii, Illinois, Maine, Massachusetts, Michigan, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Vermont, and Washington). The other five PRAMS states had income thresholds ranging from 250% to 300% of the FPL (Maryland, Minnesota, Rhode Island, Tennessee, and Wisconsin) (*51*).

Because many low-income women become eligible for Medicaid once they are pregnant, it is not surprising that the most common pattern of coverage movement found in this report was a change from being uninsured before pregnancy to having Medicaid coverage by the time of delivery. Specifically, among women who had unstable insurance, 70.2% experienced this transition; this pattern occurred in all states, regardless of the income eligibility threshold in each state. An explanation of the state-level differences in movement from no insurance before pregnancy to Medicaid at the time of delivery requires further investigation and might reflect the demographic composition of each state or the variation in state Medicaid policies (*52*).

The second most common type of movement was from private insurance in the month before pregnancy to Medicaid at the time of delivery. In 2009, some private health insurance plans did not include coverage for maternity services or did not cover prenatal care or hospital delivery for dependents (i.e., teenage daughters) (*35*,*53*). For women purchasing insurance, adding prenatal and delivery coverage might have been either too expensive or extremely difficult because pregnancy was considered a preexisting condition for which coverage was not available (*3*,*35*). Furthermore, even for women with coverage for maternity services through private plans, high deductibles and out-of-pocket costs also presented financial barriers (*3*). This might explain the reason that a substantial proportion of women (21.3%) who had unstable coverage moved from private insurance in the month before pregnancy to Medicaid by the time of delivery. Financial barriers also might be the reason that only 4.1% of women who had no insurance in the month before pregnancy obtained private insurance by the time of delivery.

Other uncommon patterns of movement might have been associated with individual situations rather than the public or private health insurance policy. A small percentage of women (1.0% of those in the unstable insurance group) started with

Medicaid before pregnancy and had private insurance at delivery. These women might have secured a new job and been able to obtain private coverage through an employer or might have gotten married and been able to obtain private coverage through a spouse or partner. Another small group of women (1.1% of the unstable group) started out with private insurance and ended up with private insurance but experienced some type of change in health insurance for prenatal care. Similarly, a small percentage of women (0.8% of the unstable group) reported starting and ending with Medicaid but having different insurance coverage status during pregnancy. These might be unique situations or might reflect reporting errors about type of health insurance during prenatal care (*54*).

Women who had no health insurance coverage at any of the three time periods comprised a small percentage of the overall population (1.1%). In addition, a small group (1.4% of the unstable group) started off with private insurance but ended up without coverage at the time of delivery. Together, these women comprised 1.5% of the overall population. Demographically, women who had no coverage at any point shared characteristics both with the stable private group (approximately half were aged ≥26 years, were white, were married, and reported an intended pregnancy), as well as the stable Medicaid group (approximately two thirds had lower education levels, had lower incomes, and were multiparous). The most striking difference between the uninsured group and the other groups (unstable, stable private, and stable Medicaid) was the high percentage of women who experienced late entry into prenatal care (45.5% among the uninsured vs. 32.2%, 7.0%, and 26.4%, respectively) and out-of-hospital births (17.1% among the uninsured vs. 0.5%, 0.5%, and 0.1%, respectively).

Women who started with private insurance and ended up without insurance at the time of delivery had characteristics that were similar to women with stable private coverage. This group also had a high percentage of births occurring at a residence (15.8% among women with unstable insurance who started off with private coverage). These women might have had a private insurance plan that included prenatal care coverage but did not cover out-of-hospital births, and they might have paid the cost of the residential delivery out of pocket (*55*). Although this might be the explanation for the 15.8% of women who had home births, it does not explain the 84.2% of women who had hospital births and who started out with private insurance in the month before pregnancy but were uninsured at the time of delivery. Differences in Medicaid eligibility thresholds by state might be one explanation; however, state-level sample sizes for this pattern of movement were too small to analyze.

The patterns of unstable health insurance coverage around the time of pregnancy that occurred in 2009 were virtually identical to the patterns reported in a study using 1996–1999 PRAMS data (*44*). The analysis of PRAMS data from nine states found that 32%–35% of women experienced transitions in insurance coverage from the month before pregnancy to the time of delivery, a finding very similar to the 30% found in this report using pooled data from an additional 20 states. In addition, that study also found that the most common form of movement was from no insurance before pregnancy to Medicaid coverage at delivery (range among states: 13%–32%), followed by movement from private insurance to Medicaid coverage (range: 3%–10%). Twenty years later, a similar phenomenon is occurring: in the years since that study, PRAMS data have consistently shown lack of coverage during the prepregnancy period and nearly universal levels of coverage for prenatal care and delivery (*24*,*56*).

These baseline data collected from PRAMS in 2009 before the major policy shift that occurred with the passage of ACA in March 2010 can be used to assess the impact of the legislation on patterns of insurance coverage for women around the time of pregnancy. ACA includes provisions both to address challenges for women attempting to purchase private insurance on the individual market and provisions to address lack of coverage for low-income, nonpregnant adults (*37*,*57*). For example, in September 2010, several early market reforms for consumer protections were passed under ACA, including no lifetime dollar limits, dependent coverage to age 26, and provision of preventive services without cost-sharing (*41*). Another opportunity for potential improvement in insurance coverage as part of ACA includes the attempt to improve access and affordability of health insurance through market reforms and the Health Insurance Marketplace, a marketplace for individuals and small businesses to purchase more affordable insurance. Since 2014, all new individual health plans, whether inside or outside the marketplace, and all small- and large-group health plans, have been prohibited from charging higher premiums based on sex and from denying coverage based on preexisting conditions such as chronic medical problems and pregnancy (*37*,*38*).

The second opportunity for improvement in insurance coverage stability is through the expansion of Medicaid eligibility. Under ACA, states have the option to expand eligibility for Medicaid to include all persons with incomes up to 138% percent of the FPL and receive enhanced federal support to pay for the expansion (*41*). In states that elect to expand coverage, low-income women could benefit from continuous access to health care and preventive health services not just once they are pregnant but before and after pregnancy as well (*29*). This type of continuous coverage would be an important advancement for maternal and infant health and has been recommended previously (*14*). At the time of this

report, 29 states and the District of Columbia had decided to move forward with Medicaid expansions (*58*).

As implementation of health care reform moves forward, the impact of state Medicaid expansions and other provisions of ACA might affect patterns of health insurance coverage for women. For example, if the factors that discouraged some women from using private insurance and moving into Medicaid coverage in 2009 once they became pregnant (e.g., exclusion of maternity coverage as a benefit from individual plans) are mitigated through ACA, the percentage of pregnant women who shift from private coverage to Medicaid might decrease. As a state-based surveillance system, PRAMS data can be used to assess changes in women's health insurance coverage around the time of pregnancy at the state level. Future studies might use the 2009 data in this report as a baseline measure when assessing differences in the implementation of ACA as it relates to coverage for pregnancy services.

Limitations

The findings in this report are subject to at least three limitations. First, because PRAMS data are not available from all states, the results of this report are not generalizable to the entire United States. Second, the information on insurance coverage status was self-reported by the PRAMS respondents several months after delivery; the majority of women responded within 3–6 months after delivery. Therefore, some women might not have been able to recall their insurance coverage. In addition, some of the women might not have been aware of the type of coverage they had, particularly if they qualified for emergency Medicaid only at delivery. However, previous studies comparing the PRAMS survey data to birth certificate and medical records data report high correlation in terms of accurately reporting Medicaid coverage at delivery (*59*,*60*). Finally, broad categories were used for insurance coverage; specifically, women with military insurance coverage were categorized as part of the private insurance group, and women reporting IHS coverage were categorized as part of the uninsured group. On the questionnaire, women who selected the IHS insurance response might be reporting either receipt of services at an IHS facility or receipt of contract health service funding from IHS, the latter of which is most similar to being uninsured (*61*).

Conclusion

One of the goals of PRAMS is to provide state-level data on women's health before, during, and shortly after pregnancy that can be used by health agencies, researchers, and policy makers to monitor trends in health indicators and identify priorities for public health action. PRAMS data have been used to gain support for a wide range of programs and initiatives aimed at improving the health of women and infants around the time of pregnancy (*62*). This report highlights findings from 2009 PRAMS data on health insurance coverage among women who delivered live infants before passage of ACA. With the passage of the ACA in 2010, women who were previously uninsured or had insurance that did not provide adequate coverage might experience better access to health services and better coverage. Changes in health insurance patterns after passage of ACA can be assessed and monitored using PRAMS state-specific baseline estimates from 2009.

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